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USAID ENERGY PROGRAM

# RENEWABLE ENERGY SUPPORT SCHEME

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8 May 2018

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# DATA

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## ACRONYMS

CDM	Clean Development Mechanism
CFD	Contract for Difference
CPPA	Corporate Power Purchase Agreement
EnCT	Energy Community Treaty
ETS	Emission Trading System
EU	European Union
FiT	Feed in Tariff
FMGC	Fast Moving Consumer Goods
GEL	Georgian Lari
GoG	Government of Georgia
GWh	Gigawatt Hour
HPP	Hydro Power Plant
IPP	Independent Power Producers
JSC	Joint Stock Company
kWh	Kilowatt Hour
LCCC	Low Carbon Contracts Company
MW	Megawatt
MWh	Megawatt Hour
PPA	Power Purchase Agreement
PPP	Public Private Partnership
REC	Renewable Energy Certificates
RPS	Renewable Portfolio Standard
TWh	Tera Watt Hour
USAID	United States Agency for International Development
USD	United States Dollar
VAT	Value-Added Tax
VRE	Variable Renewable Energy

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## INTRODUCTION

The purpose of USAID Energy Program is to: (1) support Georgia in energy market development per Georgia's obligations under the Energy Community Treaty (EnCT), (2) build the capacity of the Government of Georgia (GoG) and relevant institution(s) to evaluate the fiscal and long-term impacts of regulatory changes, (3) promote energy investments, primarily in Variable Renewable Energy (VRE) development, (4) to support integration of non-hydro renewable energy into the power system, and (5) provide strategic advisory services to the GoG to increase Georgia's energy security.

Recently Georgia joined European Energy Community undertaking obligation to implement mandatory reforms in energy sector in compliance with European Union (EU) Energy Aquis. Respective Directives and Regulations related to renewable energy are to be implemented by 2019. Renewable Energy Sources (RES) Directive 2009/28/EC establishes a common framework for the production and promotion of energy from renewable sources and also refers to a target calculated according to the share of energy from renewable sources in gross final consumption. It's a requirement for member countries to develop National Action Plans. These plans will also establish procedures for the reform of RES planning and pricing schemes and access to electricity networks and promoting energy from renewable sources. Priority access to the grid from energy produced by renewables is preferable. Supporting schemes for developing renewable energy sources should also be set.

One of the main objectives of USAID Energy Program is to support Georgia's efforts to facilitate increased investment in power generation capacity as a means to increase national energy security and facilitate economic growth. Improved legal and regulatory framework that complies with European requirements and encourages competitive energy trade, will serve as the basis for investment attraction in the sector as well.

Therefore, considering the developments in energy sector of Georgia and tight timeline of implementing the undertaken obligations, USAID Energy Program actively supports GoG providing recommendations in the reform making process.

# RENEWABLE ENERGY SUPPORT SCHEME

## POTENTIAL OF RENEWABLE ENERGY RECOURSES IN GEORGIA

Development of renewable resources is a key to undertaking climate change and deploying cleaner sources of energy. Georgia is remarkably rich in hydro-power resources<sup>1</sup> (~32TWh), also having potential of wind (~5TWh), solar (~ 60-120GWh), biomass (~3–4TWh) and geothermal (~0.8 GWh) resources, which can be used for creation of additional capacity by means of domestic and foreign investments. Rational development of the local renewable energy delivers many benefits to the country. It enables a diversity of energy base, increases energy security and makes cleaner and reliable power affordable. Development of renewable energy gives an opportunity to reduce gas emissions and air pollution, mitigating climate change and benefitting human health. Additionally, renewable energy can drive economic growth and development, attracting investments and supporting national transitions to clean energy future.

## RENEWABLE ENERGY INCENTIVES

It is vital to improve investment climate through creation of a stable, clear and non-discriminatory legal basis. The significant issue is the formation of incentives that create the necessary enabling environment for scaling of cost-effective renewable energy generation. Smart incentives encompass different ways to encourage clean energy. They set a predictable background that improves the competitiveness of renewable energy and supports transparent expectations for future profitability, which is critical for attracting financing. Well-designed incentives shall consider periodic review and evolve to meet changing market conditions.

The approach reflects the objectives of the Sustainable Energy for All Initiative— achieving universal access, accelerating improvements in energy efficiency, and doubling the global share of renewable energy by 2030. Each country determines its own path for achieving its energy goals, and that each country's transition to a sustainable energy sector involves a unique mix of resource opportunities and challenges, prompting a different emphasis on access, efficiency, and renewable energy.

Often, support mechanisms (e.g., incentives) play a large role in the economics of renewable energy projects, especially compared to traditional power generating technologies. Support mechanisms for different types of renewables can take many forms, including direct subsidies, tax or investment credits, or favorable Feed-in Tariffs (FiTs). Many countries set strict criteria for new renewable projects to qualify for financial support. Such criteria will differ from country to country and may also vary based on a project size.

