



# REPORT ON THE WORK OF ENERGY STRATEGY WORKING GROUP

GOVERNING FOR GROWTH (G4G) IN GEORGIA

16 November 2014

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USAID GOVERNING FOR GROWTH (G4G) IN  
GEORGIA

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DELOITTE CONSULTING LLP

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# DATA

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**Project Component:** Energy & Water

**Practice Area:** Energy

# ACRONYMS

<b>G4G</b>	USAID Governing for Growth in Georgia Project
<b>USAID</b>	United States Agency for International Development
<b>CSO</b>	Civil Society Organization
<b>CBM</b>	Coal Bed Methane
<b>EC</b>	European Community
<b>EC-LEDS</b>	Enhancing Capacity for Low Emission Development Strategies
<b>EE</b>	Energy Efficiency
<b>ENTSO-E</b>	European Network of Transmission System Operators for Electricity
<b>ENTSO-G</b>	European Network of Transmission System Operators for Gas
<b>ESCO</b>	Electricity System Commercial Operator
<b>ETM</b>	Electricity Trading Mechanism
<b>EU</b>	European Union
<b>GDP</b>	Gross Domestic Product
<b>GGTC</b>	Georgian Gas Transportation Company
<b>GNERC</b>	Georgian National Energy and Water Supply Regulatory Commission
<b>GoG</b>	Government of Georgia
<b>GOGC</b>	Georgian Oil and Gas Corporation
<b>GSE</b>	Georgian State Electrosystem
<b>HICD</b>	Human and Institutional Capacity Development
<b>HPEP</b>	Hydropower and Energy Planning Project
<b>HPP</b>	Hydro Power Plant
<b>MARKAL</b>	Market Allocation software model
<b>MO</b>	Market Operator
<b>MoE</b>	Ministry of Energy
<b>MW</b>	Megawatt
<b>NEEAP</b>	National Energy Efficiency Action Plan
<b>RES</b>	Renewable Energy Sources
<b>SAOG</b>	State Agency of Oil and Gas
<b>DSM</b>	Demand-Side Management

# CONTENTS

<b>INTRODUCTION</b> .....	<b>1</b>
Natural Gas Sector Working Group .....	2
Oil Sector Working Group .....	2
Electricity Working Group.....	3
Energy Efficiency and Renewable Energy Sources Working Group .....	3
<b>CONCLUSION</b> .....	<b>4</b>
<b>ANNEX I: MEMBERS OF THE WORKING GROUPS</b> .....	<b>5</b>
<b>ANNEX II: DRAFT OUTLINE OF THE ENERGY STRATEGY OF GEORGIA 2015-2020 DEVELOPED BY THE WORKING GROUPS</b> .....	<b>7</b>

## INTRODUCTION

Under USAID’s Hydro Power and Energy Planning (HPEP) project, the Energy Strategy White Paper 2015-2030 was developed for the Ministry of Energy of Georgia and presented to the energy sector stakeholders in August 2014. The Deputy Minister of Energy, Irakli Khmaladze, created working groups to draft the first national energy strategy for the country using the white paper as a guiding document. On September 9<sup>th</sup>, 2014, Mr. Khmaladze led the first meeting and proposed the structure of the content of the energy strategy. Mr. Khmaladze divided the working group into three sub working groups focusing on the following areas:

- Electricity sector
- Natural gas sector
- Oil sector

Coal, biomass, energy efficiency, demand-side management and renewable energy resources were not part of the proposed scope. With the recommendation of the working group members, eventually the following sub working groups were created (details about the members of the working group can be found in Annex I):

- Electricity sector
- Natural gas sector
- Oil sector
- Energy Efficiency and alternative energy sources

Coal and biomass were both included in the alternative energy sources working group, but eventually coal was eliminated from this group. At this time, there are four functional working groups in the following areas: electricity, natural gas, oil and Energy Efficiency (EE) and Renewable Energy Sources (RES) (Figure 1). The Ministry of Energy plans to create two additional working groups at a later stage: energy security and oil by-products sector working groups. Energy Security working group will be a closed working group with members from only the Ministry of Energy. Oil by-products working group will require involvement of outside experts due to lack of human capacity in this sector.

