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Hydropower Investment Promotion Project (HIPP)

RENEWABLE ENERGY ROAD MAP FOR GEORGIA

DRAFT, August 2013

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Definition of Abbreviations

ACER	Agency for the Cooperation of Energy Regulators
BSTP	Black Sea Transmission Project
EC	Energy Community
ENTSO-E	European Network of Transmission System Operators for Electricity (formerly the UCTE)
ESCO	Electricity System Commercial Operator
ESP	Energy Service Providers
EU	European Union
FiT	Feed-in Tariff
FCA	Forward Capacity Auction
GDP	Gross Domestic Product
GEL	Georgian Lari (the currency)
GEMM	Georgian Electricity Market Model
GNERC	Georgian National Energy and Water Supply Regulation Commission
GoG	Government of Georgia
GSE	Georgian State Electrosystem
IOU	Investor Owned Utility
ISO	Independent System Operator
KPI	Key Performance Indicator
kV	Kilovolt
kWh	Kilowatt-hour
LSE	Load Serving Entity (same as a DSO, Distribution Syste erator)
LTPP	Utility Long Term Procurement Planning
MoE	Ministry of Energy
MENRP	Ministry of Environment and Natural Resources Protection
MoESD	Ministry of Economy and Sustainable Development
MoF	Ministry of Finance
MOO	Must Offer Obligation
MV	Medium Voltage
MWh	Megawatt-hour
NRA	National Regulatory Authority or Agency
PU	Public Utility
RA	Resource Adequacy
RE	Renewable Energy
REAP	Renewable Energy Action Plan (or NREAP, National Renewable Energy Action Plan)
RES	Renewable Energy Sources
RMR	Reliability Must Run
ROI	Return on Investment
SEE	South East Europe
SHPP	Small Hydro Power Project
SO	Service Obligation
TEAIS	Turkish Electricity Transmission Company.
TSO	Transmission System Operator
USAID	United State Agency for International Development

W	Watt
Wh	Watt-hour

1.0 Background

This document was compiled by a USAID-funded advisory project, Hydropower Investment Promotion Project. The HIPP project supports the Government of Georgia to attract investment from the private sector in modern, efficient hydropower plants. Since March, 2010, HIPP has supported market-based initiatives to promote and secure international investments into Georgia's small and medium-sized hydroelectric power market.

This document concerns the issue of renewable energy planning and implementation, in the context of Georgia implementing a competitive power market model ("Georgian Electricity Market Model," or GEMM). Renewable Energy ("RE") in this discussion means generation of electricity from large and small hydroelectricity, wind, solar, biomass, and geothermal.The primary focus of this document concerns grid-connected renewable power projects.

Georgia is introducing a competitive power market and therwise enhancing and reforming its electric power sector for four main reasons:

- To secure domestic power supply for Georgia's population and industry
- To avail significant private investment for export-oriented hydropower plants located in Georgia
- To engage in beneficial electricity trade with Georgia's immediate neighbors: Turkey, Azerbaijan, Armenia, and Russia.
- To harmonize and connect with the European Union for mutually beneficial electricity trade.

In January of 2013, Georgia applied to become a member of the European Energy Community. Georgia has been an observer of the treaty since December 2007.The Energy Community consists of countries that have agreed on a common, stable regulatory and market framework in order to:

- Attract investment in power generation and networks in order to ensure stable and continuous energy supply that is essential for economic development and social stability;
- Create an integrated energy market allowing for cross-border energy trade and integration with the EU market;
- Enhance the security of supply;
- Improve the environmental situation in relation with energy supply in the region;
- Enhance competition at regional level and exploit economies of scale.

Georgia's application is subject to negotiation expected to begin in later part of 2013, and should end with an agreed upon set on legal and policy actions that Georgia must undertake in order to join the Energy Community.

The issue of renewable energy implementation figures into many, indeed, virtually all planning dimensions in the power sector worldwide and especially in the EU and Georgia. It affects many different issues such as:

- Creating major new transmission linkages, since major renewable resources are often located far from load centers;
- Managing the intermittent nature of major renewable resources, including arranging for backup replacement generation;
- Integrating and paying for the financial impact of renewable energy that is more expensive and has a high up-front cost; and,
- Capturing and monetizing the environmental benefit of carbon avoidance.

The end product for this report is a proposed Road Map for Renewable Energy – a suite of targeted, practical actions – that can serve as a point of departure for stakeholders. The responsibility of completely implementing renewable energy falls across several Georgian agencies, which need to work cooperatively and need to respect the goals and constraints of eachother and each stakeholder. Especially as it relates to permitting there are important boundaries and interests with respect to environmental protection, labor, and consumers.

In a deregulated environment, when bringing in new renewable generation capacity, it is critically important to gain the benefits of competitive pressures to lower costs, while adhering to policy goals for renewables. The impact of deregulation and cross-border interdependence has a potentially big effect, due to renewable resources in countries outside the EU, and that may count towards meeting EU Member States' goals for renewable energy production.

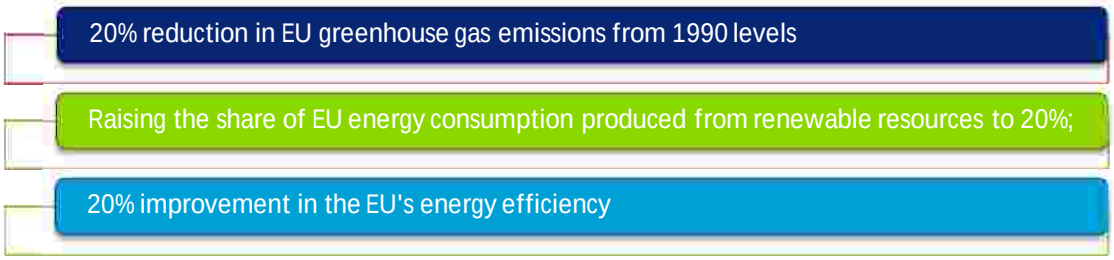
This portends a good opportunity for countries blessed with high amounts of renewable energy resources, like Georgia, and that are hoping to serve the EU.