Smart incentives are bundled to achieve optimal impacts in terms of cost, attraction of investment and operational integration, and constantly evolving to adapt market conditions. That is a really important point to consider that, if these incentives don't constantly evolve, they won't drive the market as intended.

In most cases, direct or indirect financial incentives are still required to increase the commercial attractiveness of VRE projects so that there is sufficient investment in new projects to meet national goals for renewable energy production. Incentives are generally offered at the national level.

## TYPES OF INCENTIVES MECHANISMS

This document provides an overview of the several types of renewable energy support mechanisms used by various governments; examples of transition countries with relevant experience; and their applicability to Georgia (Annex 1). The relative advantages and conditions of different energy policy frameworks vary widely between countries and regions.

**Tax incentives** can be used by a project owner to offset capital costs or profits, or to reduce specific taxes such as VAT (Value-Added Tax) or import duties. Accelerated depreciation is another option intended to attenuate the high capital costs of renewable energy projects.

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<sup>1</sup>Source: Ministry of Development and Sustainable Development of Georgia, Energy Department. [www.energy.gov.ge](http://www.energy.gov.ge)

**Financial incentives** such as FiT's or tax breaks, which vary by country and sometimes by regions within countries, have a strong bearing on the financial viability of a project. Such incentives could outweigh the costs associated with one or more of the site selection constraints. In countries where there are significant incentives (i.e., high FiTs) that override otherwise very unfavorable economic conditions, developers should be cautious and consider the sustainability of those incentives. The potential impacts on the project should be considered in case of withdrawal of these incentives at any stage. It should be noted that incentives are not site-specific but are typically dependent on the country or state in which the project is located.

**Regulatory** frameworks and specific types of incentives/support mechanisms for the development of RE projects, such as preferential tariffs and other direct and indirect financial supportive schemes, have an important impact on the financial viability of the project, as they affect the revenue stream. Power Purchase Agreements (PPAs) specify the terms under which the off-taker purchases the power produced by the Renewable Energy plant; this is the most important document to obtain financing.

A widely used **Operational incentives** includes “must take” requirements – especially for wind and solar energy, because they provide power only when the resources are available and frequently contracted as “must-take” generators, where their output is always used when it is available.

**Land and Network Incentives** - land acquisition and grid connection issues are basic conditions for project development. Project land must be purchased or leased for longer than the debt coverage period. A land grant or its use privileges is a gift of real estate –usage– made by a government or other authority as an incentive.

The grid availability is the percentage of time that the network is able to accept power from the VRE plants. This may have adverse effects on the economics of the project. The substation and transmission line capacity need to be aligned with the capacity of the plant being developed.

The proposal on Renewable Energy Incentives Mechanisms in details is provided in Table 1, and Annex 1.



# ANNEX

## RENEWABLE ENERGY INCENTIVES SCHEME

#	Incentives	Description	Applicability to Georgia
<b>Tax Incentives</b>			
1	Accelerated depreciation	Accelerated depreciation is the depreciation of fixed assets at a fast rate early in their useful lives. This type of depreciation reduces the amount of taxable income early in the life of an asset, so that tax liabilities are deferred. This method is widely used in various countries.	Both solar and wind energy generation units are capital intensive and globally in every country this benefit has allowed not only foreign investors but encouraged local industrial groups to invest in the sector.
2	Tax credits	A tax credit is a tax incentive which allows certain taxpayers to subtract the amount of the credit they have accrued from the total they owe the state. It may also be a credit granted in recognition of taxes already paid.	In case of Georgia, the tax credit scheme can be introduced by GoG to encourage investment in Non-Hydro renewables. (this will differ from each different technology and will only be a success if time bound)
3	Tax exemptions	Tax exemption generally refers to a statutory exception to a general rule rather than the mere absence of taxation in particular circumstances, otherwise known as an exclusion. Tax exemption also refers to removal from taxation of a particular item rather than a deduction.	A 10-year tax holiday is a standard practice in Solar and Wind globally and this allows investors to look at investments, especially in Georgia where solar and wind generation will be low. Tax exemption will allow non-hydro investments to survive.
4	Customs and related exemption	Import of the goods considered by grant agreement according to the decree of President of Georgia; Import of the goods that are funded by grants or governmental authorities of a foreign country and/or by a preferential credit issued by an international organization that comprises at least 25 percent of grant element.	100% Capex tax exemptions should be allowed on a complete system import in Georgia, and there should be a clear mention of items and the benefit should only be allowed on a system or project by project basis.
5	Property tax financing	According to the Tax Code of Georgia, all resident enterprise/organization pay a tax on assets recorded as the principal means on its balance, uninstalled equipment, uncompleted construction, as well as leased property. Non-resident enterprise on the property being in the territory of Georgia pay a tax on assets recorded as the principal means on its balance, uninstalled equipment, uncompleted construction, as well as leased property (including lease, rent, usufruct or other similar agreement issued to the property in the territory of Georgia). Example: Texas local government Renewable Energy loan program.	
<b>Financing</b>			
6	Loan guarantees	Loan guarantees are examples of a public instrument, they offer protection to financiers against risks and make it possible to mobilize commercial financing for the necessary terms and at acceptable costs.	The Central bank of Georgia should offer Loan Guarantees to local players, this will enable local bakes to explore smaller projects along with larger units. Globally this has been very effective in kick starting small scale solar rooftop schemes, small scale bio gas and bio mass schemes.
7	Soft Loan	Soft loans—i.e. those with a below-market interest rates or extended tenor—are sometimes made available, especially in the early stage of technology deployment by government-backed institutions.	For Georgia, if the GoG offers a state debt instrument for 15 years plus with an interest rate below 5 % this will allow the investors to invest and encourage local investments too.
8	Capital grants	Capital grants from public sources reduce the upfront financing burden and can stimulate interest in a new market. These options are used at the early stages of RE development.	The GoG could identify certain backward (economically) regions and allow a certain capital grant to boost investment.
9	Surcharges to pay for Renewable Energy	European Commission has endorsed under European Union (EU) State aid rules to progressively apply renewable energy surcharges to certain self-suppliers of electricity. The surcharge reform will contribute to lower electricity bills for consumers, in a sustainable way for existing self-suppliers. (EU Commission approves a progressive application of renewable energy surcharge for certain self-suppliers of electricity in Germany, Dec. 2017)	Contract for Difference (CFD) under the draft Law on Energy - surcharge of public service obligation