**Figure 1: Current structure and status of the Energy Strategy Working Group**



Mr. Khmaladze suggested the structure of the document to include a detailed overview of the current status of a given sector, sector-specific challenges for the strategy and a proposed action plan to address these challenges. The strategy prepared by the working groups will be evaluated by the Minister of Energy, the deputy ministers, outside experts and the heads of key stakeholder companies in the energy sector of Georgia. The first task of each working group was the creation of a strategy outline for their specific energy sector. The outline was to be completed in two meetings. Most working groups accomplished the task in the given timeframe and at this stage the decision-makers at the Ministry of Energy are reviewing the proposed outline of the Energy Strategy.

## NATURAL GAS SECTOR WORKING GROUP

The natural gas working group met two times (Table 1) to produce the outline for this sector. Member entities of the working group were as follows:

- Ministry of Energy (MoE)
- Georgian Oil and Gas Corporation (GOGC)
- Georgian Gas Transportation Company (GGTC)
- State Agency of Oil and Gas (SAOG)
- Georgian National Energy and Water Supply Regulatory Commission (GNERC)
- United States Agency for International Development (USAID)

**Table 1: Natural Gas WG Meetings**

Meeting 1	15-Sep-14
Meeting 2	18-Sep-14

The natural gas working group meetings were effective and efficient. GOGC proposed incorporating its gas balance into the energy strategy. Tariffs and social tariffs were main subject of debate. Eventually, the working group agreed that the vulnerable population had to be covered by the strategy as the draft Energy Policy also covers this population. Natural gas working group agreed that it is unlikely the existing structure will change before 2020, and the most feasible solution is a differentiated tariff structure. GOGC noted that gas storage must be started by 2022 and there need to be socially targeted subsidies in the sector. GOGC is currently initiating talks on possible gas storage in Samgori South Dome.

## OIL SECTOR WORKING GROUP

The following entities were represented at the meeting (Table 2) of the oil sector working group:

- Ministry of Energy (MoE)
- Georgian Oil and Gas Corporation (GOGC)
- State Agency of Oil and Gas (SAOG)
- United States Agency for International Development (USAID)

**Table 2: Oil Sector WG Meetings**

Meeting 1	16-Sep-14
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This working group has many common members with gas WG and no further meetings were necessary after drafting the energy strategy outline in the oil sector.

The draft strategy outline in this sector was provided by SAOG (Giorgi Tatishvili – head of the agency). The rest of the group modified what SAOG had proposed. The main discussion focused on whether gas and oil should be included in the same working group. Eventually it was decided that a third working group is needed for the oil by-products sector as GOGC stated that they do not have enough expertise in the area. Involvement of outside experts will be necessary for oil by-products strategy development.

USAID and GOGC recommended including Human and Institutional Capacity Development (HICD) in the strategy, which was initially opposed by SAOG. State Agency of Oil and Gas also disagreed with the additional functions USAID’s white paper had recommended for GNERC (i.e. regulating oil standards, downstream oil sector regulation) and the Agency also disagrees that it should be independent from the state. However, SAOG agreed to discuss these points further within the working group at a later stage.

## ELECTRICITY WORKING GROUP

Meetings of this working group were the lengthiest due to the large size of the group and the presence of many lawyers and entities with conflict of interest; for this reason the development of the strategy outline required four meetings (Table 3) in the case of electricity sub working group. The following entities were represented:

- MoE
- GNERC
- GSE
- ESCO
- SaqRusEnerg
- Ltd. Engurhesi
- USAID

**Table 3: Electricity WG Meetings**

Meeting 1	16-Sep-14
Meeting 2	19-Sep-14
Meeting 3	26-Sep-14
Meeting 4	30-Sep-14

The discussion on whether to have an overview of the current status at all and defining the relationship between policy and strategy dominated the majority of the first meeting. Mr. Khmaladze had to appear at the meeting briefly to reiterate his expectations and the desired outline structure. The outline created by the oil and gas sector working groups was used as a

guideline, but the first draft of the outline for electricity sector was not completed by the end of the first meeting.