Since 2003, the EU has been making rules to create a common electricity market including cross-border trading. This has required that each EU Member Country, and other bordering countries, meet strict technical, legal, regulatory and financial standards.

One of the most significant requirements in the EU "Third Package" is the 20/20/20 goal, shown in Figure 1.[1] These goals are EU-wide and will shortly extend to Turkey. In 2011, Turkey joined the European Network of Transmission System Operators for Electricity and harmonized its legislation with EU directives to allow cross-border trading. Assuming that Georgia similarly legislates and conforms to the EU rules, there is an attractive economic opportunity for Georgia to be a significant regional energy exporter of renewable energy.

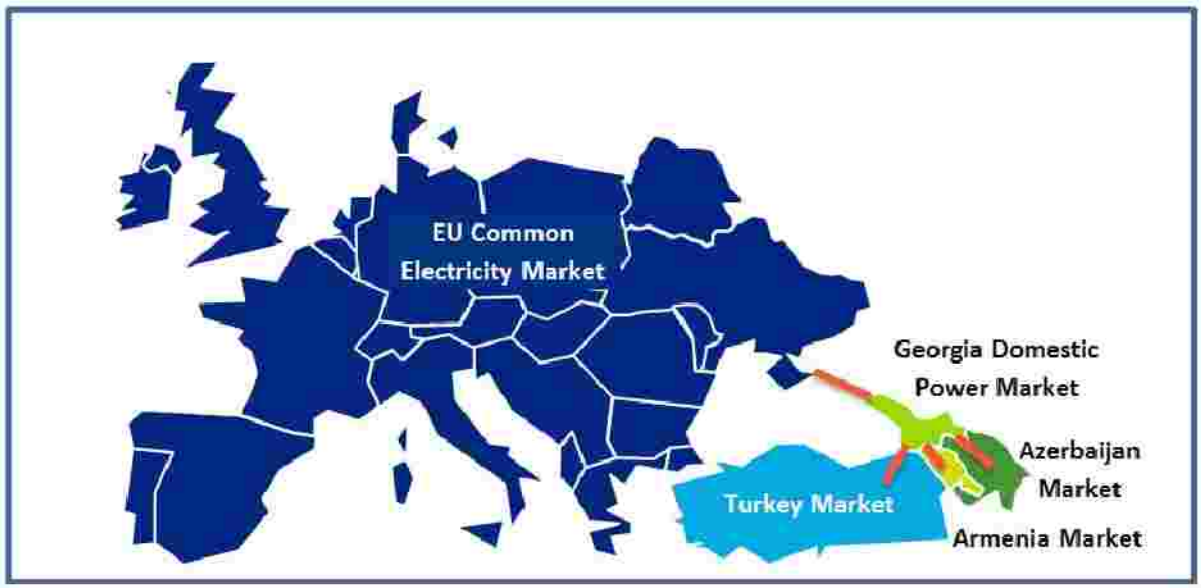
[1] See: http://ec.europa.eu/clima/policies/package/index_en.htm

Figure 1: Renewable Energy Goals in Europe



Georgia is strategically located to access neighboring and regional power markets. In Figure 2, "Electricity Markets," Georgia is shown in bright green, north of Azerbaijan and Armenia, and northwest of Turkey. Georgia's immediate neighbors could potentially find great value from Georgia's hydroelectric resources. Turkey's electricity is largely fueled by natural gas and coal. Azerbaijan's power sector is largely run on oil and natural gas. Armenia is run primarily on nuclear and natural gas; Nuclear serves about 35% of the total system energy. Armenia recently put in to place two new gas-fired combined cycle units, which displaces old theremal power units.. From a utility planning viewpoint, Georgia's regiona ibution offers valuable fuel diversity and cost reduction, especially as fossil fuel prices rise.

Figure 2: Electricity Markets



Also, the priority of renewable energy development in Europe may confer on Georgia's hydropower plants special higher value, because of the need caused by wind and solar intermittency, with some level of flexibility of delivery.

The main problem with overall investment planning in the power sector, but especially with regard to renewable energy generation, has to do with the priority and sequence of decision: whether to secure transmission capacity before securing a site and a PPA to build generation, or whether to secure a ion and a PPA before securing transmission capacity. Policy makers around the world are wrestling with this issue, especially so as to induce the higher amount of renewable generation that is often located far from load centers.

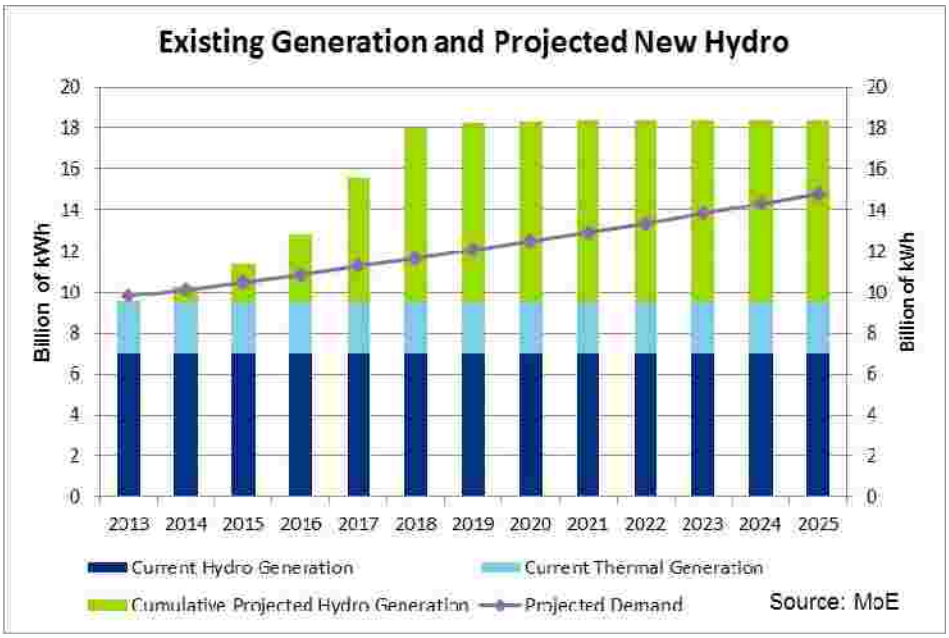
In order to create a Georgian competitive market for electricity, more reforms are needed, with concomitant investment in transmission resources, and which offer economic choices and flexibility for producers and consumers. These additional reforms will require changes concerning technical matters, new laws, and regulatory and financial improvements. Although the challenges are daunting, there are well-established formats and structures being developed worldwide, and specifically by the European Union. There now is a body of experience from countries that have made the requisite changes in their power sectors, and have joined the EU common market structure, such as in Bulgaria.

