GEORGIA ENERGY REGULATORY PARTNERSHIP

TECHNICAL ASSISTANCE ON ELECTRICITY DISTRIBUTION SYSTEM OPERATIONS AND DEVELOPMENT OF GRID CODE

CONSULTANT'S FINAL TECHNICAL REPORT

December 2015
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List of Acronyms

DAO	Distribution Asset Owner
DSO	Distribution System Operator
EU	European Union
GNERC	Georgian National Energy and Water Supply Regulatory Commission
HPEP	Hydro Power and Energy Planning
NARUC	National Association of Regulatory Utility Commissioners
RES	Renewable Energy Sources
TOD	Time-of-Day
TSO	Transmission System Operator
USAID	United States Agency for International Development
VAT	Value Added Tax

1. Introduction

Under cooperative agreement # REE-A-07-00050-00 between the National Association of Regulatory Utility Commissioners (NARUC) and the United States Agency for International Development (USAID), a technical assistance is being undertaken with the main objective of assisting the Georgian National Energy and Water Supply Regulatory Commission (GNERC) with the assessment of the legal framework for the regulation of the electricity distribution system and elaboration of the distribution network code.

Under this Technical Assistance, the Consultant is to prepare a report on his review of GNERC's draft Distribution Network Code taking into consideration key issues identified by GNERC and other stakeholders, recommended practices for Georgia, international best practices and the requirements of the European Union (EU)), specifically EU Directive 2009/72/EC. The Consultant is to provide a revised draft of GNERC's Distribution Network Code to be taken into consideration by GNERC for the efficient implementation and enforcement of the provisions of the Distribution Network Code. Key to this undertaking is the development of a Distribution Network Code which covers technical aspects relating to metering, connection to, planning and the operation and use of the distribution system operator's distribution system including all lines and equipment connected to the distribution system over which the Distribution System Operator (DSO) has operational control. As stated in *The Distribution Code of Licensed Distribution Network Operators of Great Britain* (Issue 26 – 01 September 2015), the distribution network code is designed to:

a) Permit the development, maintenance and operation of an efficient, coordinated and economical system for the distribution of electricity;
b) Facilitate competition in the generation and supply of electricity; and
c) Efficiently discharge the obligations imposed on the DSOs by the distribution license and comply with any relevant legally binding decisions of the European Commission and/or Agency for the Cooperation of Energy Regulators.

During the course of this Technical Assistance, the Consultant made two one-week trips to Tbilisi, Georgia (October 19 – 23, 2015 and November 9-13, 2015). During the first trip, the consultant worked with GNERC staff to perform a gap analysis and coordinate a schedule of tasks to be carried out remotely before the second trip to Georgia in November to present his review of the draft Distribution Network Code produced by GNERC. The Consultant's initial trip to Georgia led to an inception report on the DSO legal framework. This final report incorporates the results documented in the Inception report, explains how the various issues were addressed in the revised Distribution Network Code, and includes the revised version of the Distribution Network Code (Annex A). This report also identifies gaps in the DSO legal framework for implementation of retail competition in the electricity sector consistent with EU requirements, along with the sequencing and timing of legal amendments necessary to bring the Distribution Network Code up to EU requirements. Further, in response to a direct request from GNERC, the report identifies key design criteria relating to a net metering policy.

This report is organized as follows:

- ***Section 1*** provides an introduction to the project and this technical assistance;
- ***Section 2*** covers specific issues identified by GNERC and other stakeholders for consideration in the draft Distribution Network Code;
- ***Section 3*** discusses key elements of a net metering policy and makes recommendations for the consideration of Georgian stakeholders;
- ***Section 4*** provides an overview of the Consultant's review of the draft Distribution Network Code; and
- ***Section 5*** provides an assessment of the legal framework relating to the retail component of the Georgian electricity market and sequencing and timing of required amendments.

2. Specific Issues to Address in Georgia's Distribution Network Code

Under the project scope of work, the Consultant is to review all components of GNERC's draft Distribution Network Code and suggest revisions and additions as necessary to make it consistent with international practice and EU requirements. The objective is to develop a Distribution Network Code that can be implemented immediately within Georgia's current electricity market framework, but make it flexible enough to meet EU requirements, and for those situations where it cannot meet EU requirements (i.e., owing to current electricity market design or policy limitations), identify the gaps to be addressed in the future.