The Deputy Minister expressed his dissatisfaction with the work of the electricity sector working group. His main criticism apart from slow work process was that the action plan did not address or respond to the challenges stated by the strategy.

The working group discussed whether the current electricity sector strategy should be discarded. There was a discussion on the adequacy of the Georgian equivalent terminology for vulnerable population as the Ministry of Energy representatives expressed they did not approve of the equivalent term in Georgian.

The working group debated whether or not the current market is competitive. The working group decided instead to discuss the approximation to EU legislation in the energy sector. The need of subsidies in the electricity sector was debated. ESCO expressed opposition to removing Kakheti distribution subsidies.

The group further discussed the infrastructure development plan. The 10-year network development plan will be based on the generation plan by the Ministry of Energy. There was a disagreement over whether long-term vision should be part of the strategy and whether the action plan should be a separate document as opposed to part of the energy strategy.

It was decided that the definition of terms should be added and the role of the energy strategy in the electricity sector clarified. Working group members decided to take the finished outline and consult internally with the entities they represent before approving the draft outline to be presented to the deputy minister for review.

## ENERGY EFFICIENCY AND RENEWABLE ENERGY SOURCES WORKING GROUP

Although the working group was created at a later stage, two meetings were held (Table 4). Participants of the working group represented following entities:

- MoE
- USAID
- GNERC
- ESCO

Originally, this working group was called Energy Efficiency and Alternative Energy Sources and it included coal and peat sector strategies as well. However, it was decided to remove coal and peat from the strategy and the working group was renamed Energy Efficiency and Renewable Energy Sources.

**Table 4: EE and RES WG Meetings**

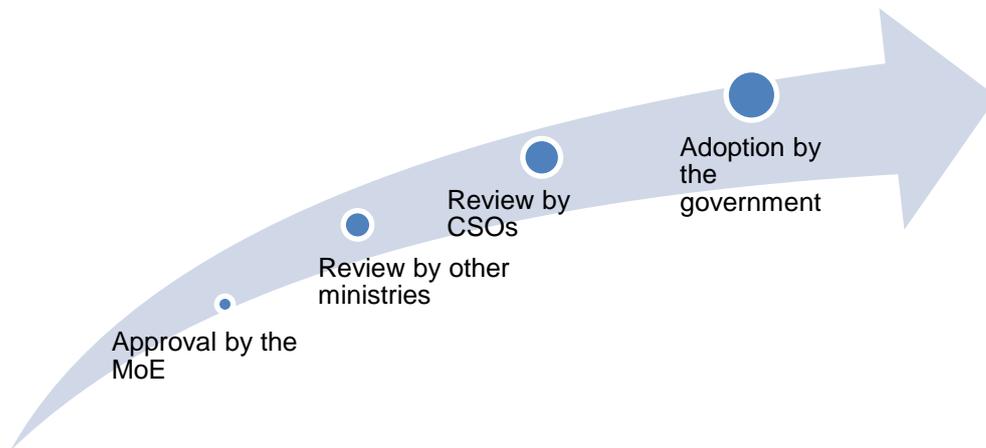
Meeting 1	17-Sep-14
Meeting 2	26-Sep-14

The Energy Efficiency department of the Ministry of Energy prepared a draft outline of the sector strategy and proposed it to other members of the working group. Main discussion was concerning demand-side management and whether it should be part of the strategy document.

## CONCLUSION

At this time the deputy minister has received the final outline of the energy strategy (Annex II), which he has shared with his fellow deputies and key energy sector stakeholders and directors of major entities in this field for feedback. The deputy minister is expected to share the outline with the Minister of Energy of Georgia and then divide the sections of the outline among working group members, who will then supply the text for their respective sections. The expected process of adoption of this document is shown in Figure 2. Once the Ministry of Energy finalizes the Energy Strategy document drafted by the working group, other ministries will be asked to review the document. At a final stage, public discussions of the strategy and reviews by the Civil Society Organizations (CSOs) will take place, after which the Government of Georgia will adopt the document.

