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

FINAL REPORT

August 15, 2014

This publication was produced for review by the United States Agency for International Development. It was prepared by Deloitte Consulting.

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(HPEP)

CONTRACT NUMBER: AID-OAA-I-13-00018/AID-114-TO-13-00006

DELOITTE CONSULTING LLP

USAID/CAUCASUS OFFICE OF ECONOMY, ENERGY AND
ENVIRONMENT

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LIST OF ACRONYMS

Acronym	Definition
ABC	
ADB	Asian Development Bank
AYPEG	Association of Young Professionals in Energy of Georgia
CAIDI	Customer Average Interruption Duration Index
CBA	Cost Benefit Analysis
CYPRESS	Capacity, Performance, Results, Sustainability
DCA	Development Credit Authority
EBRD	European Bank for Reconstruction and Development
E&G	Electricity and Gas
EFET	European Federation ad Energy Traders
EMRA	Energy Market Regulatory Authority of Turkey
ENS	Electricity Not Supplied
ENTSO-E	European Network of Transmission System Operators for Electricity
ESCO	Electricity System Commercial Operator Ltd.
EU	European Union
GEDF	Georgian Energy Development Fund
GEMM 2015	Georgian Electricity Market Model 2015
GNERC	Georgian National Energy Regulatory Commission
GSE	Georgian State Electrosystem
GOG	Government of Georgia
GOT	Government of Turkey
HIPP	Hydropower Investment Promotion Project
HP	Hydropower
HPEP	Hydro Power and Energy Planning
HPP	Hydropower Plant / Hydropower Project
ICG	Investment Coordination Group
IFC	International Financial Corporation
IFI	International Financial Institutions
IM	Information Memorandum
IPD	Investment Projects Department
IR	Intermediate Result
ISSET	International School of Economics at Tbilisi State University
KfW	Kreditanstalt für Wiederaufbau (German government-owned development bank)
KPI	Key Performance Indicators
M&E	Monitoring & Evaluation

MO	Market Operator
MoE	Ministry of Energy
MoU	Memorandum of Understanding
MW	Megawatts
PPA	Power Purchase Agreement
PPP	Public Private Partnership
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
TEIAS	Türkiye Elektrik İletim A.Ş., the Turkish Transmission System Owner and Operator
TNA	Training Needs Assessment
TWh	Terawatt Hours
USAID	US Agency for International Development
USAID HIPP	USAID Hydropower Investment Promotion Project
USG	US Government
USoA	United System of Accounting
USTDA	US. Trade and Development Agency
VOLL	Value of Lost Load
WB	World Bank
WEG	World Experience of Georgia

1.0 EXECUTIVE SUMMARY

Deloitte Consulting LLP is proud to present this Final Report for the Georgia Hydro Power and Energy Planning Project (HPEP), USAID Contract No. AID-OAA-I-13-00018/AID-114-TO-13-00006, which was implemented from September 01, 2013 to August 31, 2014. This Final Report highlights the Project's activities, accomplishments and results.

The overarching goal of USAID's HPEP was to facilitate private sector development of hydropower resources of Georgia that are environmentally, socially and economically sound. As part of this goal, USAID HPEP supported the Government of Georgia (GOG) in establishing an energy planning process including the development of an initial national energy policy and energy strategy, the development of a cost benefit analysis model for HPP development on watersheds, and implementing the Georgia Energy Market Model of 2015 (GEMM 2015) for the establishment of an electricity trading mechanism (ETM) to facilitate cross-border clean energy trading and support achievement of the following objectives:

- accomplishment of tasks outlined in GEMM 2015;
- financing of new run-of-river, hydro power plant projects by means of non-recourse (project-based) loans;
- cross-border, competitive clean electrical trading; and,
- funds leveraged from public and private sector in hydro power development.

HPEP efforts have been clearly reflected in a number of positive steps by the Government of Georgia taken towards the ultimate goals of GEMM 2015 the introduction of a competitive electricity market in the country and the legislative and regulatory framework for selling renewable electricity into international electricity markets.

The project was successful, directly enabling the GOG to secure project financing for Clean Energy Invest's 185 MW of new capacity and enabling USAID to deliver \$250 million of clean energy investment. Even though USAID did not complete the pre-feasibility study for this project, the HPEP team provided support to the investors and the GoG in developing a reasonable enabling environment that allowed for limited non-recourse financing. Program success was as well demonstrated by launching cross-border electricity trading between Georgia and Turkey.

2.0 SUMMARY OF PROJECT ACCOMPLISHMENTS

- As mentioned above, financing of new hydro power plant projects by means of non-recourse (project-based) debt that was a primary goal of HPEP, was completed during the Project. HPEP provided substantial assistance to Clean Energy Invest and the IFC which financed construction of the 175 MW Shuakhevi HPP and the 10 MW Skhalta HPP projects (185 MW) totaling approximately USD 250 million. Completion of these projects should lead to more project financing in the future.
- By the request of the Ministry of Energy, HPEP developed the National Energy Policy White Paper for Georgia which sets out a strategic policy framework addressing the priorities and challenges in the energy sector of Georgia, and the first draft of Energy Strategy providing short and medium term strategies and a long-term vision for Georgia that are aligned with the National Energy Policy of Georgia. The National Energy Policy White Paper developed by HPEP was accepted by the GoG as a basis for the Country's Energy Policy Development and published for public consultations before submitting it to the Parliament of Georgia for approval which is scheduled to take place in fall this year.
- HPEP supported development of a Cost-Benefit Analysis (CBA) Model of watershed-based hydropower development in the Enguri watershed area including assessment of environmental and social costs. The model was elaborated by the working group of

five NGOs and TBSC Consulting. The model provides guidance for the stakeholders to complete a CBA for the watershed of their interest describing all the stages and steps of the process. It allows comparing the total costs and benefits accrued from the social and environmental services provided by the watershed for a baseline scenario compared to the scenario in which hydropower facilities are installed. CBA is seen as an important tool for decision-making for planning of HPPs in Georgia by various stakeholders. NGOs, participating in the CBA Working Group, recommended to proceed with further development of the Model, and to integrate it into the Environmental Impact Assessment Procedures under the Ministry of Environment and Nature Resources Protection to make it legally binding.

- The Parliament of Georgia adopted landmark amendments to its key energy legislation in December 2013 ushering in major reform in the electricity sector supported by extensive assistance from USAID HPEP. These amendments to the Electricity and Gas Law of Georgia had an immediate impact on the structure of the electricity market with the establishment of the Market Operator and a new focus on daily competitive electricity trading. With the requirement that the energy regulator establishes rules on regulatory accounting and market monitoring, the electricity sector will see increased transparency and improvement in the rule of law.
- HPEP continued guidance to GNERC in reforming the regulatory framework including development of the USoA for the electricity sector of Georgia. Project assistance included development of a regulatory chart of accounts for the electricity sector, instructions to the chart of accounts and capacity building of GNERC and the electricity sector licensees. In October 2013, Georgia's energy regulator (GNERC) endorsed introducing Regulatory Accounting as a new task. It was a win-win success story as both consumers and investors reap benefits from this proven approach to regulatory and management oversight.
- Following on the USoA, and as recommended by USAID HPEP, the GNERC adopted a performance-based tariff setting methodology for electricity transmission networks, using an incentive and cost-based approach. The approach included incentives for reducing transmission energy losses, efficiency improvement in the overall operation of the networks (X-factor), cost recovery based on the actual costs in accordance with the adopted USoA and setting tariffs in regulatory periods (multi-year). The investors in clean energy can now fully understand the tariff-setting process and reasonably predict the price of transmission network services for the future.
- HPEP developed a draft electricity transmission grid code for Georgia which was adopted by the energy regulator, GNERC. As the first step in developing the national grid code for Georgia, GNERC adopted the first 4 Chapters of the Transmission Grid Code in April 2014.
- The Georgian Transmission Grid Code was harmonized with the Turkish grid code and Europe rules established by ENTSO-E, thereby ensuring that the transmission system operators have clear rules for cross border trading. USAID HPEP suggested establishment and supported a working group between the energy regulators of Turkey and Georgia to continually ensure harmonization of their grid codes and other regulations as those regulations change in each country.
- Apart from Transmission Grid Code, USAID HPEP and GSE experts developed a draft Distribution Grid and Metering Codes for the Georgian electricity system. Introduction of these Codes compatible with modern European standards will greatly enhance the enabling environment for potential investors and developers of Georgian hydropower potential.

- To prepare the Transmission System Operator (TSO) for competitive electricity market, HPEP supported GSE in development of the TSO including proposed organizational changes, and development of internal procedures for the TSO by working on new organizational design and description of internal procedures. These activities should result in transformation of GSE's current Dispatch Center into an independent, efficient transmission system operator.
- As stipulated by E&G Law Amendments, to create a Market Operator for the competitive electricity market HPEP has been supporting ESCO in development of the Market Operator including draft organizational changes and development of the internal procedures for the MO and implementation plan for electricity market trading that enables Georgian HPPs to sell electricity into Turkey and other ENTSO-E markets.
- USAID HPEP has developed software using cloud technology that will allow market traders to access historical information, access information on real time market prices in other countries, to submit nominations for the next day and to review their settlement for the past billing period. The software was accepted by GSE and ESCO and installed on their servers.
- HPEP drafted and the Georgian counterparts agreed upon a template Electricity Supply Agreement based on the EFET standard contract used in Turkey.
- HPEP carried out numerous capacity building and stakeholder coordination activities, described in details further in this Report, which were targeted to increasing awareness and capability of Georgian energy sector stakeholders and market participants about competitive market models and mechanisms necessary for proper operation of the electricity market to meet the requirements for Georgia to join the EU Energy Community.
- USAID HPEP organized GEMM 2015 Consensus Retreat with main Georgian electricity stakeholders (MoE, GNERC, GSE, ESCO) and agreed on Georgia's future market model that was announced by the deputy Minister of Energy, ***I. Eloshvili, at HPEP's 3rd Cross-Border Electricity Trading Conference: "In medium term we must achieve creation of a free, unregulated market which will enable investors to set fair and prudent prices on their production."***

To achieve the above listed goals, Deloitte Consulting LLP provided technical assistance ranging from legal and policy advise, capacity building, financial planning, and outreach. HPEP was engaged in three distinct but interdependent areas of technical assistance to attract and leverage significant hydropower investment:

- Institutional and Human Capacity Development
- Implementation of the Rules, Regulations, Procedures and Processes
- Support for Investor Outreach

As detailed below, the project exceeded targets in each of these task areas.

3.0 PROJECT OVERVIEW

USAID's Hydro Power and Energy Planning (HPEP) Project continued the successful implementation of GEMM 2015 started by USAID's Hydropower Investment Promotion Project (HIPP). In addition, HPEP initiated work with the Ministry of Energy on national energy planning development with some early success. These efforts are all aimed at improving the enabling environment for late-stage financing of new run-of-river hydropower (HPPs) in Georgia.

HPEP's staff worked on a daily basis with the representatives of the Ministry of Energy (MoE), Georgian National Energy and Water Supply Regulatory Commission (GNERC),

Electricity System Commercial Operator (ESCO), and Georgia State Electrosystem (GSE). HPEP’s technical assistance included organizational design and development, legislative and regulatory development, development of contract templates, harmonization with Turkey’s electricity trading platforms and related rules and procedures, and IT development.

HPEP continued to work closely with the donor community. For assistance related to ESCO, HPEP coordinated its efforts with EU-funded INOGATE experts. For GNERC assistance, the EU-funded e-Control and HPEP worked hand-in-hand. The World Bank supported the development of IT-related technical assistance and loans for new IT platforms that will support GEMM 2015. In addition, NARUC through USAID funding supported GNERC in development of the Commissioners and its staff. USEA through USAID funding supported the planning efforts of GSE including cross border interconnection capacity calculations.