In this section 2 of the report, the background describing how GNERC's draft Distribution Network Code was developed is documented, the key issues to be considered in the development of the distribution grid code are identified (by GNERC and the distribution licensees), and key issues related to implementation are addressed.

2.1 Development of GNERC's Draft Distribution Network Code

The GNERC draft Distribution Network Code has four chapters including: connections, planning, operations and metering. GNERC developed the chapters relating to connections, planning and metering; the distribution licensees developed the chapter relating to operations at GNERC's request owing to the specific expertise of the distribution licensees in this area. All chapters have been discussed in detail with representatives of the distribution companies.

Under the USAID-funded Hydro Power and Energy Planning (HPEP) Project, a distribution network code was developed. However, it was completed towards the end of the project, was based on a model from another country and did not include input or feedback from Georgian stakeholders. GNERC reviewed the proposed HPEP distribution network code, but did not feel it

reflected the Georgian situation. For this reason, GNERC did not start with the HPEP version, instead opting to develop its own version taking into consideration distribution network codes in use elsewhere.

The distribution licensees indicated that they developed the operating code chapter of the draft Distribution Network Code based on existing procedures and requirements of the dispatch licensee as defined in the Transmission Network Code. The operating code developed by the distribution licensees was sent to GNERC for review, and GNERC will in turn send it out for review and comment to the dispatch licensee (Transmission System Operator, or TSO), the distribution licensees and other stakeholders as part of the public review process.

GNERC legal staff indicate that for the present, the Transmission Network Code and the Distribution Network Code will be included in a single document. Therefore, there is no need to draft a separate chapter on general conditions or to develop a separate glossary of terms for the Distribution Network Code.

The "*Electricity (Capacity) Supply and Consumption Rules*" is an existing document that will act as a companion document to the Distribution Network Code. It was approved in 2008, and according to GNERC staff, has been functioning quite well. It was developed to serve the purpose of a retail market rules document. There is some overlap between this document and the draft Distribution Network Code as it covers small generator connections to the distribution system, and micro-generators (less than 100 kW) under the ownership of small retail customers and located on customer properties. GNERC has decided that the draft Distribution Network Code should not cover these areas, instead deferring to the Supply and Consumption Rules. This is a valid approach because the Supply and Consumption Rules document will continue to not only be needed, but also expanded to cover additional retail market rules such as customer switching of suppliers, etc., once retail competition is introduced. In the future, when retail competition is implemented and there is a need to modify the Supply and Consumption Rules, the component of the document relating to connections of small and micro generators should be removed, and incorporated into the Distribution Network Code. For the purposes of this Technical Assistance, the Consultant has incorporated small generators in the revised version of the Distribution Network Code to make it easier to incorporate in the future.

2.2 Key Issues Considered in the Review of GNERC's Draft Distribution Network Code

During the Consultant's meetings with GNERC and the distribution companies, a number of issues were raised that relate to legal aspects of the retail component of the electricity sector, and in particular, the Distribution Network Code. These issues are summarized below.

The Supply and Consumption Rules require that all connections of small users (both loads and producers/generators) be constructed by the distribution companies. This means that the distribution companies act as a one-stop shop – designing, permitting, constructing and commissioning the connection. The draft Distribution Network Code requires that all connections of larger users (both loads and producers/generators) be designed by the distribution companies, but construction is the responsibility of the customer. The latter approach is generally favored as it allows the customer the opportunity to connect at lowest cost consistent with distribution company design criteria. If the distribution company offers to construct the connection, it will be forced to come up with a fair cost estimate – otherwise it will not get the work. The problem with this latter approach in Georgia is that there are not many companies who can construct connection facilities that meet quality and design requirements, and that have the capacity to pilot the undertaking through the permitting process. An advantage of assigning full responsibility of the connection to the distribution companies is that it appears more consistent with promotion of small renewable generation alternatives as it makes the connection process far less onerous. Making the distribution company responsible for all aspects of connections is likely the best choice at this stage of Georgia's restructuring effort. The connection code included in Annex A has been edited accordingly.