**Figure 2: Adoption process of the Energy Strategy document**



## ANNEX I: MEMBERS OF THE WORKING GROUPS

Electricity Working Group	Natural Gas Working Group	Oil and Oil by-products Working Group	RES & EE Working Group
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<b>Ministry of Energy</b>	Maka Phartsvania				
	Giorgi Shukakidze				
	Zaza Shemozashvili				
	Gela Molarishvili				
	Elene Goksadze				
	Tata Murtskhvaladze				
	Natalia Jamburia				
	Ana Jejelava				
	Marita Arabidze				
	Tamar Tsurtsumia				
	Ana Gogoreliani				
	Mariam Khosroshvili				
	Nestan Gaphrindashvili				
	<b>GOGC</b>	Temur Gochitashvili			
Aleko Abaiadze					
Vazha Khidasheli					
<b>GGTC</b>	Gigla Tamazashvili				
<b>State Agency of Oil and Gas</b>	Djemal Chrelashvili				
	Giorgi Kvinikadze				
<b>GNERC</b>	Nugzar Beridze				
	Zviad Gachechiladze				
	Mari Ioseliani				

	Ivane Pirveli				
<b>GSE</b>	Dato Dgebuadze				
	Misha Tavberidze				
	Zaza Chikhradze				
<b>ESCO</b>	Malkhaz Broladze				
	Rusudan Mazmishvili				
	Davit Namchevadze				
<b>SaqRusEnerg</b>	Davit Gvinephadze				
<b>Engurhesi</b>	Akaki Gatserelia				
<b>USAID</b>	Lela Jgerenaia				
	Giorgi Chikovani				

## **ANNEX II: DRAFT OUTLINE OF THE ENERGY STRATEGY OF GEORGIA 2015-2020 DEVELOPED BY THE WORKING GROUPS**

### **1) Goals and objectives of the energy sector strategy (electricity, energy efficiency, renewable energy sources, natural gas, oil)**

- Until year 2020
- Long term vision

### **ELECTRICITY:**

### **2) Current status of electricity sector**

- Structure and regulation of the electricity sector
- Legal framework
- Energy resources and current projects
- Generation facilities and infrastructure
  - Generation
  - Transmission
  - Dispatch
  - Distribution
- Supply-demand analysis
- Market model and electricity (capacity) trading mechanisms
- Electricity supply, reliability and quality analysis
- Analysis of regional developments

### **3) Challenges and prognosis**

- Supply-demand prognosis, capacities and related challenges
- Infrastructure challenges
- Systemic service challenges
- Integration with international (among them energy sector) organizations and associated challenges (EU/Association Agreement)
- Vulnerable consumers

### **4) Action plan and strategic vision based on sector challenges and prognosis**

- Development of electricity generation based on supply-demand prognosis and challenges related to capacities:
  - Moving country's existing capacities to project parameters
  - Creating a utilization plan for hydro resources of the country
  - Construction of small, medium and seasonal regulated HPPs
  - Construction of a coal-fired TPP
  - Construction of modern combined cycle thermal power plants
- Support of development of necessary system service for guaranteeing reliable and sustainable electricity system
- Development of transmission network plan and its implementation:
  - Construction of inter-system electricity transmission lines
  - Construction / rehabilitation of system power transmission network
- Gradual approximation with EU energy legislation and creation of an electricity market compatible with the EU legislation
- Development of regional cooperation
- Determining the criteria for identifying the vulnerable groups and determining mechanisms for their protection in the context of a new electricity market model

### **5) Main results.**

## Energy Efficiency

### **6) Current status**

- Currently, the country does not have legal framework that would regulate the energy efficiency related matter in various sectors;
- Only small scale projects and surveys have been implemented by non-governmental and international organizations;

### **7) Challenges and prognosis**

- Developing National Energy Efficiency Action Plan (NEEAP) based on the structures created by the EU Directives and the Energy Community
- Creation of organizational and legal framework as well as establishment of regulations and approximation with the European Directives
  - Law on Energy Efficiency
  - Regulations on thermal technical characteristics in construction sector and other areas
- Lack of institutional instrument, which would control the country's energy saving and energy efficiency measures
- Evaluating country-wide energy saving potential – based on energy intensive and energy-consuming sectors
- Database (energy consumption by sectors), energy statistics, responsible entity (fuel switching)
- Low level of public awareness
- Lack of financial resources for implementation of energy efficiency measures
- Lack of affordability of Energy Efficient technologies
- Integration with international (among them energy sector) organizations and associated challenges (EU/Association Agreement)