Georgian policy-makers need to take near-term and medium-term actions to induce the investment in Renewable Energy sought. This document outlines more detail about renewable energy planning in the power sector. It provides the current status regarding each issue in Georgia, the relevant worldwide best practices and EU requirements, and a suggested Road Map for Renewable Energy delineating activities for Georgian policy-makers, regulators, and power systems operators.

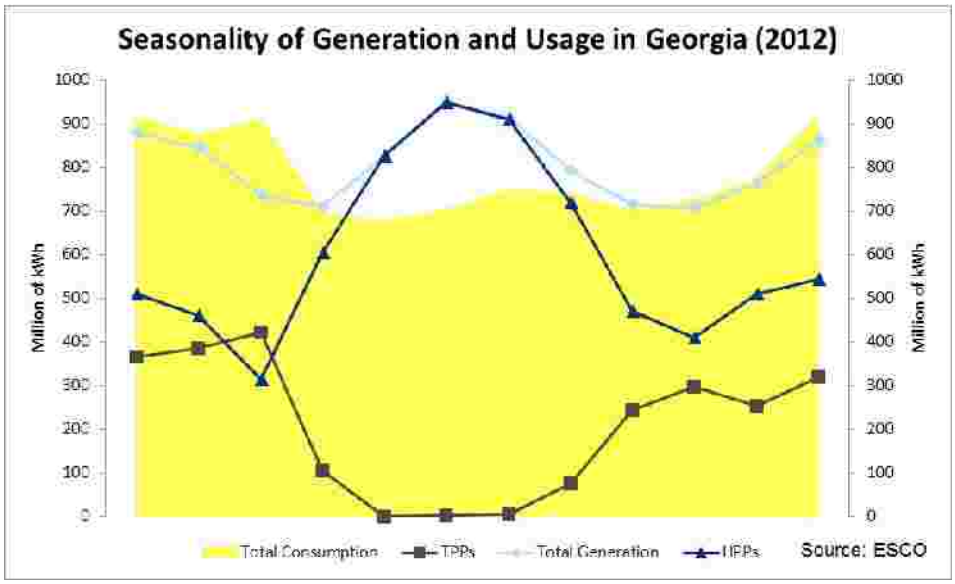
2.0 Renewable Energy Potential in Georgia

Relative to existing demand, there is significant potential form RE in Georgia from hydro. The analysis indicates that added new hydro will provide excess power that may be exported.

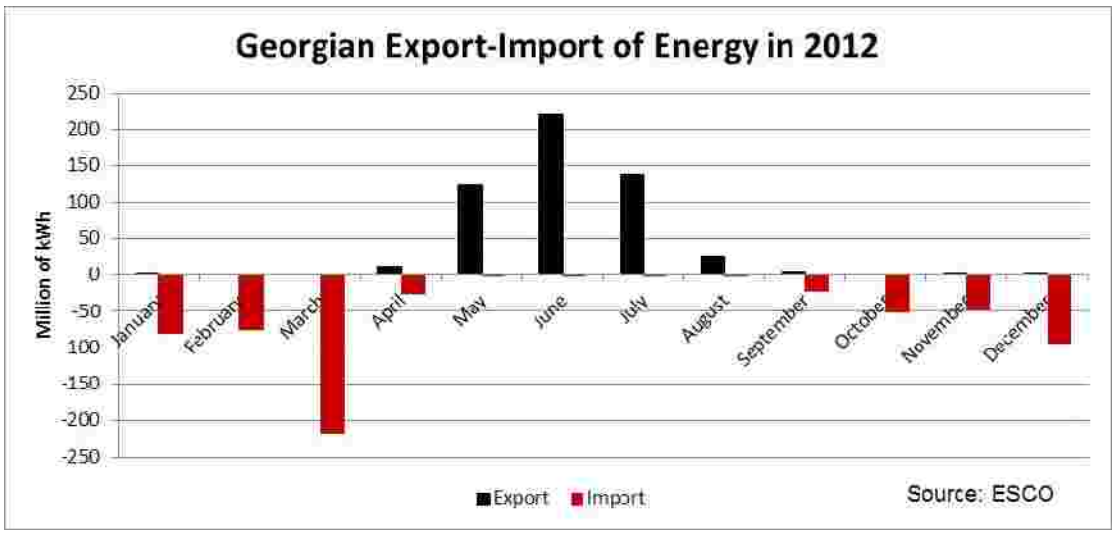
The following chart shows that in 2013, current hydro and current thermal generation is about equal to Projected Demand at 10 billion kWh per year. Note that the effects of imports, exports, and transmission losses, total to net out at approximately no effect. Projected Demand is the demand of distribution companies and bulk customers. We assumed a 3.5% growth rate of demand.