3.1 TECHNICAL APPROACH

HPEP’s technical approach was based on the scope of work outlined in the Contract Task Order, and, during its implementation, incorporated lessons learned from USAID HIPP, HPEP’s predecessor project. The principal goal of HPEP was to identify, leverage, and incentivize investment opportunities, resulting in private sector commitment to construct run-of-river hydro power plants leading to increased generating capacity. Result must include implementation of GEMM 2015 and secure non-recourse project financing to HIPP-developed and other run-of-river hydro power plant projects.

In order to better support the goal of stimulating and securing international investments into Georgia’s small and medium-sized hydroelectric power market, HPEP expanded its work in promoting hydropower development by responding to requests from the Ministry of Energy to help create an enabling environment to better attract investment in run-of river hydro power plants; and to assist the Ministry in developing energy policy and strategy, and implement electricity trading mechanism through extended capacity building activities provided for all Georgian energy stakeholders including MoE, GNERC, ESCO, GSE, private market players, domestic and international developers. HPEP demonstrated a thorough knowledge of program complexities and results, as well as a feasible plan to achieve those results.

3.2 RESULTS FRAMEWORK

The table below sets out the outputs of the activity outlined in the Task Order, and describes the status of each at the end of the contract.

#	Target	Status at Contract End
1	Assessment of HIPP at the beginning and recommendations on going forward for the duration of the project	Developed and delivered to the USAID in the first quarter of the Project.
2	Energy strategy development plan of Georgia	HPEP developed the Energy Policy Whitepaper and supported the MoE in final development of the National Energy Policy. HPEP conducted a survey on different types of wood, gas and electricity heaters most commonly used in Georgia and their efficiency. HPEP also conducted a household energy end-user survey to determine the uses and volumes of energy consumed by households in Georgia. This is a critical input to the energy strategy models. Based on the rigorous analysis and discussions with key stakeholders, HPEP developed the Energy Strategy White Paper and it was delivered to the MoE. HPEP provided presentations to stakeholders on the Whitepaper and provided consultations to the MoE.

		<p>HPEP coordinated energy planning process with the Ministry of Energy of Georgia. HPEP conducted an extensive training program of the Ministry's Analytical Department and supported updates to the computer model, MARKAL Georgia, used for strategic analysis.</p> <p>HPEP team met with several experts in different energy fields to share with them the strategy and to obtain their feedback.</p>
3	Six month activity plans agreed upon by MOE with results and progress identified	The first 6-month action plans for Oct. 2013 – Apr 2014 were developed and delivered in Oct 2013 and a second set was developed in late Spring 2014, which were eventually approved by the MoE and the counterparts.
4	A cost-benefit analysis model of watershed-based hydropower development with environmental and social impact analysis	<p>USAID HPEP organized a working group of Government officials and environmental NGOs that focused on developing a model process for examining HPP development on watersheds. The process was defined and initial work on analyzing Enguri watershed was completed. The working group identified many gaps in data which will be needed before definitive recommendations can be made on HPP development in the Enguri watershed.</p> <p>Three sample HPPs (Pari, Enguri 6 and Mulkhura HPPs) from the Enguri watershed were selected for CBA analysis for demonstration.</p> <p>CBA Model for Enguri Watershed Area was developed and presented to all stakeholders: the Government, Non-Government, donors and IFIs.</p>
5	Special studies or assessments as requested by the COR	Approximately 9 requests per month were received from the CoR and HPEP staff responded to each request.
6	Capacity building and training material	<p>Presentations, reports, analysis and assessments were prepared for strengthening capacity of the Georgian Energy stakeholders: MoE, GNERC, MO, and GSE market participants.</p> <p>For example, HPEP provided extensive training to GNERC and electricity generation, transmission, dispatch and distribution licensees on the following USoA topics:</p> <ul style="list-style-type: none"> • Regulated (Regulatory) Chart of Accounts • Instructions to the Regulated Chart of Accounts • Accounting Guidelines (Policy) on Property, Plant and Equipment • Accounting Guidelines (Policy) on Revenues, Costs, and Expenses • Accounting Guidelines (Policy) on Contribution and Grants. <p>In order to meet GNERC's immediate needs, HPEP developed drafts of the GNERC's revised organizational structure, position grading system, organizational charter and 95 job descriptions.</p> <p>For assisting GNERC in long term capacity development, HPEP elaborated GNERC Capacity Development Plan. HPEP developed and delivered a series of trainings for market participants on competitive market operations. HPEP provided a series of trainings on energy planning and the use of MARKAL Georgia.</p>
7	Once a year cross-border energy trade conference in Georgia and twice a year stakeholder meetings	<p>The Third Cross-border Electricity Trade Conference was held on July 10-11, 2014 attended by 160 persons.</p> <p>HPEP also conducted an energy development conference at the Georgia Technical University with a special focus on women energy leaders of Georgia, attended by nearly 100 participants.</p> <p>HPEP held two stakeholder meetings to provide updates in the GEMM 2015 progress and to obtain consensus on key</p>

		issues to be resolved by the GoG in promoting new run-of-river hydropower plants.
8	One study tour to Europe	HPEP organized a Study Tour in March 30, 2014 – April 05, 2014: Twelve officials from the main Georgian energy stakeholders (GNERC, MO, GSE and ESCO) including the GNERC Chairman, Directors of ESCO and GSE, Deputy Minister of Energy and USAID and HPEP representatives participated in the electricity trading study tour in Europe (Slovenia, Germany, Austria)
9	GEMM 2015 deliverables as per GEMM 2015 book, corresponding to Section 7, elements for Sept 2013 – Sept 2014 except as may otherwise be agreed upon in writing by USAID.	The documents related to GEMM 2015 development are categorized according to the GEMM Book Chapters and uploaded on www.hydropower.ge . During HPEP, over 50 documents were uploaded and made available for potential investors, GoG officials and other interested parties.
10	Updated MARKAL Model of Georgia	Previously, the MARKAL Model of Georgia was based on 2006 modeling structures and data set from 2009. HPEP collected available energy consumption/production data from GEOSTAT, energy end-user surveys, and energy sector entities and this data was inputted for the base year 2012. A HPEP subcontractor conducted a nationwide energy end-use survey for households. Incorporation of the survey results into MARKAL Georgia model was completed. Also modeling structures of MARKAL Georgia model were updated so that the model now better represents the energy system in 2012. Scenarios including energy independence, high levels of energy efficiency, and high levels of renewable energy sources, high industrial and commercial energy growth and natural gas security were developed in cooperation with the MoE's Analytical Department.
11	Maintenance of www.hydropower.ge	Hydropower.ge was restructured according to the Projects goals, maintained and broadly promoted among investors and other stakeholders including all power market participants. Electronic GEMM 2015 Book was uploaded on the web-pages internal users' menu. The site receives, on average, 350 unique hits a week and the maximum number to date has been 1100 unique hits in one week.

3.3 TASK 1. INSTITUTIONAL AND HUMAN CAPACITY BUILDING

- As well as meeting new clean energy capacity development targets throughout the duration of the contract, the HPEP team remained committed to helping ensure Georgians will be able to effectively govern, manage and operate the country's evolving power system once USAID assistance ceases. To this ends, the team provided intensive capacity building to Georgia's four main energy agency stakeholders: MoE, GSE, ESCO and GNERC; skills development areas included competitive power market development and electricity trading, using IT systems to enable power market development, regulatory accounting, performance based transmission tariff design and cross border interconnection auctioning procedures.
- Through its work with potential private sector developers, IFIs, MoE and other stakeholders, HPEP identified a number of measures that should be taken to improve the enabling environment for Georgian hydropower investment. As a result, HPEP focused its activity on further development of the Georgian power market through innovative initiatives such as development of GEMM 2015 and an electricity trading mechanism that required providing support to several entities within Georgia's energy sector (GNERC, GSE, and ESCO in coordination with the Ministry of Energy). USAID/HPEP was at the forefront of these plans, coordinating efforts between various donors and IFIs and ensuring assistance was complementary. HPEP also organized

and led regular workshops and discussions on the implementation of GEMM 2015 among energy stakeholders and development partners.

- A new GNERC chairperson was appointed in September 2013. As one of her first priorities, the new Chairperson requested HPEP assistance in re-organizing the Commission by January 1, 2014. HPEP developed a revised charter, new organizational design, developed detailed departmental and division level activity descriptions and created 95 job descriptions for four core departments of GNERC. This effort helped GNERC to transform its main focus from dispute resolution between retail consumers and licensees to setting tariffs, adopting market regulations and monitoring energy markets.
- To secure buy in for, and to promote, GEMM 2015 and the ETM, HPEP organized the third regional conference dedicated to cross-border electricity trading (the 1st - in November of 2012, the 2nd in May of 2013 during USAID HIPP), which by linking buyers and sellers of cross-border clean energy enhanced the potential for regional electricity trade, thereby contributing to Georgia's continued economic and social development, and energy security. The Conference's stated goals were to: facilitate business-to-business partnerships between HPP developers that have signed MOUs with the GOG and energy off-takers from Turkey; increase knowledge of the basics of electricity trading through a series of workshops; and to explore technical issues related to regional electricity trading through presentations and panel discussions. This conference took a marked difference from the first two conferences – the Ministry of Energy and energy sector entities took the lead this year in explaining the goals of GEMM 2015 and progress to date in development of the competitive electricity market,
- Many of the electricity sector decision makers participated in the study tour to Europe coordinated by the HPEP team. The participants visited Slovenia, Austria and Germany. The topics covered included market coupling, the EU Third Energy Package, the roles and responsibilities of the market operator and the transmission system operator and many other competitive market issues. This study tour had long-lasting impact and was often referred to in discussions between decision makers.
- As well as Georgian government energy agencies, HPEP provided extensive capacity building in hydropower development and electricity trading issues to:
 - Georgian and international electricity market participants. HPEP designed and implemented an extensive training program on competitive markets for Georgian electricity market players. The program covered the major aspects of market design, market structures, enabling environment and the role of various electricity sector entities.
 - The media, through a Local Media Capacity Building Workshop, as well as through press releases, articles and newsletters. The media was always broadly represented at HPEP organized events.
 - Students, PhD students and other post-graduates within academic institutions, focused on power engineering and energy economics. HPEP organized the third student conference at the Georgian Technical University (GTU). (Previous two "Young Leaders' Conferences were organized under USAID HIPP at ISET Policy Institute and GTU) dedicated to helping young experts to develop their roles within the Georgian energy sector.
- HPEP provided significant support to the newly named **Market Operator** (formerly ESCO) responsible for the electricity hourly balancing market and the day-ahead

exchange. HPEP supported the development of a strategic planning approach and explained the CYPRESS model for organizational development of the market operator.