At one time, there were about 100 small distribution asset owners in Georgia. About 70 of these entities were Government owned (typically municipalities). A number of these entities sold their assets to the distribution companies, but a significant number still exist, and in many cases the distribution licensees have added on to the facilities owned by these entities, in effect, extending the distribution system beyond these assets to supply other customers downstream. These small distribution asset owners tend to spend little money on maintenance, thus negatively impacting the quality and reliability of supply on the distribution network. It would be preferable for these asset owners to transfer/sell their assets to the distribution companies so they could improve the reliability of supply to that experienced elsewhere on the system. However, many of these remaining asset owners have no intention of selling – neither do they intend to spend the money necessary to improve the reliability of their facilities.

These entities are not currently regulated – the law does not recognize them, so there is no legal means available to require them to meet minimum levels of performance. As a result, they continue to hold assets without the responsibilities of maintaining the equipment to provide reasonable levels of supply reliability. Both the distribution companies and GNERC would like this situation resolved. One way to do this would be to modify the Law to require these entities to be licensed by identifying them as a distinct market services group; i.e., distribution asset owners (DAOs), similar to transmission asset owners. The Law could be amended to unbundle the distribution function, replacing "distribution licensees" with "distribution system operators", "suppliers" and "distribution asset owners". The licensing provisions might be onerous enough to encourage the small distribution asset owners to sell their facilities to the distribution

companies, or at the very least, enter into contracts with the distribution companies to guarantee minimum levels of performance; i.e., by maintaining their assets. In either case, there would be a requirement to have DSO-to-distribution asset owner operating agreements.

The Kakheti Energo distribution company is currently in bankruptcy. An operator for the company has been appointed by the Government of Georgia. Owing to its poor financial position, Kakheti Energo is not in a position to undertake proper maintenance, upgrade/install meters, and pursue loss reduction programs. Losses are currently estimated to be as high as 31% (based on software simulations). Kakheti Energo did not submit a tariff application this year. Instead, the Government is paying a direct subsidy to small customers of 4 tetri/kWh on the first two blocks of the residential tariff.[1] The Government is hopeful of attracting an investor to take over, or at least provide a capital infusion, to put Kakheti Energo back on sound financial footing.

The number of distribution system operators (DSOs) appropriate for a country the size of Georgia is a key issue. GNERC generally favors a single DSO as it would make the market less complicated and reduce administration costs. Although the distribution wires business is considered a monopoly, publishing performance statistics for multiple DSOs can establish peer pressure among the DSOs to improve performance. In Georgia, there are three distribution companies with distinct franchise areas and much different customer mixes and densities. Energo Pro Georgia is the largest of the three distribution companies serving most of the country, has a mix of large and small customers, and serves both rural and urban areas. Telasi is the second largest, serves the city of Tbilisi, and has a customer base that is almost exclusively urban with high customer densities. Kakheti Energy Distribution serves the Kakheti Region which has a mix of rural and urban customers. These three distribution companies serve almost 99% of the retail customers in the country.

While it is not clear that there is any advantage to having three DSOs, it is clear that there are currently three distribution companies that all perform distribution asset management, operations and maintenance. All three distribution companies currently perform the DSO function. Taking the DSO function away from any of these entities would not be viewed favorably by the distribution companies. The possibility of two DSOs with Kakheti Energo becoming strictly an asset owner in light of its poor financial position was discussed. However, GNERC believes it desirable to keep the DSO function at Kakheti Energo as it will make it more desirable to a potential investor, with the possibility of bringing with it private sector management expertise to the DSO function. The Consultant is in agreement, and recommends that Georgia continue with the three current DSOs. It is not uncommon to have multiple DSOs. For example, Great Britain

[1] The first two blocks of the residential tariff are discounted, so in effect convey a subsidy to the poor who are assumed to consume less energy than typical residential customers.

currently has 14 licensed Distribution Network Operators owned by six different groups each responsible for a regional distribution service area.[2]