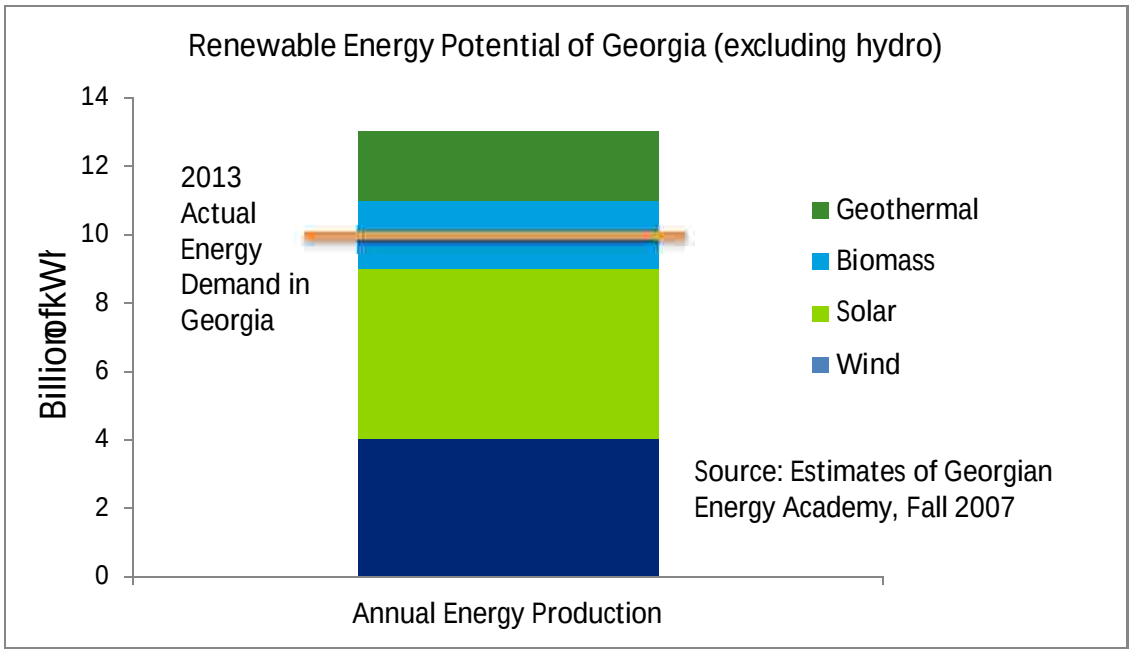
However a problem with hydro, relative to serving domestic Georgian demand, is that hydro fluctuates seasonally, as shown in the following chart.



As a result of the seasonality of natural hydro flows, Georgia has to import power in winter, and has excess capacity so as to export in the summer. This is shown in the graph below.

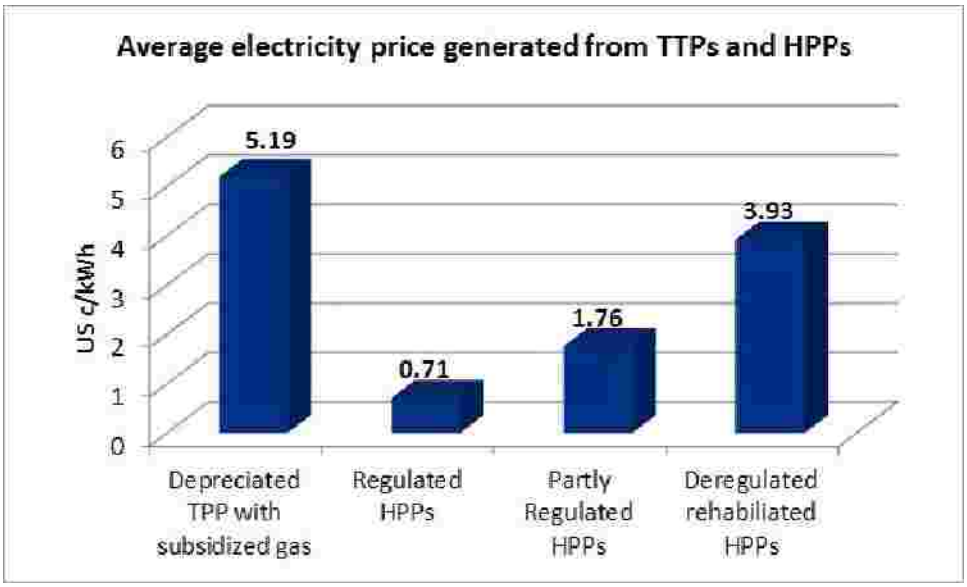


Besides hydroelectric projects, there is also good potential for others types of renewable energy. The following chart shows the potential of other types of renewable energy in Georgia, indicating that resources are significant relative to existing demand. This is especially important because of the seasonality of hydro, demonstrated above.



Clearly there is good potential for RE in Georgia, for domestic use and enough for export. Another consideration in the application of RE is of course price. While the cost of wind and solar may exceed average cost, Georgia has many hydro sites that offer compelling economics.