- HPEP also supported the design and development of an IT platform for electricity trading based on cloud technology. The new platform supports the Market Operator, the future TSO, and all market participants in the month ahead and day ahead trading markets. This platform allows electricity traders to access metering files and key information such as system conditions, weather, and market prices and make trading notifications from any location with any telephone or other mobile communication device. For this, USAID HPEP created a computer model to support daily transaction nominations by most of the Market Participants. In addition, USAID HPEP proposed the use GTMax software, operated by the licensed national dispatcher GSE, for scheduling the “regulated” hydropower plants by substantially simplifying GTMax’s application without prejudice to the results of planning. HPEP produced the Report on Hourly Planning for Market Players for the Georgian Electricity Market Based on Hourly Metering Data from Energo-Pro which focused on the applicability of the HPEP hourly scheduling model. The applicability of the model was evaluated for Energo-pro, which provided the necessary historical hourly data. Presentation on Partial Pool software developed was made for Market Operator as well as for GSE. HPEP also prepared the Scope of Work for Partial Pool Software. The activities described here were completed and Partial Pool software for hourly bilateral contracts developed and installed at MO. Trainings were conducted for MO and Market participants.
- The HPEP Regulatory Team developed an extensive set of documents related to the **Uniform System of Accounts** for the electricity sector including the chart of accounts, instructions to the chart of accounts, accounting policy and guidelines, the annual financial reporting forms and instructions to the reporting forms. The USoA will form the basis for cost-based tariffs, greatly increase transparency in the energy sector, and provide a basis for benchmarking utility performance and developing performance improvement programs. The entire USOA (approximately 1000 pages) is expected to be adopted by GNERC by September 2014 and implemented by all energy sector entities by January 1, 2015.
- GNERC has adopted the electricity **transmission grid code**. This grid code provides the technical procedures for operating the competitive electricity market and works in tandem with the Electricity Market Rules. The grid code will transform the existing dispatch group in GSE into a TSO recognizable by the European electricity network system operator group (ENTSO-E.) HPEP drafted and supported the electricity sector entities in their review and final drafts of the grid code. In addition, with support from HPEP, GNERC established a standing working group with the Turkish energy regulator, EMRA, to focus on harmonization of regulations for cross border trading including the transmission grid code.

3.4 TASK 2. IMPLEMENTATION OF THE RULES, REGULATIONS, PROCEDURES AND PROCESSES DEVELOPED

- Implementation of GEMM 2015 made significant progress with the support of HPEP. The concept of day ahead planning (the pre-cursor to hourly balancing and day ahead power exchange) was accepted by both ESCO and GSE, with both adopting respective work plans to **implement day ahead planning** by summer 2014. A new computer model was developed to support forecasting of month ahead (by hour) and day ahead (by hour) generation production and electricity demand for electricity

market players. The model uses historical hourly load data for typical days from GSE's Alpha Center for estimating next day daily load curves.

- GNERC also accepted the concept of electricity market monitoring - GNERC experts worked with HPEP to develop monitoring rules including responsibilities of market participants to regularly report information on market activity.
- USAID HPEP provided two documents concerning the Turkish power market. The first document details the process which Turkey's electricity sector followed to implement day ahead planning, then development of the hourly balancing market and finally the introduction of the new power exchange. This document will be used as a guide as Georgia goes through a similar process. The second document along with several companion presentations to stakeholders covered the concept of a Georgian price node on the Turkey's power exchange that will allow new Georgian HPPs to enter into the day ahead market in Turkey – giving them access to this lucrative market and allowing the HPPs to adjust their day ahead generation plans without suffering a penalty on the Georgian balancing market.
- In support of GSE, HPEP's experts wrote several detailed reports on the introduction of the balancing market, including specifics on:
 - Balancing Responsible Parties
 - Balancing Groups and their Administration
 - Regulated and Competitive Pricing Mechanisms on the Balancing Market
- HPEP recommended a number of amendments to the **Electricity and Gas Law** necessary to implement the Georgian Electricity Market Model (GEMM 2015). The revised law was enacted in December 2013 and provides for daily electricity trading, the electricity market transmission and distribution grid codes, regional transit of electricity as a new activity for transmission companies, increasing the role of the energy regulator in overseeing and monitoring the progress of the competitive electricity market, development of the Uniform System of Accounts (USoA) and many other aspects of GEMM 2015.
- In further support of GEMM 2015 implementation, HPEP updated the Electricity Supply Agreement (ESA) based on comments from representatives from GNERC, ESCO, MoE and GSE. The ESA is a **template agreement** for the sale of electricity from Georgian generating plants to electricity off-takers in Turkey. The final draft of the ESA was reviewed and harmonized with the Turkish electricity regulator, EMRA. HPEP also created a template contract between the TSO (GSE Dispatch) and the transmission companies (GSE transmission, EnergoTrans, Sakrusenergo, and EnergoPro) covering planning, investment and operation coordination. Electricity exports to the EU took a step forward with the Government's decision to become a member of the **EU Energy Community**. And HPEP provided comments and recommendations for ongoing GSE-TEIAS bilateral agreements and compliance with the Third EU Energy Package.
- HPEP developed a process and model that provides a framework for completing a comprehensive watershed-wide cost and benefit analysis. The process includes various steps, including identification of thematic areas, screening and making ABC analysis of the thematic areas, compiling meta-data, selection of the pricing methodologies, data gathering, developing and filling-in mini-models and finally running different scenarios for the selected HPPs. Three sample HPPs (Pari, Enguri 6 and Mulkhura HPPs) from the Enguri watershed were selected for the template CBA analysis for demonstration. The model was presented to all stakeholders

including the Government of Georgia officials, NGOs, donors and IFIs

- HPEP initiated **Energy Planning** activities including reviewing the energy sector structures, market designs, ownership, information and data, and legislative and regulatory frameworks. HPEP also interviewed several experts in the energy field within and outside the sector and reviewed several previous related reports. Based on this analysis, HPEP worked directly with the MoE in developing a draft **Georgia Energy Sector Policy Whitepaper**. The Whitepaper was accepted by the MoE as a basis for the National Energy Policy.
- In accordance with the main directions of the Policy Whitepaper HPEP developed the **National Energy Strategy Whitepaper** for the MoE – the strategy projects energy supply and demand over the next 15 years in Georgia and makes recommendations to achieve greater efficiencies. Background work included the training the MoE’s Analytical Department personnel on Energy Strategy/MARKAL Georgia, extensive updating of the MARKAL Georgia model, and conducting an end-use energy survey for residential consumers.

3.5 TASK 3. SUPPORT TO INVESTOR OUTREACH

- USAID HPEP continued providing support services to MOE in driving the investor outreach process for HPPs identified under HIPP. The high level of interest from potential developers in Georgian HPP opportunities significantly increased over the course of the Project. Potential developers remained impressed with the high potential plant factors of Georgian HPPs, and continued to look to trade opportunities with Turkey. Positive steps taken by the GoG towards enabling environment, supported by HPEP, further raised investors’ interest. The amendments to the MoU process greatly enhanced the regulatory framework for investors in new run-of-river HPPs. Investor portal www.hydropower.ge maintained and updated during HPEP became very popular among hydropower developers and investors with around 350 daily hits on average.

4.0 PROJECT TEAM

HPEP was implemented by Deloitte Consulting LLP in collaboration with DTT Georgia, DTT Turkey, and its Georgian sub-contractors: WEG, TBSC, and AYPEG which together with the HPEP Team worked on the Cost-Benefit Analysis, MARKAL Georgia Model training and upgrade of MARKAL Georgia model, and End-user Survey as per the Subtask of Strategic Energy Planning of the Project Task Order. HPEP also subcontracted five NGOs to support the development of the CBA for HPP development on watersheds.

USAID/HPEP International Team, Tbilisi, Georgia		
Chief of Party	Michael Jake Delphia	Deloitte Consulting
Deputy Chief of Party	Giorgi Chikovani	DTT Georgia
Legal Advisor	Geoff Wright	Deloitte Consulting
Competitive Power Market Expert	John Levett	Deloitte Consulting
Competitive Power Market and Modeling Expert	Gergana Stoitcheva	Deloitte Consulting
HICD Expert	Lee Mazanec	Deloitte Consulting
Power Market Expert	David Riposo	Deloitte Consulting
Energy Policy Advisor	Ivane Pirveli	DTT Georgia
Power Market Advisor	Valery Vlatchkov	Deloitte Consulting
Legal Lead Advisor	Mariam Ioseliani	Deloitte Consulting Overseas Project
Legal Assistant	Anano Onashvili	Deloitte Consulting Overseas Project
Legal Assistant	Irakli Sulkhaniashvili	Deloitte Consulting Overseas Project
Hydropower Engineer	Gigla Sikharulidze	Deloitte Consulting Overseas Project
Environmental Specialist	Keti Skhireli	Deloitte Consulting Overseas Project
Energy Strategy Advisor	Lela Jgerenaia	Deloitte Consulting Overseas Project
Regulatory Lead	Irma Kavtaradze	Deloitte Consulting Overseas Project
Energy Market Operator Lead	Zviad Gachechiladze	Deloitte Consulting Overseas Project
Outreach and HICD Lead	Elene Ghubianuri	Deloitte Consulting Overseas Project
Communication Manager	Irina Iremashvili	Deloitte Consulting Overseas Project
Communication and Risk Management Advisor	Marina Kevanishvili	Deloitte Consulting Overseas Project
Graphic Designer	Gvantsa Pochkhua	Deloitte Consulting Overseas Project
Senior Financial Analyst	Gagik Hovhannisyanyan	Deloitte Consulting
Senior Financial Analyst	Neka Danelia	DTT Georgia
Financial Analyst	David Mujirishvili	Deloitte Consulting Overseas Project
Financial Analyst	Khatuna Iurchenko	Deloitte Consulting Overseas Project
Transmission Expert	Gurgen Hakobyan	Deloitte Consulting
Economic Analyst	Nick Sumbadze	Deloitte Consulting Overseas Project
Economic Analyst	Sopio Khujadze	DTT Georgia
Transmission Engineer	Ruben Abrahamyan	Deloitte Consulting
Management and Operation Lead	Julie Chachiashvili	Deloitte Consulting Overseas Project
Office Coordinator	Sophie Kalabegishvili	DTT Georgia
Financial Manager	Mariam Kevanishvili	DTT Georgia
Driver/Logistic Clerk	Giorgi Bochorishvili	Deloitte Consulting Overseas Project
Deloitte Consulting International Home Office Support, Arlington, USA		
Project Director	Richard Longstaff	Deloitte Consulting
Project Manager	Adrian Rouse	Deloitte Consulting
Contracts Manager	Reema Walia	Deloitte Consulting
HPEP Subcontractors		
TBSC		Georgia
WEG		Georgia
AYPEG		Georgia
CENN		Georgia
Green Alternative		Georgia
Green Movement of Georgia		Georgia
Energy Efficiency Center		Georgia
REC Caucasus		Georgia
DTT Georgia		Georgia
DTT Turkey		Turkey

5.0 PROGRAM LESSONS LEARNED: CHALLENGES AND SOLUTIONS

Lack of human and institutional capacity: The new electricity market design adopted by the GoG and implementation of the ETM will have broad, deep impact on GSE, GNERC, MoE, and the MO, requiring significant organizational change and human resource development within each institution. GNERC went through a major organizational design change in later 2013 and acquired 5 professionals from the HPEP project in order to boost their capabilities related to the competitive electricity market development.

Lack of Reforms Technical assistance projects often work closely, as did HIPP and HPEP, with the technical staff of the Ministry and the electricity sector entities. While the skills and knowledge of the technical staff grew, the decisions to implement reforms lagged. HPEP spent focused time with the decision-makers on a study tour to Europe, in Steering Committee meetings, and in a retreat. These focused events greatly increased the knowledge of decision-makers and helped move decisions forward.

Social impacts: The concern with opening any market is the exposure of high prices, especially during the initial transitional period when volumes are low and prices are unstable. Competitive prices will keep price increases down over time, but in the short term, customers could be exposed to some sudden changes in prices. The Government's role is to develop a social safety net to ensure that vulnerable electricity customers are still able to obtain the minimum electricity service during the early transitional periods.

Environmental impacts: No electricity infrastructure project is benign from an environmental perspective. Even run-of-river projects, often seen as environmentally friendly, must be designed, constructed and operated to mitigate as best as possible environmental impacts. This is especially true in relation to minimum river flows and impacts on residents between the intake structures and the power house. By using a cost benefit analysis for analyzing generating options, such as along a river basin, the environmental impacts can be identified and properly assessed. This will allow governments to identify the best development process for the basins and to identify the proper mitigation measures to be required from developers to ensure sustainable environment.