### **8) Assessment of the current state based on sectors, analysis and creation of National Energy Efficiency Action Plan (NEEAP)**

- In various (relevant) sectors (energy, industry, agriculture, construction – including all possible types of buildings, transport, household and commercial sectors) conducting a country-wide evaluation of energy saving potential, analysis and determination of energy efficiency measures based on those
- Review, evaluation and analysis of the legislative framework on energy efficiency and corresponding European Directives
- Evaluating the energy saving potential in the industrial sector, analysis and determining the energy efficiency measures
- Evaluation of potential of energy savings in the residential (population/households) sector, analysis and determination of energy efficiency measures
- Evaluation and analysis of Demand-Side Management
- Determining energy services (energy audit)
- Certification body of energy audit companies

### **9) Main results.**

## Renewable Energy Sources

### **10) Detailed assessment of potential of existing renewable energy resources and analysis and performance assessment**

- Wind
- Sun

- Biomass / biofuels
- Wastes / residues
- Geothermal

#### 11) Challenges and prognosis

- Lack of legal framework consistent with European Directives
- Lack of State Programs
- Tariff Policy
- Low level of public awareness
- Integration with international (among them energy sector) organizations and associated challenges (EU/Association Agreement)

#### 12) Action Plan

- Creation of legal framework
- Developing state programs
- Development of tariff policy
- Implementing measures in order to raise public awareness

#### 13) Main results.

#### Natural Gas

#### 14) Current status of the gas sector

- Gas sector structure and organization, regulation (market)
- Current developments in the region
- Transit projects
- Infrastructure
- Supply analysis
- Consumption analysis

#### 15) Challenges and prognosis

- Energy security
  - Supply-demand prognosis and associated challenges
  - Possible impact from current regional developments and processes
  - Infrastructure challenges
- Integration with international (among them energy sector) organizations and associated challenges (EU/Association Agreement)
- Development of a competitive market
- Vulnerable groups
- Consumer protection (improving service quality)

#### 16) Action Plan

- Activities to ensure energy security
  - Strategic reserves
  - Supply diversification
  - Maximal utilization of local resources
  - Emergency situation management
  - Gas balance
  - Infrastructure projects
- Facilitation of development of competitive markets
- Organizational and legislative reform, gradual approximation
- Vulnerable groups (targeted social protection programs)
- Consumer protection (improving service quality)

## 17) Main results .

### Oil and Gas

#### 18) Current status

- Oil and Gas Operations
  - Segment management structure (laws / regulations)
  - Existing projects (oil and gas contracts)
  - Infrastructure (wells, headworks, measuring points, inner pipelines)
  - Oil and Gas Operations Analysis
  - Conclusions
- Current status of oil refining and gas processing segment
  - Segment management structure (laws / regulations)
  - Segment Overview
  - Conclusions
- Non-conventional hydrocarbon resources
  - Shale oil
  - Shale gas
  - Coal-bed methane
  - Gas hydrates
  - Conclusions

#### 19) Challenges and prognosis

- Dependence of the local market on imported oil products/raw material
- Depletion of local hydrocarbon reserves
- Obsolete, environmentally hazardous facilities
- Lack of synchronization of historical and new data
- Integration with international (among them energy sector) organizations and associated challenges (EU/Association Agreement)
- Social issues
- Educational institutions and local human resources

#### 20) Action Plan

- Creating a comprehensive database – its management
- Reducing ecological risks of oil and gas operations' infrastructure
- Developing small-debit well projects
- Support the development of modern refinery industry
- Modernization of legislation
- Educational Projects (local professionals, public awareness)

## 21) Main results.

### Oil By-Products Market

#### 22) Current status

- Transport sector (benzin, diesel, etc.)
- Household sector
- Industry

#### 23) Challenges and prognosis

- Quality control

- Competitive environment

**24) Action Plan**

- Regulatory legal framework
- Support the creation of a competitive environment

**25) Main results.**

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