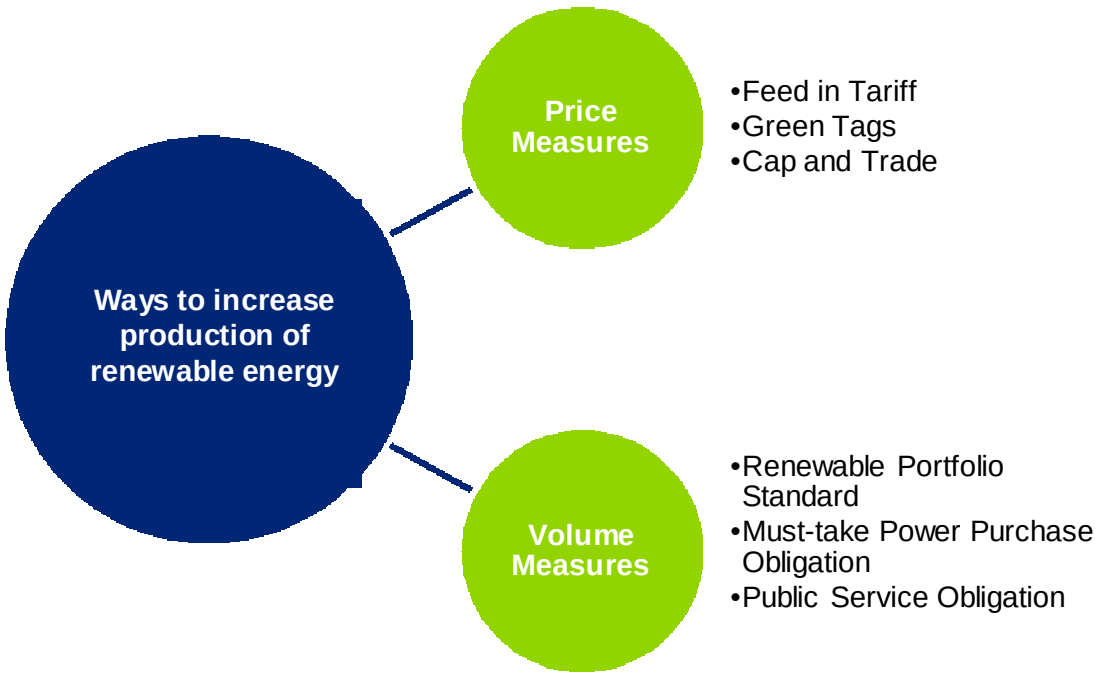
The following chart illustrates that latest new hydro (deregulated HPPs) have a delivered energy prices about 20% lower than existing thermal projects running on subsidized natural gas. These results are possible because the plants have relatively low capital costs (due to they are run-of-the-river design not having a large dam) and have relatively high capacity factors.



3.0 Worldwide Best Practices

Policy-makers and power sector officials are continually devising innovative ways to encrouage, reward, or mandate more producton and use of renewable energy. There are essentially (only) two ways to create a greater amount of renewable energy as a portion of the supply portfolio, involving: 1) price, or 2) volume.

The volume way is to mandate that a greater share of renewable energy be used,in terms of a percentage of total energy. The price way is to give as price preference so that renewable energy has relatively more value. There are advantages and disadvantages to each of the two overall approaches, and the approaches may be used in combination, along with other inducements.



These approaches are discussed briefly below;

a) RPS, Renewable Portfolio Standard, require an amount of renewable, all-source renewable or by technology, diversity of supply.

   An RPS may be done on a regional or national basis, and in the case of the EU it is done a continental basis. Usually there is a definition on renewable energy that includes wind and solar and small hydro, but usually excludes large hydro. Note that an RPS defines renewable energy production b the amount of energy produced, not based on the installed capacity. This is because solar and wind have relatively low capacity factors, in the range of 20% and 30%, respectively, for wind and solar. The RPS approach is consistent with power sector best practices that seek to balance all resources

and to avoid overdependence on certain technologies or too much on one or a few power plants.

b) Must-take Power Purchase Obligation

In a single buyer environment, the single buyer, or some centralized buyer (like ESCO) is obligated to take and pay for RE from eligible projects. This approach was more workable when the amount of renewable energy was essentially negligent as component of overall power supply. Now it is widely being abandoned as the percentage of renewable energy increases, and a blanket obligation is too inflexible and may be deleterious to ratepayers.

c) Public Service Obligation

In a bilateral contracts environment, when a distribution company is obligated to purchase a share of the energy from RE projects. This may be more beneficial than must-take power purchase obligation because the support obligation for RE could show up clearly on customers' billing statement, as is done in the EU. And it is more consistent with a bi-lateral contracting market structure.

d) FiT, Feed-in tariffs, floors, ceilings, RFP's for capacity, capacity limitations, trade off cost versus diversity of supply

A Feed-in-Tariff is a pre-set price for power, usually with the same definition as given above for RPS. FiT is simple in principle but can be devilish to implement. An instantly presenting difficulty is what price to set – each technology generally needs a different price and each location needs a different Some countries have made FiT's based on different underlying financing. Ultimately a FiT can be so specific that it effectively becomes a type of cost-of-service regulation, and which defeats the purpose. Secondly an overall problem with the Feed-in-Tariff is that it is hard to preempt a windfall and excess development, as has happened in Germany, Italy, and Spain. Since ESCO buys power from new RE for ten years using a formula based on replacement of Gardabani electricity production costs, there is not too much risk of excessive payments to RE with locked-in contracts.

e) Green tags, (relates to Guarantee of Origin) adding a premium payment.

This is an approach that provides a tradable and verifiable mechanism to give a premium payment to renewable energy producers. It is ctive tool because it separates out, and gives flexibility for monetizing the value of renewable energy production. The "brown energy" can sold where it has the most value and the "green component" can be sold where it has the most value. Thus the green tag modality has the most compatibility with a market approach, and maximizing consumer economic value.

f) Cap and trade, trading certificates, tax benefits

The cap and trade approach refers to artificially creating a fixed amount of some allowance, such as allowance to emit greenhouse gases. Then such rights to emit can be sold or traded. This allows free approach to reducing emissions based on new technologies or selling to another party with a clever idea or market mechanism to absorb the allowance.

Tax benefits refer some kind of offset against other taxes owed: corporate or income taxes. These offsets can arise from investment tax credits for making a certain kind of investment, accelerated depreciation benefits, or a tax credit based on production of energy from renewable facilities. In general, tax benefits are a useful investment motivation in a country with high tax rates and a culture of actually paying taxes. Therefore, in many countries tax benefits are not an effective policy tool.