Development of energy sector leaders: The energy sector often have leaders that lack knowledge and capabilities required to move their organizations toward competitive markets, setting goals through corporate planning and getting the government-entities to performance-based operations. Selecting top graduates from the local universities and taking the time to develop their knowledge of these critical attributes provides valuable rewards. Under HIPP and HPEP, numerous interns while in their last year of university joined the projects, eventually becoming part of the staff learning key skills and strengthening their capabilities, and over time becoming part of the management of the sector entities.

6.0 PROGRAM ACTIVITIES

6.1 TASK 1. HUMAN AND INSTITUTIONAL CAPACITY DEVELOPMENT

Under Task 1, HPEP provided extensive capacity building to support the development of the Electricity Trading Mechanism (ETM) initiated under USAID HIPP. Counterpart institutions included the Energy Regulator (GNERC), the designated Market Operator (MO), the designated Transmission System Operator (TSO), Government of Georgia officials and key stakeholders. The capacity building topics covers competitive electricity market development and energy policy and strategy development and is intended to facilitate commencement of the implementation of the minimum reforms required to enable Georgian HPPs to sell power into Turkey and other regional markets.

Below: Photos of Market Operation Working Group Meeting, Tiflis Business Center



6.1.1 Trainings in Electricity Market Operation

In order to facilitate capacity building of market participants and implementation of GEMM 2015 and ETM, HPEP supported the MoE to establish the Market Operation Working Group. Its first meeting in December 2013 was attended by the representatives from the Ministry of Energy, USAID, Market Operator, Georgian State Electricity System, Energo-Pro Georgia, Kakheti Distribution System, Telasi, hydropower developers, and electricity generating and selling companies. Giorgi Chikovani, DCoP of HPEP, explained the transition to the competitive hourly market and Jake Delphia, CoP of HPEP, explained further steps to support market participants in implementing competitive electricity market mechanisms in Georgia as the market develops and becomes more competitive.

Based on feedback from the WG, HPEP established an Electricity Market Training Course curriculum. The course was designed to increase awareness and capacity of Georgian power market players, investors and developers in competitive electricity trading and market operation, current developments towards the new market model, and the best



Above: The photo of the Participants of HPEP's Electricity Market Training Course

practices and lessons learned from other European countries including Turkey. 16 training seminars took place between May 14 and July 3, 2014 and were regularly attended by a dozen participants, including representatives from Schulze Global Investments, KG Energy, Hydrolea, and EnergoPro Georgia. The training course participants were awarded USAID Certificates at the completion of the project.

6.1.2 Gender Issues in the Energy Sector

As a part of its capacity building program, HPEP made an internal presentation to demonstrate to its female staff members how to increase their knowledge about gender concepts and tools for including gender in the development strategy for the project, provide practical tools and approaches for mobilizing relevant stakeholders while recognizing the importance of female involvement in decision-making, and strengthening female confidence for a more effective service delivery.

HPEP developed an organizational assessment of three energy sector governmental organizations (Ministry of Energy, (MoE), Electricity System Commercial Operator (ESCO) and Georgian National Energy and Water Supply Regulatory Commission (GNERC)) found a high level of expressed commitment to increasing women's participation in their organization and promoting gender equality. In the Georgian State Electrosystem (GSE) participation rate of women is much lower than the average across the sector; women represent approximately 20% of the total employees in this organization. Although information on the percentage breakdown of the staff by gender exists, specific data on positions (managers, consultants, middle management, support staff) filled by women in the above energy sector governmental organizations were not available.

Based on the assessment results HPEP decided to emphasize women leaders' participation in its conference held jointly with the Georgian Technical University dedicated to Young Energy Leaders in Georgian Energy Sector. Along with stimulating youth - universities' and high schools' students - the strengthening the role of women leaders in the energy sector was the main objective of the Conference. Young female leaders, doctoral candidates and students from Georgian Technical University, Robakidze State University and Tbilisi public schools were invited with a balanced representation from both male and female presenters. It was emphasized that the energy sector offers new and exciting careers for technically-minded people notwithstanding their gender, and it is important to support young female students to enhance their capabilities through educational and training opportunities.

Below: Photos of HPEP's Conference - Young Energy Leaders in Georgian Energy Sector, GTU





6.1.3 Institutional Development and Change Management for TSO

HPEP and GSE organized several meetings to discuss the future roles and responsibilities of the TSO within the framework of a competitive electricity market. GSE developed a market structure including creation of a single TSO in Georgia to handle the balancing market, an MO to handle day ahead and intra-day markets and a process for the fair allocation of all low-priced government-owned HPPs as well as TPP production to all Georgian electricity off-takers.

HPEP provided close assistance to the management of GSE and its Grid Code Working Group to prepare for implementation of the ETM and GEMM 2015. Work included a series of discussions and presentations on the new bilateral contract model and month ahead



(MAP) and day ahead planning (DAP) with GSE as well as preparing MAP/DAP and partial pool software for GSE to adopt. The new software was presented to GSE, which was prepared by HPEP experts. The TSO development team also advised GSE on key performance indicators (KPIs) for transmission networks. The KPIs will help GSE monitor reliability standards such as SAIFI, SAIDI, ENS and CAIDI.

The HPEP TSO Development Team worked closely with the GSE Grid Code working group to draft the Georgian Transmission Grid Code, in compliance with the European Network of Transmission Operators for

Above: A photo of HPEP's Meeting at GSE

Electricity (“ENTSO-E”) requirements and standards. Chapters of the draft Grid Code were individually reviewed and agreed upon by Grid Code Working Group with the coordination of HPEP. Afterwards the grid code was submitted to the MoE for review and finally to GNERC for review and approval. The Scope of the Transmission Grid Code is to define procedures, rules, principles and standards for the development, management, access and utilization of transmission grid by electricity system participants and applicants and to regulate the relations among licensees and network users. The HPEP TSO Team, upon the request of the MoE and the GSE Grid Code Working Group, also developed the first version of the draft of Georgian Electricity Distribution Code.

HPEP also drafted the Georgian Transmission System Ten Year Network Development Plan (TGDP) template. The template reflects Georgian energy policy goals, the grid code, current transmission system expansion and rehabilitation plans, and consistency with ENTSO-E approach to transmission planning.

6.1.4 Institutional Development and Change Management for MO

Pursuant to the recent amendment to the Electricity and Gas Law, ESCO will become the electricity sector Market Operator and Georgia will move to a daily trading model in September 2015. This task requires significant capacity building and change management within ESCO. HPEP organized weekly workshops with ESCO and supported the formation of the Strategic Planning Working Group within ESCO. HPEP’s HICD advisor developed a Market Maturity Benchmarking Model for the future MO. HPEP developed and provided to the Working Group a plan for developing a corporate planning process within the MO and a revised organizational structure that included a market development team.

One of the main goals of GEMM 2015 is to develop a competitive electricity market in which generators and electricity off-takers bear the financial risk for shortage/surplus of electricity produced/consumed for every hour, so-called Hourly Balancing mechanism. Currently, an hourly balancing mechanism does not exist in Georgia and imbalances and settlements are carried out on monthly basis by ESCO.

As a first step toward hourly balancing, HPEP developed a Day Ahead Planning (DAP) process - an Excel-based model to assist market participants to improve their forecasting skills and more accurately schedule their next day generation and consumption levels. The forecast is based on historic hourly metering data to derive next day hourly consumption and generation using load shapes from historic typical days. The HPEP model was tested and



Above: Photos of HPEP and ESCO Meeting on hourly balancing mechanism, ESCO Office

accepted by ESCO and introduced to market participants. HPEP also developed amendments to the Market Rules making DAP a requirement for all market participants. HPEP and ESCO held a number of joint meetings with market participants (GIEC, Telasi, Energo-Pro) to introduce the MAP/DAP concept and partial pool software. The Partial Pool Bilateral Contract software was developed by HPEP as a web-based tool for use by all market participants and the market operator for trading electricity. With this program, market participants will be able to submit their MAP/DAP hourly schedules to the MO, plan and execute hourly sales contracts between Generation and Electricity Off-takers and monitor the differences between planned and actual deliveries and receipts by means of a smart phone or a tablet from any place within internet/mobile coverage.



Above: Photos of HPEP and ESCO Meeting on introduction of MAP/DAP Model, ESCO Office

6.1.5 Institutional Development and Change Management for GNERC

A new GNERC chairperson was appointed in September 2013. As one of her first priorities, HPEP was asked to help GNERC re-organize its staff by January 1, 2014. HPEP developed a new organizational design, developed detailed departmental and division level activity descriptions, grading system for the GNERC staff and created up to 100 drafts of job descriptions for four core departments (9 divisions) of GNERC. HPEP also elaborated a draft charter of the GNERC and provided English and Georgian versions of the all above mentioned documents to the GNERC leadership. Based on the above, GNERC's leadership solicited for new experts based on the job descriptions developed under HPEP. With recent hiring's, GNERC is now a far more capable energy regulator.

The new organizational design of GNERC will remove the burden of working on numerous and identical consumer complaints from the sectorial departments of the GNERC and will enhance their tasks of monitoring performance of regulated companies. The new design confers on GNERC the function of conducting market monitoring and analysis of Georgian electricity and natural gas sectors. In addition, the new organizational design of the GNERC created the Financial Analysis Division under the Tariff Department, thus enabling GNERC to track financial situation of tariff regulated companies on a regular basis, so that for tariff cases GNERC will not have to track all at once financial data of companies for previous 5-10 years.

In addition to the above mentioned activity, HPEP assisted GNERC in its long term capacity building. A capacity development plan was presented to the GNERC leadership and GNERC created a Strategic Development Working Group (SDWG) in February 2014. GNERC



Above: Photos of HPEP and GNERC Meeting on new organizational design and creation of Financial Division, GNERC Office

provided the SDWG with presentations on strategic planning and examples of mission and vision statements of other countries. The SDWG, with the support of HPEP, elaborated mission and vision statements and goals for GNERC, and, based on the table and assessments completed previously by HPEP, started development of a pro-forma Regulator Maturity Model Benchmarking Tool. The Strategic Planning Working Group will be the foundation for orchestrating the transformational steps including; developing the GNERC vision, mission and values, identifying the goals and key performance indicators, modifying the organizational structure and individual roles, and utilizing the CYPRESS framework to continue the performance improvement efforts needed to achieve GEMM 2015.

6.1.6 Support MoE in Development of the Electricity Trade Mechanism (ETM)

HPEP continued the support formerly provided by HIPP to the Ministry of Energy. MoE led regular Steering Committee meetings and adopted six-month HPEP-MOE cooperation action plans helped guide the country's energy sector institutions along the critical path for implementation of GEMM 2015 goals. Five electricity market working groups (MO support, TSO support, and GNERC support, Legal, Energy Policy and Planning) actively guided the ETM implementation. HPEP's team members were deeply involved in regular meetings of

Working Groups (WGs), producing joint deliverables such as grid code chapters and balancing / settlement rules, DAP models, amendments to the legal acts, etc. and forming effective working relationships with all counterparties.

HPEP's HICD team reviewed the responsibilities required for the Ministry under the EU Energy Acquis and developed a table of responsibilities. Based on that table, HPEP's HICD advisor developed a general structure of activities within the Ministry (strategic planning, implementing, monitoring) and provided this proposed structure of activities to the Ministry for their review and comment.