With respect to the retail metering code, GNERC requested the Consultant to pay particular attention to: 1) smart meters and other new technology, and 2) electronic recording meters for metering consumption according to time-of-day (TOD) tariffs. The current version of the Distribution Network Code has gaps relating to both. Georgia does not currently have TOD tariffs, but wants to leave the door open to implementation in the future. If time-of-day tariffs are implemented in the future, it would be necessary to install electronic recording meters with time-differentiated recording capacity, or alternatively, to develop load profiles for use with standard mechanical meters that do not have time-differentiated recording capacity. Electronic meters cost more than standard meters, but use of standard meters for time-of-day tariffs with load profiling has higher administration costs, and requires a load research program as Georgia does not currently have time-differentiated consumption data for its different customer classes. GNERC indicated it would like the Consultant to draft language in the Distribution Network Code that allows for time-of-day tariff implementation in the future. The Consultant has complied with GNERC's request by adding clauses to the metering code (included in Annex A) relating to smart meters and other new technology, and use of electronic meters for metering consumption under TOD tariffs.

GNERC is concerned that there is a gap in the Distribution Network Code relating to priority access to the grid for renewable energy sources (RES). This gap is difficult to address in Georgia currently as there is no renewable energy law or policy.[3] The Ministry of Energy is considering implementation of a net metering policy to promote renewable energy. In fact, the Consultant was asked to make a presentation on net metering program design to staff from the Ministry, GNERC and the Distribution Companies during his second trip to Georgia. Priority access generally relates to priority dispatch, meaning renewable generators are dispatched whenever their facility and fuel supply (i.e., wind, solar, etc.) is available. Dispatch is normally covered in the market rules, rather than the Distribution Network Code. However, the Consultant has edited clauses in the Distribution Network Code, particularly the connection code, to ensure that RES is treated in a fair and non-discriminatory manner.

With respect to the chapter on connections in the draft Distribution Network Code, the only concern of the distribution companies relates to connection of third party generators. For example, Energo Pro has a large generator (i.e., up to 100 MW) on its system whose output it is required to transmit through its distribution system to the transmission network. In this particular

[2] See: www.ofgem.gov.uk/electricity/distribution-networks/gb-electricity-distribution-network

[3] Neither does Georgia have an energy efficiency law or policy.

case, the generator is connected to Energo Pro's 110 kV system. Energo Pro's concern is that the generator uses a fair amount of the available capacity on its system, thus leading to near term expansion and the necessary capital to increase the transfer capacity of its distribution system. It was agreed that the connection code should be written in a manner that allows the distribution companies to recover deep connection costs (i.e., not only the costs of the connection, but also the costs of any necessary system upgrades) from the customer when their connections are at voltage levels above 35 kV. The distribution companies accept that cost recovery of shallow connection costs (i.e., only the costs of the connection, and not the costs of any necessary system upgrades) at the lower voltage levels of 35 kV and below is reasonable, and likely necessary to support renewable energy consistent with EU requirements. This is a reasonable compromise as it is not inconsistent with practice in Europe and is consistent with potential Government initiatives in the future to promote development of small-scale renewable customer-owned generation. The Consultant has revised the connection code in Annex A accordingly.

With respect to the chapter on planning in the Distribution Network Code, the main concern of the distribution companies relates to the requirement to conduct 5-year plans. They are currently set up to do 3-year plans, and it is customary in Georgia to approve distribution investments for the next three years only. After discussion, it appears that the primary concern of the distribution companies relates to accuracy – they are not able to accurately forecast beyond 3 years. It was suggested that the planning code might be re-worded to say that 5-year plans are required, with the initial 3 years based on detailed planning information, and the last 2 years of the plan used for indicative purposes only with much less detail. This is not inconsistent with practice elsewhere, as it is commonly accepted that the farther you go out in time, the less accurate the forecast. The Consultant has revised the planning code in Annex A accordingly.

2.3 Key Issues Related to Implementation of Distribution Network Code

The parties agree that the Distribution Network Code is an important document as it clearly assigns responsibilities, and will lead to a more efficient open access distribution regime in Georgia. The parties indicated they are committed to the successful implementation of the Distribution Network Code.

The distribution companies indicated they are:

- ***Not*** concerned that customer-owned generation will result in reduced sales and revenues. They understand that with retail competition on the horizon and the advent of multiple suppliers, they will be losing sales in their franchise areas to other suppliers, but will have

the opportunity to increase sales to customers in jurisdictions outside their franchise areas.

- ***Ready*** for retail competition, but emphasized that a number of initiatives must be undertaken by the Government of Georgia on the commercial side starting with the implementation of a competitive wholesale market with transparent market rules.