Some other worldwide best practices can relate to link wable energy facilities to job creation, and requiring manufacturing to be set up locally, buying local content, and customs duties relief.

4.0 RE Current Legal Framework in Georgia

a) 2008 Georgia Energy Policy (latest most relevant)
   i) Government resolution “Renewable Energy 2008” – establishes a standard form and process for renewable energy project development. This Resolution sets aside winter season (time of peak demand) so that new hydroelectric plants can be used only for domestic Georgian use.
   ii) Sets forth a standard application process for developers to follow for proposing and implementing projects.
   iii) Provides for developers to gain exclusive rights to a project site, and requires them to post a bank guarantee to back up the commitment to install the power plant on a date-certain basis.
   iv) This policy did not draw investment as anticipated, because developers could not get comfortable with many different elements of the off-take risks.
   v) No licensing under 13 MW for SHPP (“Small Hydro Power Project”).
b) Electricity Market Rules (Approved 2006, last amended April, 2013)
   i) Total deregulation for SHPP under 13 MW
   ii) Right to retail sales for SHPP
   iii) Preferential price scheme when selling to ESCO for SHPP

c) Law of Georgia on Electricity and Natural Gas
   i) One of the objectives of the Law is to encourage the priority use of indigenous hydro, other renewable, alternative and gas resources.
   ii) One of the Ministry of Energy's main functions will be urage the priority use of indigenous hydro, renewable, alternative and gas resources, which is already a priority under the State Program Renewable Energy 2008.

d) Georgian National Energy and Water Supply Regulation Commission (GNERC) has important responsibilities including licensing, power sales contract compliance with Market Rules, and importantly, consumer protection from inappropriate or excess charges from any generation source and any investror including those in renewable energy. The main functions of the GNERC may be found in Article 4 of the Law on Electricity and Natural Gas. These functions are the following:
   i) The establishment of rules and conditions for granting generation, transmission, dispatch, distribution, as well as natural gas transportation and distribution licenses, also the granting, modification and revocation of licenses in compliance with the Law of Georgia on Licenses and Permits, this Law and licensing rules;
   ii) The setting and regulation of tariffs for electricity generation, transmission, dispatch, distribution, transit, import and consumption, a system commercial operator service and System Capacity Reserve to be purchased under the mandatory rule by the system commercial operator, also the setting and regulation of tariffs on natural gas transportation, distribution delivery and consumption, excluding tariffs on natural gas sold at gas filling stations, pursuant to this Law, main directions of the state policy in the energy sector, the administrative legal acts adopted based on them and the established methodology.
   iii) Within its competence, the settlement of disputes aris ween licensees, small hydropower stations, importers, exporters, suppliers and consumers, also the commercial system operator;
   iv) The establishment of control over the meeting of licen g conditions within the electricity and natural gas sectors of Georgia and application of relevant administrative sanctions for violation of the conditions in keeping with law;

e) Gaps: There is no Law of Georgia on "Renewable Energy Sources" which has been adopted as of yet. An inadequate draft was circulated and it is our understanding that it is being wholly revamped.

4.1 Gaps concerning Renewable Energy regulation

While hydro power investment has been forthcoming, that has been based on supportive legal framework and policy security indicated by GEMM 2015.

The only document regulating renewable energy related issues (Renewable Energy) is Government Resolution of 2008. This Resolution is a secondary legislation of Georgia.

Based on investor workshops and individual contacts carried out by HIPP project in 2010-2012, some gaps were identified, based on the concerns voiced by investors, namely:

- Renewable Energy related issues are not covered by the primary legislation;
- Amount of requested bank gauarantee is too high;
- No state guarantees are provided;
- No support mechanisms in place to develop Renewable Energy;
- No action plan approved by the GoG;
- No preferential tariff exists for Renewable Energy;
- Lack of priority access to the interconnection line to Turkey

In order to fill these gaps, it is important that the primary legislation be in place.The HIPP findings are consistent with the World Bank 2012 Report "Assessing the Investment Climate for Climate Investment," which listed the following indicators as critically important in attracting renewable energy:

4.1.1 World Bank Table of Indicators for Investing in RE and HIPP View of Georgia

No.	World Bank Indicators for Creating a Positive Investment Climate and Sector-Specific Indicators for Solar PV, Wind, Biomass and Small Hydro	Status in Georgia as per HIPP Judgment
1	Existence of RE Policy and Law	
	RE Policy	No
	RE Law	Weak[2]
2	Existence of RE Target	No
3	RE Purchase/Off-take Obligation	No
4	Availability of Tradable Instruments for RE	No
5	Preferential Tariffs for Solar/Wind/Biomass/Small Hydro	No
6	Grants/Subsidies/Incentives related to Capital / Investment Tax Credits	No
7	Incentives Linked to Generation/Production Tax-credits	No
8	Income Tax Holidays/Exemptions	No
9	Trade-related Incentives	No
10	Customs Duty Exemptions	No
11	Absence of Local Content Requirements	No
12	Other Tax Exemptions (VAT, Excise etc.)	Yes[3]

Clearly, according to the World Bank Criteria, Georgia has significant work to do in regard to the legal and policy support for RE.

[2] A Government resolution was issued in 2008, establishing a development process specifically for certain hydropower investments, setting forth some limitations on sales during winter months, bank guarantees as a placeholder to hold the investment. It does not cover access to the grid, power purchase obligation, feed in tariff.

[3] There are VAT exemptions for equipment that was financed under concessional terms, and for sales of electricity from newly created power plants.

4.2 Renewable Energy Legal Framework Needed in Georgia

It is anticpated the primary legislation will be a standalone law concerning renewable energy to be finalized in 2013, ("RE Law").