Above: A photo of HPEP's Steering Committee Meeting at MoE

6.1.7 Cross Border Electricity Trading Conference

In July, 2014 HPEP organized the Third Cross Border Electricity Trading Conference, (the preceding two were held by USAID HIPP, in November 2012 and May 2013.) As with the 1st and the 2nd Conferences, the 3rd Cross-Border Electricity Conference was also well attended by HPP developers and regional electricity off-takers and directly influenced Georgia's energy reform agenda.

The Conference was opened by Mariam Valishvili, Deputy Minister of Energy, Steve Haykin, Mission Director for the USAID in Georgia and Sukru Bogut, Senior Energy Infrastructure Advisor, USAID.



Above: Photos from HPEP's 3rd Cross Border Conference

The 3rd Cross Border Electricity Trading Conference was attended by high level representatives of the Georgian and international energy stakeholders (MoE, GSE, ESCO, GNERC, MoE, EBRD, WB, EMRA, TEIAS, etc.), Georgian Co-Investment Fund and Partnership Fund, electricity sellers from Georgian power market including foreign direct investors, like Tatapower, Anadolu Group, Gunvor Group, Clean Energy, Akenerji and Trans Electrica Trading, and electricity off takers (buyers) from Europe, Asia, Turkey, as well as Georgia. More than 160 attendees represented 70 different organizations were invited by USAID/HPEP.



Above: A photo from HPEP's 3rd Cross Border Conference

HPEP's 3rd Cross Border Electricity Trading Conference participants acknowledged high importance of implementing GEMM 2015 as Turkey continues its rapid move toward full

energy market liberalization and harmonization with the European Union, and therefore Georgia should also adopt many legislative and market-based reforms to keep pace with the regional developments and enable electricity producers benefit from trading in the Turkish and European electricity markets where electricity demand is quickly outstripping their ability to supply.

Conference participants highly appreciated USAID/HPEP's efforts to build capacity of the energy stakeholders for promoting the development of competitive electricity market in Georgia and the whole region. Based on the feedback of the Conference participants, the organization and the scope of the conference were excellent.

Mr. Shuji Akiyoshi from Mitsui & Co, a Japanese trading company based in Tokyo expressed his appreciation for organizing the 3rd Cross Border Electricity Trading Conference: *"Let us present our great appreciation about the program you presented and about your organization of this valuable conference which will help indeed a lot for proceeding business in Georgia"*.

Attendance of media was very broad and active at the Conference; interviews were taken from Steve Haykin, Mission Director for the USAID in Georgia, Mariam Valishvili, Deputy Minister of Energy, Ilia Eloshvili, Deputy Minister of Energy which announced to Georgian Press: *"Main issues to be discussed at this Conference, which is being held under the aegis of the USAID and GoG, are establishment of an electricity market model and harmonization of electricity trading with Turkey. In medium term we must achieve creation of a free, unregulated market which will enable investors to set reasonable and fair prices on their production."*

Georgian television channels TV 3 and Maestro reported on the Conference and its importance on 10th of July: The Press Release was published on the internet sites of all news agencies, and the MoE Official site.



Above: A photo of USAID Mission Director, S. Haykin giving an interview to Georgian Press during the 3rd Cross Border Conference

6.1.8 Stakeholder Meetings

HPEP aimed to promote dialogue within the sector by engaging government entities, donors, IFIs and private sector representatives to facilitate private sector-led development of Georgia's clean energy sector. To facilitate this process, HPEP worked with USAID to drive this process and create a common voice for the donor and IFI community. The HPEP Project Launch event played a significant role in this regard. The representatives of the Ministry of



Above: Photos from HPEP's Launch Event, Tbilisi Marriot Hotel

Energy and USAID, as well as other Georgian and international energy stakeholders, attended the event and actively communicated with each other on mutual plans and prospects of cooperation in the future development of Georgian power market. Presentation on HPEP's tasks and objectives was made at the event. The launch of the national energy policy and strategy development by the Ministry of Energy with the assistance of USAID HPEP was publicly announced. Media was invited to highlight the Project Launch. All main Georgian TV Channels attended the event and covered it broadly and very positively in their news programs.

HPEP organized the first Stakeholder Meeting with participation of USAID; the meeting took place at HPEP office where HPEP achievements were shared with the KfW, IFC, World Bank, ADB and EU representatives, such as:

- Amendments to Electricity and Natural Gas Law (prepared with the support of HPEP) adopted by Parliament on December 27, 2013
- USoA (regulatory accounting) to be fully implemented by GNERC
- Finalization of the Transmission Grid Code
- Draft agreement to be discussed with EMRA at the end of January
- ESCO accepting of day ahead planning (DAP) proposed by HPEP and requested HPEP to push ahead on development of modifications to the electricity Market Rules to incorporate the day ahead planning mechanism
- HPEP developing a near-term proposal for re-organizing GNERC that will allow the energy regulator to prepare itself to take on its new powers assigned to it under new amendments to the E&G Law
- HPEP reviewing draft Transmission and Dispatch Agreement provided by the company on the basis of an investor (Urban Energy Group) developer of Paravani HPP

The second Stakeholder Meeting with IFIs and other interested parties was held in the summer 2014 to summarize HPEP results and progress towards GEMM 2015 implementation, key issues of the Georgian Energy Strategy Whitepaper were presented and discussed. Stakeholders outlined further steps for cooperation with USAID and GoG to achieve the goal.



Above: Photos from Stakeholder Meetings held at HPEP Office

6.1.9 Study Tour

A major component of HPEP under Task One was organizing a Study Tour to Europe for Georgian energy decision makers on March 30 - April 5, 2014. The Study Tour participants visited the Slovenian Power Exchange and ELES-TSO in Ljubljana, Statkraft in Dusseldorf and the Austrian Power Grid in Vienna. Leaders of the main stakeholders of the Georgian electricity sector participated including the following:

- Chairman of GNERC, I. Milorava,
- Deputy Minister of Energy, I. Khmaladze,
- Director of GSE, S. Zumburidze, and
- Director of ESCO/MO, V. Ambokadze

The Study Tour participants were most interested in electricity trading issues relevant to the Georgian electricity sector, e.g. trading with Turkey and market coupling. They raised questions concerning the issue of allocating responsibilities between the MO and TSO regarding balancing, price formation, market monitoring and regulation, and compliance with the EU requirements. It was concluded that opening of electricity markets, competitiveness and regional trading are good for consumers, economy and social welfare. In the long run increased competitiveness will put downward pressure on the price of electricity. The main message of the Study Tour was that Georgia needs to develop its market and open room for competition. *Below are the photos from Study Tour in Europe:*



Above: Workshops at MO and PX in Slovenia



Above: Presentation of Slovenian TSO



Above: Visit at Austrian TSO



Above: Workshops at a private electricity trading company, Statkraft in Germany



7.0 TASK 2 – IMPLEMENTATION OF THE RULES, REGULATIONS, PROCEDURES AND PROCESS DEVELOPMENT

7.1 SUBTASK 2-A. IMPLEMENTATION OF GEMM 2015

Amendments to the Law of Georgia on “Electricity and Natural Gas” (Draft E&G Law) were prepared and submitted to Ministries.

Draft amendments to the E&G Law were completed by the MoE with support from HPEP experts and the amended law was adopted by the Parliament in December 2013. The issues covered by the Draft E&G Law are:

- Transit Regulation
- Regulation for New Power Transmission Line
- Introduction of Market Operator
- Strengthening GNERC
- Introduction of Uniform System of Accounting
- Other issues related to Transmission and Dispatch Service
- Daily Trading

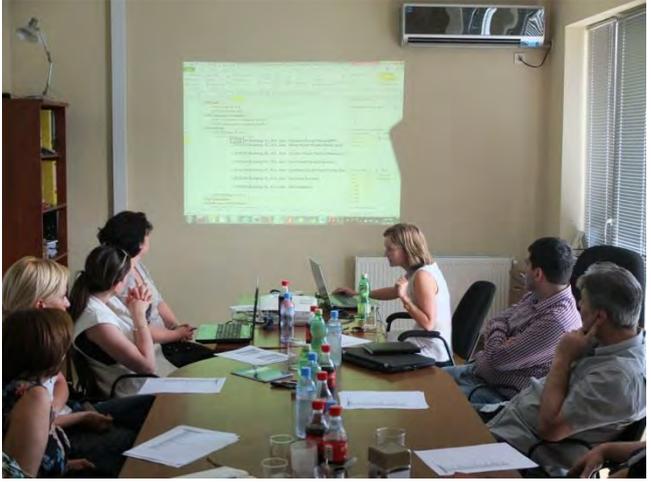
These amendments provided more responsibilities to the energy regulator and established some key aspects of the competitive electricity market.

Development of the Uniform System of Accounts (USOA)

The electricity sector regulatory framework of Georgia lacked transparency in rate setting process; poor record on investment into the aging distribution networks; lack of incentive to invest into new generation facilities with too low a tariff for generation production aimed for sales in the local market; no incentives in rates for better utility performance, and several other poor regulatory aspects.

HPEP provided guidance to GNERC in reforming the regulatory framework including development of the USoA for the electricity sector of Georgia. Assistance included development of a regulatory chart of accounts for the electricity sector, instructions to the chart of accounts, licensee reporting forms and instructions to the reporting forms and capacity building of GNERC and the electricity sector licensees.

As the new Chair of the GNERC was appointed in the middle of September 2013, HPEP introduced to her, as well as to other members of the Commission, the purpose and concept of Uniform System of Accounts. GNERC accepted HPEP’s recommendation to adopt and implement the USOA in the energy sector. The work plan for this activity was agreed between the GNERC and HPEP at the end of October. Based on the work plan, HPEP held several meetings and workshops with the GNERC and electricity sector licensees, including transmission, distribution, generation companies and the dispatch licensees. As a result, HPEP developed the initial draft CoA for electricity sector licensees. Also, GNERC accepted HPEP’s comments on the content of the draft Article 46 (USoA) of the E&G Law and discussed those with the MOE. Photos from HPEP Trainings provided to electricity sector licensees on different topics of USoA are given below.



Above: Photos of HPEP Trainings in USoA

Support on coordination of mutual activities between GNERC and EMRA

HPEP and GNERC prepared a list of issues to be discussed and solved in cooperation with EMRA for promoting cross border electricity trading, in particular harmonization of power market regulations to allow competitive cross border trading between Georgia and Turkey and GNERC's adoption of the model electricity supply agreement (ESA). The Joint Working Group was created, consisting of GNERC Chair and the Head of GNERC Legal Department, also, representatives of ESCO, GSE and MOE. HPEP prepared a presentation for GNERC on the issues to be discussed with EMRA and supported GNERC leadership in preparation of discussions about the cross-border trading issues during the NARUC Partnership Activity which was held in Tbilisi on January 27-31, 2014 with the participation of EMRA and TEIAS representatives. The terms of the model ESA were agreed by GNERC and EMRA.



Above: coordinating meeting between EMRA, GNERC, USAID and HPEP representatives

Transmission Grid Code

All chapters of the Transmission Grid Code were reviewed and approved by Grid Code Working Group participated by leading technical staff from MoE, GNERC, ESCO, GSE and HPEP. The Scope of the Transmission Grid Code is to define procedures, rules, principles and standards for the development, management, access and utilization of transmission grid by electricity system participants and applicants and to regulate the relations among licensees and network users. Transmission Grid Code applies to applicants and electricity system participants, namely:

- a) Dispatch licensee;
- b) Transmission licensees;
- c) Distribution licensees;
- d) Electricity generators;
- e) Direct customers; and,
- f) Other customers which are not direct customers but considering their parameters and location fall within the regulation of Transmission Grid Code.

