Georgian Energy Market, Trading Methods – Current and Potential Models (GEMM -2015)

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Major Legislative Documents Regulating Wholesale Energy (Power) Trade

- Georgian Law on Electric Energy and Natural Gas
- Energy (Power) Market Rules (Order A# 77 of August 30, 2006 by the Minister of Energy of Georgia)
- GNEWRC regulation # 33 of December 4, 2008 on Electric Energy Rates

Subjects of Electric Energy Sector

- Ministry of Energy
- National Commission for the Regulation of Energy and Water
 Supply (GNERC)
- Electricity System Commercial Operator
- Dispatching licensee
- Transmission licensee
- Eligible Companies

Eligible Companies

- Generation licensee
- Regulated power station
 - Small HPP (up to 13 MW)
 - Power station built after <u>August 1, 2008</u>
- Distribution licensee
- Direct consumer
- Importer
- Exporter
- Electricity System Commercial Operator (ESCO)

General Model of the Wholesale Energy Trade



Detailed Model of Wholesale Energy Trade



Wholesale Energy Trade

Based on direct agreements

- Bilateral direct contract is signed between qualified companies
- Contract price depends on the status of the qualified seller of the electric energy (regulated, partially regulated, fully regulated)
- Direct contract requires the dispatcher licensee to register

Through ESCO (balancing electricity)

- Balancing electicity trade by ESCO is carried out according to the standard terms and conditions of the direct contract, which:
- is registered with the dispatching licensee
- is a public document
 - is standard for all participants

Main Principles of Wholesale Energy Trade

- Accounting period 1 calendar month
- The seller of the electric energy is only a generation facility and importer
- The sale of electricity occurs on the seller's bus. Accordingly, transportation costs shall be undertaken by the buyer of the energy. Costs associated with the transportation are the following:
 - Dispatching service cost
 - Transmission service cost
 - Actual average loss in the grid
- The buyer of the electric energy is only the distribution licensee, direct consumer and exporter
- Balancing electricity trading is possible only through ESCO
- Balancing electricity trading is not profitable for ESCO

Financial Model of Energy Wholesale Trade



Electricity for balancing

Electricity for balancing is:

In case of electricity seller:

- The difference between the amount of electricity supplied to the bus by the generating companies and the amount of electricity sold (supplied) as per the direct contract

- The difference between the amount of the electricity imported by the importer (including ESCO) and amount of electricity sold (supplied) as per the direct contract

> - The amount of electricity supplied by the newly built hydro electric power station to the bus which was mandatory for ESCO to purchase (except when ESCO is the one to export this energy)

In case of the electricity buyer:

- The difference between the consumed amount of energy by the distribution licensees, direct consumers and exporters and the amount of energy purchased by them as per the direct contract



PRICE OF THE ELECTRICITY SOLD TO ESCO

PARTIALLY REGULATED HYDRO ELECTRIC POWER STATION



The formation of balancing electricity price for sale

The formation of the balance electricity price for sale happens according to the <u>weighted</u> <u>average price</u> of the balance electricity purchased by ESCO

Annual weighted average price of balance electricity to be sold by ESCO, 2007 - 2011





Indicators of Wholesale Electricity Trading



□ BALANCING ELECTRICITY □ DIRECT CONTRACTS

Trading with Guaranteed Capacity

- > The subjects of guaranteed capacity trading are:
 - > Guaranteed capacity sources
 - > ESCO
 - Guaranteed capacity energy buyers
- Guaranteed capacity sources are established by the Government of Georgia by regulation # 193 issued on July 15, 2010
- > Guaranteed capacity ensures the stability of energy system, safety and reliability
- > Guaranteed capacity allows, when necessary, to balance the supply and demand
- Trading with guaranteed capacities happens in a centralized manner, through ESCO, according to the following standard terms:
 - > With the registered dispatching licensee
 - *Is a public document*
 - > Is standard for all the participants
- Selling guaranteed capacity by ESCO is not considered an activity oriented to make a profit

GUARANTEED CAPACITY SOURCES





Eligible company buying guaranteed capacity must pay for the guaranteed capacity in proportion with the total consumption and its actual export consumption or in proportion with export



Regulated Generators (RG)

- Supplying base energy at a low rate to the rate-class customers;
- Retailing energy to consumers according to the demand at the rate approved by GNERC through direct annual contracts also approved by CNERC;
- Selling additional energy to the transmission grid operators to compensate for additional services and losses;
- Selling, exchanging and/or purchasing extra energy (if holds a license for trading) in the internal or external markets.

Independent producers (IPPs)

- ✓ Can select a market;
- Can sell energy to traders, retailers or eligible consumers;
- Can sign long-term contracts and/or short term contracts in a balance market;
- In case of trading with the electric energy, they must obtain a trading license.