10	Special Purpose bond programs	Green Bonds – Fixed income, liquid financial instruments that are used exclusively in renewable energy, energy efficiency, and other climate-smart projects. Multilateral development banks, government agencies, municipalities, and more recently utilities and corporations finding ways to use green bonds.	The GoG can introduce a xxx MW bond and pass the control to Department of Energy to monitor and encourage non-hydro investments, a lower yield coupon with a long term vision will make a project success.
<b>Contractual &amp; Regulatory</b>			
11	Feed in Tariffs (FiTs)	A FiT is a predetermined price for every unit of electricity generated by a Renewable Energy power plant, paid through a long-term contract. Typically, projects must meet certain eligibility criteria and receive authorization from a government body to receive the FiT (and usually preferential grid access as well); smaller projects may automatically receive the FiT up to a certain maximum level of MWs (maximum capacity).	GoG should introduce a FiT for technology specific as soon as possible and make it an obligatory instrument which will be capped up to a xxx MW milestone, this will encourage a greater embedded generation in peak time.
12	Green Fees	“Green Fee” (The Renewable Energy Charge) is a fee paid by electricity consumers to finance the subsidy paid to renewable energy producers. The Renewable Energy Charge is paid by all consumers in proportion to their consumption of network services. The Renewable Energy Charge is listed separately on electricity bills so that electricity consumers can see exactly how much is paid in subsidies for renewable energy. The Renewable Energy Charge is calculated by Network Operator.	All the citizens of Georgia and especially the tourist should be happy to pay a 1 GEL (Georgian Lari) per day per person or 1 USD per day per person as a fee, this will allow the civic body to invest in non-hydro projects; or give them a cushion to pay a premium to investors supplying them with non-hydro energy.
13	Consumer directed choice of Renewable Energy	Green Energy Option, a mechanism which shall provide end-users the option to choose Renewable Energy as their source of energy. A policy mechanism which gives consumers the option to decide where their electricity comes from—can potentially balance the shift of the economic burden by transitioning from a uniformly charged electricity rate to equitably charging consumers based on their willingness to pay for renewably sourced energy (Manila example)	GoG will not be able to introduce this until the market is open and there is a choice of utility providers to choose from or there is a law passed which compels the utility in this case JSC Telasi to be obliged to offer a choice.
14	Corporate Power Purchase Agreements (CPPAs)	Corporate renewable PPAs are contracts that contain the commercial terms of the purchase of renewable energy, such as the contract period, point of delivery, delivery date/times, volume, price and product.	A CPPA is generally referred to as Private Wire and this is a very effective tool to encourage investments either by a 3rd party or the high energy users themselves.
15	Reverse Auction	Reverse auctions for Independent Power Producers (IPPs) involve the competitive procurement of energy, whether at a specific site or without specifying where a new plant must be built.	Example: Tskhenistskali Hydro Power Plant (HPP)
16	Public Private Partnership (PPP)	PPP model is a profitable agreement between a public sector institution/municipality and a private party, in which the private party assumes substantial financial, technical and operational risk in design, financing, building and operation of a project. In case of insufficient funds in public sector, the private sector will cover most of the costs for the project (60/40%). PPP is also perceived as a replacement model of privatization. PPP model gives a government the ability to reserve the ownership of strategically important sectors.	The GoG is working on drafting PPP Law. The priorities will be determined under the PPP law.
17	Market-based Instruments	These accompany quantity-based mechanisms, such as renewable portfolio standards or quota obligations. Certificates associated with renewable energy production are traded on a market and result in additional revenue for renewable energy producers. Examples include tradable renewable certificates or carbon certificates. A renewable energy credit—also sometimes referred to as a renewable energy certificate or green tag—is created for each megawatt-hour (1 MWh, or 1000 kWh) of renewable electricity generated and delivered to the power grid. When renewable energy is generated by wind, solar, biomass, geothermal, and certain hydropower sources, two things are created: (1) the actual electricity, and (2) the environmental benefits associated with the fact that the electricity was produced without burning fossil fuels like coal or natural gas. Renewable Energy Certificates (RECs) are the way those environmental benefits or “attributes” are tracked and accounted for.	
18	REC	Renewable Energy power plants will be awarded RECs based on its generated energy or installed capacity.	Renewable Energy Certificates are very much possible if the GoG recognizes international investments in non-hydro sector, and only