Electricity Supply Agreement (ESA) Was Drafted

The ESA Template was drafted by HPEP's legal advisor. The ESA will be used by HPPs located in Georgia and electricity off-takers based in Turkey. The key features of ESA template are:

- Consistency with laws of each country;
- Approved by the Regulators of each country;
- Ten year (or more) term validity necessary for HPP investor financing;
- Agreed monthly volume and capacity of electricity to be delivered and received under the ESA; Parties can adjust monthly volumes up or down by ten percent;
- Possibility of day-ahead and intra-day scheduling; and,
- Based on 2007 EFET General Agreement adopted now in Turkey.

ESA is a contract based on take or pay principle: Seller shall deliver and Buyer shall accept the electricity. Seller is liable for generation and transmission failure in Georgia; and Buyer is liable for transmission failure in Turkey. Parties are excused from liability for failure to deliver or accept under:

- Standard Force Majeure circumstances (Civil Code of Georgia);
- Emergency Situation declared in Georgia or neighboring country;

Failure to deliver or accept in absence of Force Majeure or Emergency Situation, obliges non-performing party to compensate other party for any losses incurred buying non-delivered or selling non-accepted electricity from alternate market participants.

Report on Regulatory Independence was drafted

A report on improving the regulatory independence of the energy regulator in Georgia was prepared by HPEP with several recommendations for policy and institutional changes. Regulation provides a modern and efficient interface between the public interest, the interests of consumers, the interests of those providing regulated services under monopolistic conditions and the interests of those using the monopolistic infrastructure.

Summary of Law of Georgia on Independent National Regulatory Authorities

HPEP completed a report on the Law of Georgia on Independent National Regulatory Authorities (Law on Regulatory Authorities). The law establishes the independence of the regulatory authorities operating in Georgia from political pressure of any kind, from improper influence and illegal interference of state authorities or other persons, as well as from any acts as may infringe on their independence; the authority to effect perfect regulation of any specific field; the responsibility to ensure the transparency and reliability of decision-making process; the main principles of the creation, activities and organization of independent regulatory authorities. According to the report, as GENRC's responsibilities are increased in compliance with the EU Third Energy Package, this Law will require modifications.

Gas Network Access Summary

The legal team of HPEP developed a summary of the legal framework in the natural gas market to support the proposed changes to the natural gas sector as part of HPEP's work in supporting the develop of a national energy strategy.

The natural gas market regulations control relations among natural gas suppliers, transportation and distribution licensees and direct customers. Bilateral and multilateral agreements are concluded among parties involved in natural gas sale and purchase or transportation procedures.

In the natural gas market, the licenses are issued for the gas transportation and distribution. Natural gas supply and transportation system connection procedures are regulated by the Natural Gas Market Rules. According to the Law of Georgia on Electricity and Natural Gas, the MoE is authorized to approve natural gas balance and the Natural Gas Market Rules.

The report highlighted the lack of regulations in the natural gas sector of Georgia compared to the electricity sector and provides areas to be strengthened.

7.2 SUBTASK 2-B. STRATEGIC ENERGY PLANNING

To support the MOE and other stakeholders in strategic energy planning, a number of challenges need to be addressed including a lack of accurate national energy statistics and a viable action plan for data collection; and a lack of compliant energy balance since 2001. HPEP developed a process that is data-driven and model-based to encourage analysis, consensus building and decision-making.

HPEP's work plan was divided into three subtasks: Strategy Support; Energy Planning Support; and Development of a Cost-Benefit Analysis Model of Watershed-based Hydropower Development with the inclusion of Environmental and Social Impact Analysis.

7.2.1 Subtask 2-B-1 Strategy Support

HPEP drafted an Energy Policy White Paper that outlines the vision of the GoG for energy development of Georgia and was based on the GoG's intent to meet the country's long-term needs for secure, clean and affordable energy through competitive markets that are operating in the best long-term interests of consumers and the nation. The Whitepaper was used by the Ministry of Energy in multiple stakeholder reviews. Taking into consideration the stakeholder reviews of the Energy Policy Whitepaper, HPEP formulated a National Energy Strategy Whitepaper which includes:

- Long-term vision of the sector that mirrors the energy policy
- Short and mid-term energy strategic priorities to meet the long-term vision
- A 3-year implementation plan that focuses on the near-term activities

HPEP's Energy Planning Team met with several energy sector experts that provided guidance on the priorities and strategies, especially those activities to be included in the 3-year implementation plan. HPEP also reviewed the draft protocol to be adopted between the European Commission and the GoG as part of the Accession Agreement to the Energy Community. The protocol lays out the legal and regulatory framework that must be developed for the energy sector that covers several pillars including:

- Energy security,
- Energy efficiency,
- Renewable energy sources,
- Environment, and
- Consumer protection.

All of the legislative framework required in the EU's Third Energy Package except for some exceptions related to long-term gas purchase agreements and transit of natural gas through Georgia are incorporated into the Energy Strategy Whitepaper.

HPEP presented the Energy Strategy Whitepaper to the MoE for further review and development into the National Energy Strategy document by the Working Group consisting of the MoE and HPEP representatives.

7.2.2 Subtask 2-B-2 Energy Planning Support

In order to support the development of the energy policy and strategy, HPEP researched all forms of energy supply and demand through interviews with energy sector experts and surveys in cooperation with the MoE. The HPEP Energy Planning team reviewed the draft Socio-Economic Development Strategy (SEDS) for Georgia and developed various energy development scenario models.

To support development of a robust Georgia MARKAL model, HPEP conducted a tender

for a survey to collect energy statistical data for households on a national level, evaluated bidders and subcontracted the winner. The purpose of the survey was to provide the household energy consumption data needed for comprehensive Georgia MARKAL model simulations.

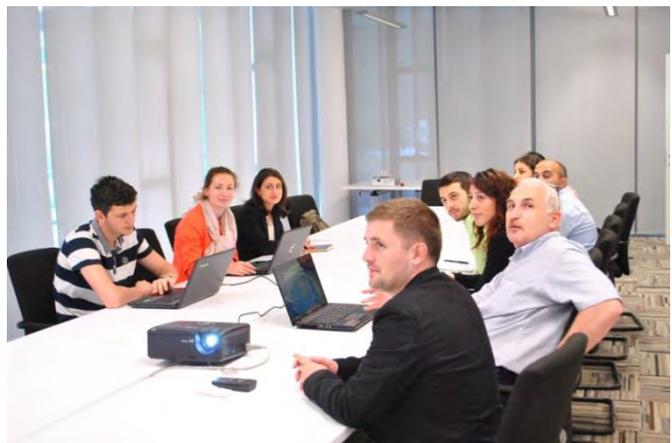
The Team coordinated Georgia MARKAL model trainings for the members of the Analytical Department of the MoE. Furthermore, HPEP, through its subcontractor, WEG, conducted training curriculum aimed to build capacity of Analytical Department to construct, run and interpret various energy sector development scenarios using the Georgia MARKAL model.

The Georgia MARKAL model was taken to the next stage of development by fine tuning the input structures, verifying input data and assumptions and developing a realistic baseline scenario. The work in this direction was carried out by both HPEP and the MoE's AD teams. *The photos from MARKAL Trainings provided under HPEP to MoE's Analytical Department are below:*



HPEP's training in MARKAL Georgia model operation was continued as "learning by doing" activity. The AD was divided into analytical and modeling groups and respective tasks were developed for each. The modeling group mostly concentrated on analysis and improvement of more technical issues while the analytical group analyzed the model results, collecting and improving the data and related the model scenarios to real life policy issues.

Long-term scenarios considered included development of a baseline scenario to serve as a basis for analyzing the results of various policies. Two other scenarios were developed - Renewable Energy Development scenario and Energy Efficiency scenario. Alternative ways of making RE and EE targets scenarios more complex were compared. Namely, penetration rate for certain technologies was changed, different ways of setting energy efficient target was compared, and approaches of considering energy efficiency barriers in the model were discussed. A substantial part of training was devoted to familiarizing the AD staff with energy technology and energy economy concepts. The presentations and discussions were conducted on thermal and HPP technologies, other RE technologies, dynamics of supply and demand, leveled cost of energy, system reserve and risk analysis and demand forecasting techniques. During the presentations, thematic tasks were given to AD staff for analyzing Georgian context. Also the current issues (such as gas storage, HPP development, other RES development, reliability and safety of power system) in Georgian energy sector were identified and discussed during the seminars. Training participants were awarded USAID Certificates in MARKAL Model Operation.



HPEP subcontractor AYPEG was responsible to develop an energy end-use survey covering residential consumers throughout Georgia. The output of the survey included: 1) a detailed

report highlighting the characteristics of energy use in the residential sector, and 2) input data to the MARKAL Georgia strategic planning model.

Over the course of the Project, AYPEG:

- Developed English, Georgian and Russian language questionnaires
- Conducted random sampling in order to choose respondents across Georgia
- Conducted training session for interviews
- Conducted face-to-face interviews across Georgia (1288 interviews)
- Conducted interviewers checking
- Conducted data entry and cleaning
- Finalizing Dataset (ongoing)
- Submitted the Final Survey Report

The results of the study were quite enlightening such as the amount of annual wood fuel used in residential homes for heating, cooling and hot water exceeded the amount of annual forest growth in Georgia.

Oil Industry Overview Report

HPEP also prepared an overview of the legal framework of the oil industry. Two primary laws regulate the oil sector in Georgia. The report discussed all relevant legislation and roles of the MoE and State Agency for Oil and Gas, including licensing and contracting of investors to explore and exploit oil and gas resources. Oil and gas resources existing in the depths of the territory of Georgia are the state ownership. Georgia obtains the exclusive and sovereign right on prospecting and exploitation of oil and gas resources on its land and continental shelf. The ownership on produced oil and gas is determined in accordance with the contract. This report was used for the background section of the national energy strategy.

7.2.3 Subtask 2-B-3 Development of a Cost-Benefit Analysis Model of Watershed - based Hydropower Development with the inclusion of Environmental and Social Impact Analysis

The Energy Policy and Strategy Team selected five NGO's through a tender procedure to form a Working Group that supported the CBA model development. In addition, an assortment of available CBA models for watershed area in different countries was done and the best approach applicable to the task was identified. TBSC, a subcontractor to Deloitte Consulting, was selected to develop the Cost Benefit Analysis (CBA) model with extensive support from the CBA working group composed of five NGOs and GoG officials.

The CBA Model assessed several issues including provisional, regulating, cultural and supporting services of the Enguri watershed area. Social and economic issues were also considered by the CBA Model. A framework CBA Model was developed by NGOs and TBSC in a series of Working Group meetings. The model describes the process how to do a comprehensive watershed-wide cost and benefit analysis. HPEP together with TBSC and NGOs followed the steps laid down in the framework model, including selecting thematic areas, looking for relevant data types, going through data-mining process and analyzing data. Based on the thematic areas identified before, the group screened the datasets and developed the list of the areas to monetize using the TEEB (The Economics of Ecosystems and Biodiversity) approach.

As a next step, different pricing methodologies were discussed among the working group and the most suitable ones were chosen or adapted to the particular needs. Finally mini-models were created for each of the sub-thematic areas and have been distributed among NGOs for filling out according to their competencies.

The CBA model has been demonstrated for a combination of three HPPs: Pari, Enguri 6 and Mulkhura HPPs. On the cost side, seven thematic areas were considered (food, raw materials, resettlement, extreme events, and tourism, species and construction costs). On the benefit side, VOLL was analyzed.



Above: Photos from different CBA Working Group meetings held at HPEP Office

All the results from mini-models were compiled and combined in a single Excel spreadsheet model. The model and the final results were discussed among the working group members. All the participants recognized the importance of the initiation of the CBA process for the country. The NGO's acknowledged that because of the data gaps the Model needs further development. The WG came up with key findings and recommendations on the policy issues from the CBA exercise which includes uptake of the CBA Model by the Ministry of Environment and Natural Resources of Georgia and making it an integral part of the Environmental Impact Assessment (EIA).