RE Law and related policy will be set forth according normative acts of Georgia. Normative Acts are divided into legislative normative acts of Georgia and sub legislative normative acts, which, together, form the legislation framework. Legislative normative acts are primary legislation while sub legislative normative acts represent secondary legislation.

The types of primary legislation in Georgia are:

a. The Constitution of Georgia; the Constitutional Law of Georgia;
b. An Organic Law of Georgia;
c. Laws of Georgia, Decrees of the President of Georgia, lations of the Parliament of Georgia.

Sub legislative normative acts of Georgia are the Orders of the Ministers, Resolutions, Regulations, etc. For example, resolutions of GENRC are sub legislative normative acts. Legislative normative acts have prevailing legal force over sub legislative normative acts. A sub legislative normative act has to specify the legislative normative act that serves as the basis of which the sub legislative normative act was issued.

The procedure for the adoption of the primary legislat is the following: once the Law is drafted it has to be circulated among several Ministries. The Ministries are given time to review the draft and comment on it. Then the final draft is sent to the Cabinet of Ministers. When the draft is ready at the Cabinet of Ministers, it is submitted to the Parliament of Georgia. Then the Parliament Committees start reviewing the draft Law. Once the internal reviews are finished the hearings take place. After the third reading of the Law, the Law is nt to the President of Georgia for its signature. The President has a right to veto the draft law or make changes and send it back to the Parliament within 7 days. Parliament may accept the changes and submit the Law back to the President for signature within 7 day term. When the Law is signed during 24 hours it is published in the Official Gazette – "Sakanonmdeblo Matsne". The Law enters into force on the day of its publishing or another date specified.

The Parliament sessions last for three months. Autumn sion starts in September and finishes by the end of third week of December and spring session starts in February and finishes by the end of third week of June. It is also possible to hold extraordinary sessions but the latter depends on the urgency and state interest in the Law which has to be adopted.

For RE, below are presented the relevant issues, and recommended handling, which falls either into primary or secondary legislation.

RE Issue	Primary Legislation	Secondary Legislation
Targets Amounts or percentage supply from RE	? Will be an obligation under the RE Law	
National Action Plan for developing for RE	? Will be an obligation under the RE Law	? Action Plan itself
Municipal Action Plans for promotion of Renewable Energy		? Public Service Obligationsevel
Public Service Obligations, that energy purchasers get a minimum amount of supply from RE		? Would be a GoG resoultion or from GNERC
Supporting schemes, such as allocating state-owned land to projects, Feed-in Tariff		? Should be Action Plan
Expression of Interest/MOU procedures		? GoG Resolution
Guarantee of Origin		? Would be a GNERC resolution
Responsible authorities / administrative procedures, i.e., roles of GoG ministries		? Action Plan, GoG resolution
Priority access to grid	? Obligation under RE Law	? Covered in Market Rules, need sto be amended; a GNERC responsibility
Reporting	? Obligation under RE Law	? May be done by Analytics Department in MoE

5.0 EU Requirements

Georgia requested to join the Energy Community in January 2013. Discussisons were held and now GoG is waiting for the Energy Community to provide more specific guidance in the form of an "Energy Road Map." The Energy Road Map will concern all aspects of legal and regulatory energy framework (including RE), such as generation, tranmission, energy for transport, energy efficiency, and other topics.

The following points are key elements of the Energy Community, with which Georgia will have to comply, as it relates to RE.

a) Directive 2009/28/EC of the European Parliament and of the Council, 23 April 2009, on the promotion of the use of energy from renewable sources.
   i) Requires the EU as a whole to achieve 20% usage of renewable energy by 2020. This is an RPS requirement as noted above. As Georgia will begin negotiations with Community, each country's target depends on individual country case and data (GDP, natural resources, etc.). Therefore each country's target is the subject of negotiation.

ii) Calls for each country to adopt a National Renewable Energy Action Plan.
iii) Joint cooperation between EU states and states outside EU. Between EU states, there can be statistical transfers between Member States, for the purpose of calculating the share of energy from renewable sources. Notes that this statistical transfer may ultimately have an important benefit for Georgia due to its abundant hydro. Even without Georgia being a full member of the EU, the directive states that “One or more Member States may cooperate with one or more third countries on all types of joint projects regarding the production of electricity from renewable energy sources.”
iv) Ensure that origin of electricity produced from renewable energy sources can be guaranteed.
v) Ensure access to the grid and priority or guaranteed transmission for renewable energy generation to reach market
vi) Priority dispatch of renewable energy
vii) Transmission system provide cost and timing to proposed renewable projects
viii) Biannual reporting on progress on renewable sources to be submitted until December 31, 2021.