			issue REC for non-hydro, this will allow large Fast Moving Consumer Goods (FMGC) manufacturers like Ferraro, Uniliver, etc. to invest in the country and later swap REC against their carbon footprint (Hospitality sector can be targeted).
20	Renewable Portfolio Standards (RPS)	A renewable portfolio standard is a regulation that requires the increased production of energy from renewable energy sources, such as wind, solar, biomass, and geothermal. Market-based instruments accompany quantity-based mechanisms such as renewable portfolio standards or quota obligations.	Sector based introduction with a cap on quota will help this for Georgia.
21	Emission trading system (ETS)	The emissions trading system (EU ETS) is a cornerstone of the EU's policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively. It is the world's first major carbon market and remains the biggest one. "The ETS operates in 31 countries (all 28 EU countries plus Iceland, Liechtenstein and Norway). Limits emissions from more than 11,000 heavy energy-using installations (power stations & industrial plants) and airlines operating between these countries covers around 45% of the EU's greenhouse gas emissions."	Clean Development Mechanism (CDM) is meant for trading emission reduction credits between the developing and industrialized countries to meet emission targets under Kyoto Protocol. Georgia is the party to the Kyoto Protocol.
22	Contract for Difference (CFD)	The purpose of CFD is to incentivize investments in new low-carbon electricity generation by providing stability and predictability to future revenue streams. CFD is a long-term contract between an electricity generator and Low Carbon Contracts Company (LCCC). The contract enables the generator to stabilize its revenues at a pre-agreed level (the Strike Price) for the duration of the contract. Under the CFD, payments can flow from LCCC to the generator, and vice versa. Under the CFDs, when the market price for electricity generated by a CFD Generator (the reference price) is below the Strike Price set out in the contract, payments are made by LCCC to the CFD Generator to make up the difference. However, when the reference price is above the Strike Price, the CFD Generator pays LCCC the difference. (UK Example).	CFD under the draft Law on Energy - surcharge of public service obligation
23	Net metering of Renewable Energy	Also referred to as "behind the meter" pricing, net metering allows the customer to sell electricity back to the grid, typically at the same rate as a utility tariff, and pay only for the net amount of grid power consumed.	Under the Law of Electricity and Natural Gas, the Net Metering for Renewable Energy is already in force.
<b>Operational</b>			
24	"Must take" requirements	A widely used Operational incentive includes "must take" requirements – Because wind and solar provide power only when the resources are available, they are frequently contracted as "must-take" generators, where their output is always used when it is available.	Can be difficult to integrate a large amount of "must-take" generation into the grid because its availability is uncertain and constantly changing.
<b>Land &amp; Network</b>			
25	Land Purchase Price	To promote the Renewable Energy projects, GoG provides state land for free or symbolic price on the agreed period	Widely used practice in Georgia.
26	Exclusive land rights		
27	Network connection	The grid connection will generally be carried out by a third party over whom the project developer may have limited control. Close communication with the grid connection contractor is essential to ensure that the grid requirements are met. Where the grid network contains only traditional generation sources there is an additional risk that the grid code requirements for renewable generation will not have been fully established at the time of contract signature. In these cases, certain provisions may need to be included in the PPA.	The GoG can introduce the concept of a Solar park or Wind park, where they identify a certain patience of land and invest in the power evacuation and offer this as an incentive to encourage the market players to invest in specific region, by this the GoG can also counter and co invest in the Grid and manage the variable load really well.

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