One of the main results of the CBA process conducted by USAID HPEP was that it clearly demonstrated the need for a Strategic Environmental Assessment (SEA) of the energy sector. The WG also recommended applying sustainable environmental management practices while planning and construction of new development projects including HPPs.

On August 12, 2014, HPEP, together with the NGO's working on the Model, presented CBA Model to the MoE, Ministry of Environment and Natural Protection, Ministry of Economy and Sustainable Development, Ministry of Infrastructure Development, World Bank and USAID at USAID Georgia's Office.

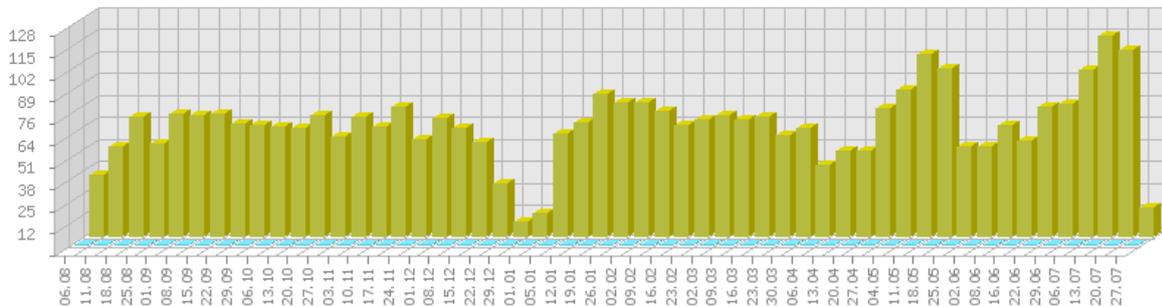
8.0 TASK 3: SUPPORT FOR INVESTOR OUTREACH

USAID HPEP is continuing to provide support services to MOE in driving the investor outreach process for HPPs identified under HIPP (HPEP’s predecessor project). The high level of interest from potential developers in Georgian HPP opportunities continued throughout HPEP. Potential developers remain impressed with the high potential plant factors of Georgian HPPs; continued to look to Turkey for trading opportunities and increasingly toward Georgia’s domestic market as the summer load increases more than 5% per year.

Awareness of the significant impediments to investment commitment appears to be growing; however HPEP activities and positive developments towards GEMM 2015 keep investor’s interest active. HPEP maintained and updated www.hydropower.ge, the investor portal developed by USAID HIPP in accordance with the HPEP goals and developments, including the electronic GEMM 2015 becoming publicly available.

Compatibility and high aptitude of Hydropower.ge have been proved by statistics taken from official statistics portal Tops.ge. Total number of unique site-users resisted on tops.ge by August 01, 2014, was 6392.

Tops.ge Graph given below, shows total number of unique users per week during the last year:



Below: a snapshot of www.hydropower.ge home page



HPEP held one-on-one several consultations with the following investors to discuss run of river HPP projects, enabling regulations and trading opportunities. Below are the photos of HPEP's meetings with various investors:

- Bank of Georgia
- BFL
- BG Minerals Limited
- Dans Energy
- Development Finance International
- Energio Aragvi
- East Gate Energy
- Eastern Power Corporation
- Gazenergokomplekt
- GEN-I
- Geo Hydro
- GeoEnergy
- GHP
- Georgian Co-investment Fund
- Georgian Urban Energy
- KOSEP
- Herbin Electric International
- Herman Consulting
- Hydrolea
- IFC (2)
- KG Energy
- Mertech
- MIGA
- NuPlanet (Pty) Ltd
- Silk Road Group
- Schulze Global Investments
- Super Nova Fund
- Synergy
- Vap-Georgia
- Vitol
- WildFig Capital (Pty) Ltd



HIPP and HPEP projects resulted in the MoE receiving MOUs or other commitments on generating plants studied by HIPP. In total, including Lower Svaneti Cascade, HIPP projects under MOU totaling 755 MW.

Several other hydropower plants were able to receive financing for their projects under the government or corporate guarantees. (Lower and Upper Svaneti Cascades, Akhmeta, Aragvi, Bakhvi 3, Nabeghlavi, and Paravani HPPs).

175 MW Shuakhevi HPP and 10 MW Skhalta HPP (185 MW in total) were the first two projects in Georgia with project financing (financed by the IFC, ADB and EBRD), though they did have limited recourse guarantee. They are seen as the precursor of all future HPP projects that will depend upon project financing and not guarantees from the GoG. HPEP provided significant support to this project, helping both the owners and the GoG in agreeing upon the arrangements for electricity trading. As Tom Lubeck from the IFC stated to USAID in May 2014, *“Thanks for your support, but also for all the help over the years from [the HIPP & HPEP’s] team in the projects on the ground..... I hope that this project will prove a 'game changer' and attract other players to the market.”*

9.0 RESULTS AND IMPACT

9.1 MONITORING AND EVALUATION BY KEY INDICATORS

Key Indicator / Outputs	Task Linkage	Source of Data	Frequency of Collection	Life of the Project Target	Life of the Project Result
MW hours of electricity sold cross-border in the competitive markets	Cross-cutting	GSE records	Monthly	1000	178 900 MWHs (through July 2014)
Number of people receiving training in energy related business management systems	Task 1	Capacity Building participant lists	Annual	50	250 (disaggregated by male and female (23.2% female and 76.8% male)
Number of people receiving training in energy related policy and regulatory practices	Task 1	Capacity Building participant lists	Annual	100	308 (disaggregated by male and female (28.2% female and 71.8% male)
Number of people receiving training in natural resources management and/or biodiversity conservation	Task 1	Capacity Building participant lists	Annual	20	118 (disaggregated by male and female (37.3% female and 72.7% male)
2-day conference of with at least 70 participants	Task 3	Event Report	Annual	1	One 2 day conference with 160 participants held on July 10-11, 2014
Coordination meetings with Donors and IFIs	Task 3	Project Records	Semi-annual	2	2 stakeholder meetings and more than 10 one on one meetings
HPEP Launching Event	Task 3	Event Report	Annual	1	Launching event on November 14, 2013
Study tour to Turkey and Europe	Task 1	Study Tour Report	Annual	1	1 study tour to Slovenia Austria and Germany from 30 March to 5 April, 2014
Six month activity plans agreed upon by MoE with results and progress identified	Task 2	MoE emails, project confirmation	Semi-annual	2	2

Six month activity plans agreed upon by GNERC with results and progress identified	Task 2	GNERC Records, Project Confirmation	Semi-annual	2	2
Special studies or assessments	Task 1 Task 2 Task 3	Emails from and to COR	Annual		Total Requests - 108 (Disaggregated by Project Tasks: Task 1- 22% Task 2 - 56% Task 3 - 22%)
Number of institutions/entities with improved capacity to address competitive electricity market issues	Task 1	Capacity Building Participant Lists	Annual	At least 5 institutions/entities	GNERC, ESCO, GSE, MoE, EnergoPro, WEG, KGenenergy, Hydrolea, Schulze Global Investments, measured by shared HPEP goals and subsequent achievement of those goals
Total public and private dollars leveraged USAID/HPEP for energy infrastructure projects	Cross-cutting	MoE records, project confirmation, media	Annual	200 mln	241 mln

9.2 USAID/HPEP LEVERAGING RATIOS

Activity	Estimated Share of USAID Assistance	USAID/HIPP Budget	Leveraged Amounts	Leveraged Amount for each \$1 of USAID Assistance
GEMM 2015 development	75%	\$2,222,250	\$241 million	\$108.45
Energy Planning	20%	\$592,600	Not applicable	n/a
Cross cutting	5%	\$148, 150	Not applicable	n/a
Total	100%	\$2.963,000		

ANNEX 1 LIST OF DELIVERABLES PRESENTED TO USAID OVER THE COURSE OF THE PROGRAM

HPEP List of Deliverables			
Title	Date	Document ID on DEC USAID	Record URL
Task 1 Human and Institutional Capacity Development			
Institutional Development and Management Change for TSO			
Georgia Ten Year Transmission Development Plan	April 15, 2014	PA-00J-TM6	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzQ3Nzkz
Introduction to the Balancing Market and Balancing Group Model	June 18, 2014	PA-00J-ZZK	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMjIw
Institutional Development and Management Change for MO			
Initial Steps to Hourly Based Electricity Market in Georgia	October, 2013	PA-00J-NK8	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzQzODQ3
Presentation on Bi-lateral Contracts (Hourly and Daily)	December, 2014	PA-00K-1TD	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxODg3
Report on Proposal for Reorganization of ESCO	February, 2014	PA-00J-ZW8	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMTU1
Presentation on CYPRESS	October 9, 2014	PA-00J-TMD	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzQ3Nzk5
Day Ahead Planning	January 31, 2014	PA-00J-WCV	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzQ5MTg0
Presentation on Aspects of a PX Node at Georgia/Turkey Border	October, 2013	PA-00J-NKB	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzQzODQ5
Market Players on Transition to Hourly Market	February, 2014	PA-00J-ZZQ	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMjI0
Hourly Planning for Market Players Based on EnergoPro Data	April 24, 2014	PA-00J-ZWD	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMTU5
Trade Opportunities between Georgia and Turkey	June 2, 2014	PA-00J-WCW	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzQ5MTg1
Turkish Power Market Annual Report 2012	July, 2014	PA-00J-ZVW	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMTQ1
Turkish Power Market Annual Report 2013	July, 2014	PA-00J-ZVX	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMTQ2
Institutional Development and Management Change for GNERC			
Report on Proposal for Reorganization of GNERC	April 16, 2014	PA-00J-ZWK	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMTY0
Presentation on Accounting Policy of PPE	May 2, 2014	PA-00J-TMC	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzQ3Nzk4
Presentation on Accounting Guidelines of PPE	July 29, 2014	PA-00K-163	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMzc0
USoA Training Summery Report with Presentations	August 4, 2014	PA-00J-ZZR	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWWQ tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlID=MzUxMjI1