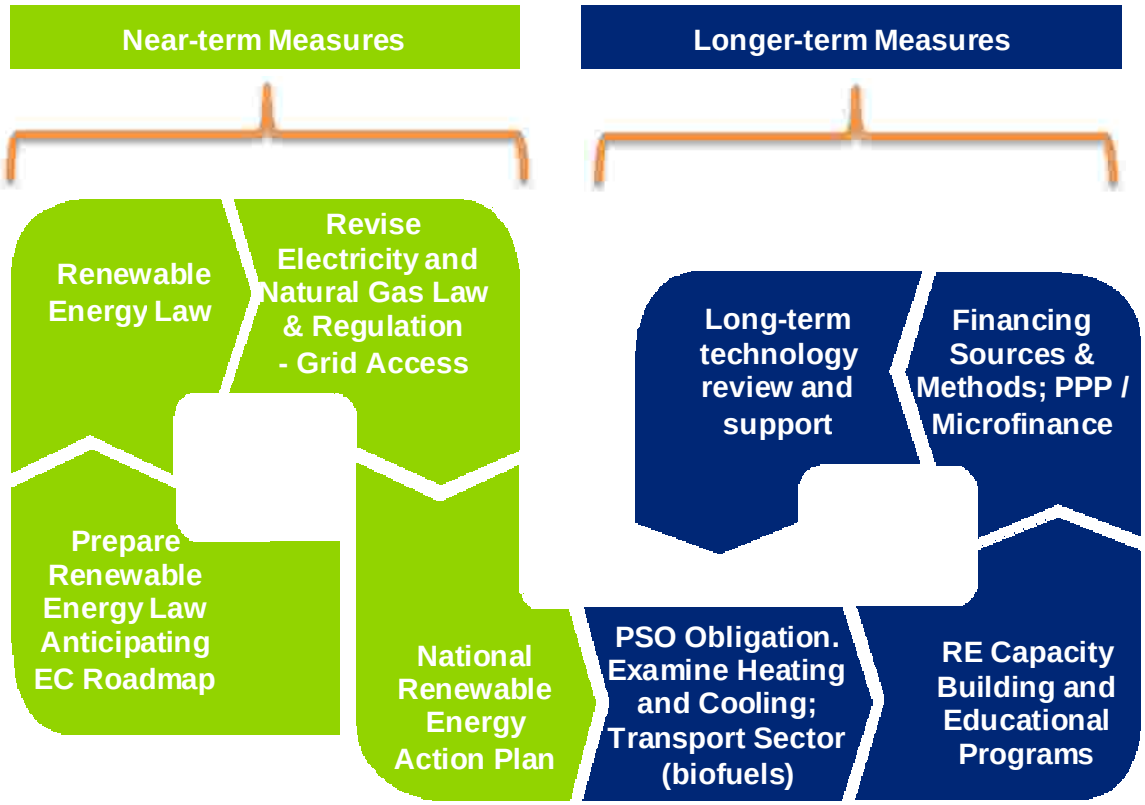
b) Directive 2009/29/EC of the European Parliament and of the Council, 23 April 2009, to improve the and extend the greenhouse gas emissi llowance trading scheme
   i) The purpose of the directive is to “prevent dangerous anthropomorphic interference with the climate system.”
   ii) Affirms the 20% target of using renewable energy
   iii) Establishes the concept of tradable renewable energyneeding definitive“certificates of origin.”
c) European Parliament legislative resolution of 17 December 2008 states that “Imported electricity, produced from renewable energy sources outside the Community, may count towards Member States' targets.”

6.0 Road Map for Renewable Energy in Georgia

Renewable energy planning requires expertise in the spheres of legal, financial and economic matters. As it regards secondary legislation necessary to implement EU framework with respect to, the MoE and GNERC must each have specialized expert knowledge on EU legislation as each must complete diff gislation compliant with EU energy acquis. More information on this will be known upon completion of the final Energy Community roadmap agreed between the GoG and the EU.

6.1 Five-Year Road Map

The Road Map presented below is meant to indicate general priorities. In practice, some tasks may proceed on a parallel execution.



6.2 Next Year Road Map

Some near term actions 2014-2015 for Renewable Energy are:

a) MoE drafts primary legislation in consultation with key stakeholders. Most critical issues are:
   i) Need to define “renewable energy” by technology.
   ii) Government obligations, such as National Renewable Energy Action Plan
   iii) Guarantee of Origin that GNERC would administer
   iv) Priority dispatch, curtailment limitations, access to the export line to Turkey

v) The categorization of large hydro and small hydro should be established (i.e., above 100 MW is large hydro and 100 MW and below is small hydro.

b) GNERC sets up application process and registry for Guarantee of Origin
c) MoE conduct long-range market study of economic opportunity to add modest hydro storage so as to develop flexible dispatchable hydro power
d) GNERC explore end-user green energy option
e) MoE explore public private partnerships so investors can join project at lower risk later; develop a planning database of projects in the pipeline
f) MoE setting up a RPS, in totality for renewable and by technology
g) MoE begin drafting Action Plan consistent with EU Directives
h) GNERC review framework for licensing RE:
    i) Assurance that only power plants are built under market-based, arms-length, freely-contracted PPA's, or for overall system reliability under appropriate process , to protect Georgian ratepayer. This is to prevent "sweetheart" deals negotiated not transparently.
    ii) One regulatory permit, i.e. consider a "one-window" framework for permitting that establishes a unified organization for application, project selection, auctioning sites, and coordinating permitting.
    iii) A decision within a specific time frame.
    iv) Ensure that there is a full opportunity for open participation in workshops by general public and by special interest groups.
i) GNERC and MoE should correlate the process for energy project permitting with other laws and amend laws regarding, for example, environment, construction, labor, and taxation, local content, in order to streamline project permitting and accelerate bringing projects online. Strengthen the requirements for performance if a developer is awarded rights to a site.
j) MoE undertake optimization and management of energy production, accounting for the needs of other water users: agriculture and water supply.
k) MoE assess linkages to university programs and/or other opportunity for specialized training in renewable energy technologies and hydroelectric plant operations, to retain and employ local Georgian skilled professionals, evaluate and possibly set up educational Centers of Excellence, akin to the Azerbaijan State Oil Academy.
l) MEPNR carry forward the previously done analyses of carbon credits as a potential financing tool for HPP investments in Georgia and of the EU as a potential market for Georgian hydropower which indicates the following necessary and useful tasks.
    i) Develop a clear road map for developers to use in monetizing carbon credits. There is some evidence that a developers have not been able to navigate the steps needed in a timely manner with the appropriate parties.
    ii) Training on: transaction structuring, EU Emissions trading schemes, compliance markets, voluntary markets, working with the Energy

Community, accessing KfW Carbon Fund and other sources, and implications of bi-lateral and third-country trading.

iii) Support projects with an information hub, and project tracking support, making a cell within the existing Climate Change Division of the MEPNR as a “one-stop shop.” This would include a contact information network for ensuring that all possible sources of carbon revenue are tapped.

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