Small power plants (Sm. HPPs)

- Can sell energy to traders at open contract price;
- Sell to retail consumers at a price approved by GNERC;
- Sell to the transmission or distribution system operators to cover the system losses as per contracts approved by GNERC.

Small hydro electric station consolidator

- Provides the marketing of small and medium size projects for regulated generation, traders and eligible customers;
- Is authorized to trade with eligible consumers, distribution system operators and transmission system operators;
- Is authorized to sell electric energy to retail customers at a price approved by GNERC.

Traders (Traders)

- Must hold a trading license, except for the right to sell energy to rateclass customers
- Can buy and sell energy in local and foreign markets;
- Locally can buy energy from RGs (surplus), IPPs and Sm.HPP and sell energy to eligible retail consumers, TSO or DSO in order to cover the losses;
- IPPs may be traders and can sign long term contracts or short term deals in a balance market.

Retail Suppliers (RPS)

- Supply electricity only to the rate-class customers as per the contract approved by GNEWRC;
- Buy energy from regulated generators (RGs), independent producers (IPP) and traders (Traders);
- Rates for retail suppliers may be approved by GNEWRC.

Eligible Consumers (EC)

- Have the right to purchase electricity from any source;
- ✓ By 2017 all consumers will be eligible.

Rate-Class Customers (TC)

- Are connected to the distribution grid and buy energy from retailers at a price regulated by the commission;
- Eligible consumer has the right to resume or stay as a rate-class customer;
- Commission will also select the end supplier.

Service Providers of the Market

Transmission system operator (TSO)

- Transmission system operator provides the safety of energy system in a real time;
- Balances supply and demand between the generation facilities and consumers;
- Ensures that backup energy is accessible to avoid imbalance;
- Will purchase additional service and manage contingencies;
- Will perform load planning for short, medium and long term periods and planning of the transmission system for a 10 year period;
- Will purchase energy to make up for the losses;
- Will receive compensation for the service provided to the market participants at the rate approved by the Commission.

Transmission system companies (TransCo)

- Are responsible for a physical functionality of the transmission system by their assets;
- Connect generation facilities and distribution grid to the transmission grid;
- ✓ Make investments in accordance with the anticipated loads in the grid.

Service Providers of the Market

Market Operator (MO)

- Ensures the operation of the balance market in order to balance electricity buying and selling contracts;
- Develops balancing tools in order to organize the proposals of energy producers and buyers and determine the market price of the energy;
- In prospective, balance market will also be involved in the energy trading;
- Calculates the energy repayments and provides information to clearing houses;
- Market operator will be licensed by the Commission.

Market Clearing House (MCH)

- Is responsible for the transparency of trade in the market;
- Must track all trading operations and ensure that due repayments be made;
- Must perform effective accounting, repayment and risk management control.

Service Providers of the Market

Distribution System Operator (DSO)

- Ensures that the supply of electricity and grid service is functionally divided;
 - Ensures that the distribution of energy functions appropriately;
 - Ensures that the hook-up and metering services to the consumers is carried out on a non-discriminatory basis;
 - Ensures that energy received from the distribution system is supplied;
 - In its area, provides the customers, auto-generation and generation facilities with the service;
 - Shall satisfy the service standard requirements;
 - Buys energy to cover the losses in the grid;
 - Licensing of DSOs and establishment of rates are carried out by the Commission.

Public Service Obligations and Certificates of Origin (PSO)

- For the purposes of public well-being reflecting certain costs in the rate;
- The repayment of costs will be the responsibility of rate-class and eligible customers;
- The regulation of the certificates of origin;
- Methods for trading with renewable energy certificates.

Subjects of Electricity Market, Their Roles and Functions

Ministry of Energy and Natural Resources of Georgia

Energy Policy and Strategy



Roles and Functions of the Commission

- Implementation of energy strategy in the energy sector:
- ✓ Monitoring energy structure and its performance;
- Establishment of rates, fees and payments in the fields of transmission, distribution and supply (based on the methodology);
- Issuance of licenses to market participants, their renewal and revocation, as well as monitoring compliance with licensing requirements;
- Approving the grid code, its implementation, monitoring and making amendments;
- Approving the rules for market operation, its implementation, as well as monitoring and making amendments;
- Approving the standards for the activities of market participants and their monitoring;
- Approving regulated contracts signed among the service providers in the market.

Roles and Functions of the Commission

- Approval and monitoring of technical and safety standards;
- Reviewing and resolving disputes between the licensees and customers;
- Participating in the international and regional Cooperative undertakings in the electricity field;
- Approving the distribution grid code;
- ✓ Commission powers must comply with directive 2003/54/ EC of the EU;
- In order to implement the model of the year of 2015, the Commission needs to review and approve 24 documents of new nature.

THANK YOU FOR YOUR ATTENTION