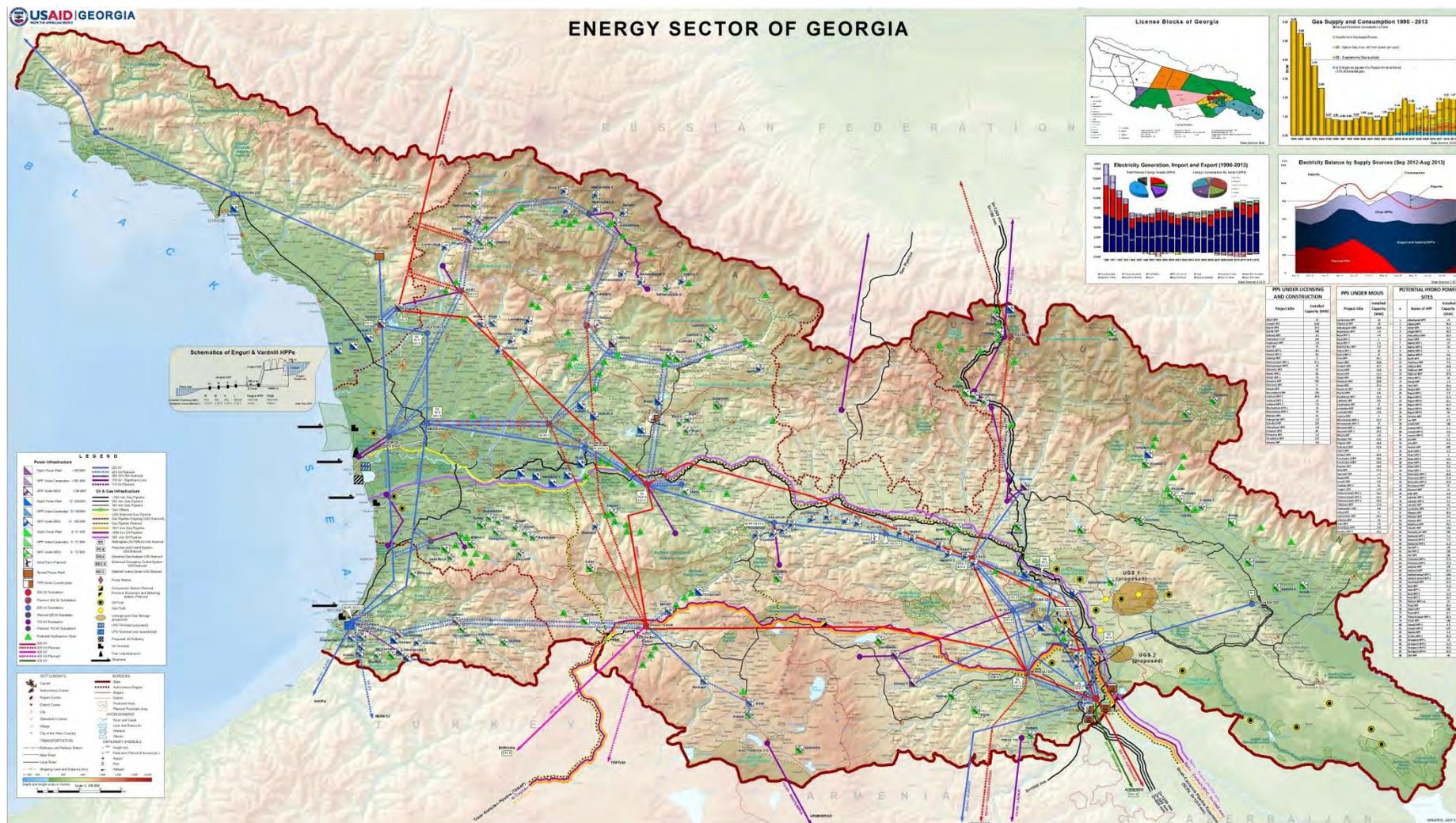
A Study of the Value of Lost Load (VOLL) for Georgia	May, 2014	PA-00J-WCZ	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzQ5MTg3
Support MoE in Development ETM			
Presentation at HPEP 's Steering Committee at MoE on ETM development and Energy Policy and Strategy, CBA	April, 2014	PA-00J-ZZS	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjI2
Presentation on Energy Strategy of Georgia 2015-2030 made at Market Model Consensus Meeting	June, 2014	PA-00J-ZZT	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjI3
Presentation on Merchant Power Plants made at Market Model Consensus Meeting	June, 2014	PA-00J-ZZW	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjI5
Presentation on Proposed Market Model in Georgia made at Market Model Consensus Retreat	June, 2014	PA-00J-ZZV	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjI4
Presentation at MoE on Transition to hourly Balancing Market	August 7, 2014	PA-00K-14X	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMzQy
Presentation at MoE on Supplier of Last Resort (SOLR) and Customer Switching Rules	August 7, 2014	PA-00K-14Z	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMzQz
HPEP's Summery Presentation to MoE on Georgia Energy Sector Developments, issues and Further Assistance	August 13, 2014	PA-00K-172	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxNDAx
Cross Border Electricity Trading Conference			
3 rd Cross-Border Electricity Trading Conference Event Report	June, 2014	PA-00J-ZZD	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjE1
Stakeholder Meetings			
Presentation at Stakeholder Meeting on Merchant Plants Versus State Guarantees	July, 2014	PA-00J-ZZW	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjI5
Presentation at Stakeholder Meeting on Strategy	July, 2014	PA-00J-ZZT	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjI3
Presentation at Stakeholder Meeting on ETM development	April, 2014	PA-00J-ZZS	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjI2
Market Operation Working Group Meeting Event Report	March, 2014	PA-00J-ZZZ	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjMx
Market Participants' Electricity Training Course Report	April, 2014	PA-00K-111	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjMy
Study Tour			
Study Tour in Europe - Trip Report	April, 2014	PA-00K-112	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjMz
Task 2 Implementation of Rules, Regulation, Procedures and Process Development			
Subtask 2-A. Implementation of GEMM 2015 Framework			
Assessment of GEMM 2015	September, 2013	PA-00J-NJV	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzQzODM2
Cross Border Trading Harmonization	October, 2013	PA-00J-NJZ	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzQzODM5
Proposed Amendments to the Law of Georgia on Electricity and Natural Gas (Report)	January 9, 2014	PA-00J-NK3	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzQzODQy

Georgian Transmission Grid Code	February 2013	PA-00J-ZWC	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMTU4
Report on Georgian Distribution Code	April, 2014	PA-00J-ZZH	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMjE4
Electricity Supply Agreement Template	November 25, 2013	PA-00J-NK4	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQzODQz
Draft Template of TSO to Transmission Company Agreement	December, 2013	PA-00J-NK7	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQzODQ2
Analysis of Natural Gas Sector and its Impact on the Electricity Market of Georgia	November 27, 2013	PA-00J-NK9	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQzODQ4
Potential Natural Gas Sector Reforms	June 12, 2014	PA-00J-ZWF	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMTYw
Proposed Approaches to Transition to Hourly Based Electricity Market in Georgia, Stage 1	November, 2013	PA-00J-NKC	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQzODUw
The Summary of the "Socio-Economic Development Strategy for Georgia, 2020"	February, 2014	PA-00J-PSG	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQ0ODA1
Review of Amendments to the Law of Georgia on Electricity and Gas	February 06, 2014	PA-00J-PSJ	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQ0ODA3
New Amendments to the E&G Law Proposed by HPEP in May 2014	May, 2014	PA-00J-TM4	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQ3Nzkx
Oil Industry Legal Framework (Report)	December 19, 2013	PA-00J-NK5	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQzODQ0
International Practices, Legal Framework for Balancing Groups and Balancing Responsible Parties	July 18, 2014	PA-00J-ZVN	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMTM4
Overview of Supplier of Last Resort (SOLR) and Customer Switching Rules	July, 2014	PA-00J-ZVT	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMTQz
Georgian Balancing Market Transition Report	June, 2014	PA-00J-ZW2	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMTQ5
Pricing on Contracting and Balancing Markets for Stage 1 of Transition to Hourly Electricity Market in Georgia	June, 2014	PA-00J-ZW5	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMTUy
Recommendations for Creation of Balancing Groups and BRP	July 17, 2014	PA-00J-ZW7	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMTU0
Assessment Electricity market Rules of December 2013 and their Consistency with GEMM 2015	August, 2014	PA-00K-125	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMjY0
Presentation to Market Players on GEMM 2015 Development	March 19, 2014	PA-00J-TM8	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQ3Nzk1
Presentation on Uniform System of Accounting, USoA, Development	2013	PA-00J-NK1	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQzODQw
Presentation on Uniform System of Accounting, Transmission	2013	PA-00J-NK2	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzQzODQx
USoA Instructions for Cart of Accounts 2100 Property Plant and Equipment	June 25, 2014	PA-00K-12F	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMjcy
USoA-Accounting Guidelines for Georgian Power Market Companies- Contribution and Grants	June 30, 2014	PA-00K-12B	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQtm2YyMi00YjRmLTkxNiktZTcxMjM2NDBmY2Uy&rlD=MzUxMjY5
USoA-Accounting Guidelines for Georgian Power Market Companies	June 30, 2014	PA-00K-12C	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NWQ

Property-Plant and Equipment (PP&E)			tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMjcw
USoA-Accounting Guidelines for Georgian Power Market Companies-Revenues, Cost Centers and Expenses	June 30, 2014	PA-00K-12D	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMjcx
USoA-Instructions to the Chart of Accounts for Georgian Power Market Companies	June 30, 2014	PA-00K-12G	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMjcz
USoA-Mapping (conversion) of Georgian CoA (approved by the commission on accounting standards on august 12, 1999), with Chart of Accounts of Uniform Systems of Accounting	June 30, 2014	PA-00K-129	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMjY4
USoA-Instructions to the Reporting Forms for Georgian Power Market Companies	July 18, 2014	PA-00K-127	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMjY2
Overview of GNERC'S Function in Compliance with EU Acquis Requirements	July, 2014	PA-00J-ZVS	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMTQy
Report on Regulatory Independence	November 26, 2013	PA-00J-NK6	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzQzODQ1
Revised Draft Agreement Between Transmission System Operator and Transmission Company	July, 2014	PA-00J-ZVV	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMTQ0
Comments on the GSE-TEIAS Interconnection Operation Agreement (IOA)	July 16, 2014	PA-00J-ZVP	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMTM5
Subtask 2-B.Strategy Energy Planning			
Subtask 2-b-1 Strategy Support			
Initial Draft of Whitepaper Energy Strategy of Georgia 2015-2030 (to be Finalized by End of August)	August 29, 2014	PA-00K-12R	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMjgx
Energy Policy White Paper: Energy Policy Directions for Georgia	October, 2013	PA-00J-NJT	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzQzODM1
Data Gaps in the Energy Strategy Whitepaper of Georgia 2015-2030	August 25, 2014	PA-00K-22F	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUyMDU2
Subtask 2-b-2 Energy Planning Support			
Principles of Training in Energy Planning	January 2014	PA-00J-TM5	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzQ3Nzky
Summary Report on MARKAL Input Data Collection	June, 2014	PA-00J-ZZF	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMjE2
Household Energy End-Use Survey Across Georgia	July, 2014	PA-00J-ZWB	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMTU3
Presentation on Household Energy End-Use Survey Across Georgia	June 12, 2014	PA-00J-ZWH	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMTYy
MARKAL Final Report	August 25, 2014	PA-00K-22H	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUyMDU4
Subtask 2-b-3 Development of Cost Benefit Analysis			
Data Gaps in Cost-Benefit Analysis Model Of the Enguri Watershed Area	July 23, 2014	PA-00J-ZVZ	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMTQ3
Presentation on CBA made to all Stakeholders	August 12, 2014	PA-00K-164	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rlD=MzUxMzc1
Final Report on Cost-Benefit Analysis Model of the Enguri Watershed	August 14, 2014	PA-00K-1FR	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ

Area			tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxNTg5
Task 3 Support for Investor Outreach			
Energy Sector Map of Georgia	2014	PA-00K-114	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjM1
HPEP One Pager	September, 2013	PA-00K-115	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjM2
HPEP Success Newsletter 1	October, 2013	PA-00K-116	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjM3
HPEP Success Newsletter 2	December, 2013	PA-00K-117	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjM4
HPEP Success Newsletter 3	February, 2014	PA-00K-118	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjM5
HPEP Success Newsletter 4	April, 2014	PA-00K-119	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjM6
HPEP Final Success Newsletter	August, 2014	PA-00K-12S	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjM7
Task 4 Gender Action Plan			
Concepts for Gender Action Plan for 2013-2014	January 10, 2014	PA-00J-PSH	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzQ0ODA2
HPEP Conference : Young Energy Leaders in Georgian Energy Sector – Event Report	April, 2014	PA-00J-ZZG	https://dec.usaid.gov/dec/content/Detail.aspx?ctID=ODVhZjk4NwQ&tM2YyMi00YjRmLTkxNjktZTcxMjM2NDBmY2Uy&rID=MzUxMjE3
USAID HPEP Final Report	August 15, 2014		Search by title on DEC USAID

ANNEX 2 ENERGY MAP OF GEORGIA



USAID Hydro Power and Energy Planning Project (USAID-HPEP)

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