- ***Aware*** of the imminent nature of the Government's net metering policy. They accept that net metering will happen, but like GNERC, are interested in the details of the policy, and the lessons learned elsewhere.

- ***Prepared*** to separate their distribution wires function from their supply function. Previously they had indicated this was not possible, but now have resigned themselves to the fact that it is going to happen regardless of their position.

- ***In agreement*** that there is a need for DSO-DSO operating agreements to clearly define jurisdiction/facilities that are the responsibility of each DSO.

GNERC has staff with the expertise necessary to develop the Distribution Network Code, and to guide it through the approval process. However, GNERC indicates it will need to increase staff levels in order properly monitor and enforce the Distribution Network Code. Further, GNERC would benefit from additional training on distribution planning and cost/benefit analysis, as would the distribution companies.[4] The limited expertise at GNERC and the distribution companies relating to planning and cost/benefit analysis represents a significant gap in the ability of GNERC to monitor and enforce compliance with the terms and conditions of the Distribution Network Code, once adopted.

3. Key Design Elements of a Net Metering Policy and Recommendations for Georgia

The Government of Georgia is developing a net metering policy targeting renewable energy installations at the homes of residential customers and on the premises of small general service

[4] Currently, the distribution companies neither possess, not have the expertise to use, software to enable them to forecast demand and analyze the distribution network to determine when new facilities and upgrades are needed to alleviate thermal congestion, short circuit and quality of supply issues on the system. This is an issue that will have to be addressed during a transition period.

(commercial) customers. GNERC will be responsible for designing and implementing the net metering program consistent with the new policy. In response to a request from GNERC staff, the Consultant agreed to make a presentation on key design elements of a net metering program and to make recommendations on these design elements for the consideration of stakeholders in Georgia. The net metering policy based on these recommendations is reflected in the Consultant's review of the draft Distribution Network Code in Annex A. This Code will of course require revision to reflect the Government's net metering policy once issued.

A net metering program must consider the following design issues:

- Eligibility criteria relating to types of generation and energy sources to be included in the program; i.e., renewable energy sources only, such as solar, wind, etc., high efficiency fossil generation such as cogeneration, etc.
- Eligibility criteria relating to the customer classes that are allowed to install net metering facilities under the program such as residential customers only, residential customers plus small commercial/general service customers, etc.
- Limits relating to the size of installations, i.e., capacity of installation limited to size of customer service entrance.
- Program subscription limits on amount of generation capacity that can be installed on system as a whole; i.e., 2% of total system demand.
- Connection requirements such as technical review, standards for generator connection, safety inspections, etc., and allocation of costs; i.e., who pays costs for technical review, safety inspections, metering (incremental metering), distribution system upgrades (if necessary), billing, administration, etc.
- Aggregation of metering data for multiple net metering applicants.
- Billing and settlement: tariffs applicable to net consumption, and generation delivered to distribution system in excess of customer's own use.
- Treatment of any credits that might be associated with customer-owned generation; i.e., carbon credits, renewable energy credits, etc.

Following the Consultant's presentation on the key design issues, there was considerable discussion on what design criteria would work best in Georgia. There was general agreement among the parties, including the Ministry of Energy, the distribution companies and GNERC, on the following design principles. The actual design will depend on the Government's net metering policy and the results of any public review process conducted by GNERC.

- Eligibility:

    - limited to renewable generation sources with capacity less than 100 kW;
    - limited to homeowners and small businesses.

- Size limits: individual installations limited to 100% of the capacity of the customer's service entrance.
- Subscription limit: subscription would initially be limited to 2% of system capacity with the limit reviewed after three years (or sooner) to determine if it should be increased.
- Connection requirements: transparent and streamlined connection process defined in the Distribution Network Code with technical review and safety inspection required, and undertaken by the distribution company to which net metering customer is connected. The net metering customer would pay for incremental metering costs (i.e., cost of bidirectional metering installation less cost of typical metering installation) and would pay for any necessary permitting; i.e., environmental permits, construction permits, etc. There would be no additional charges to the net metering customer for the technical review and safety inspection. In the unlikely event the net metering installation requires distribution system upgrades, the distribution company, at its discretion, would be allowed to apply to GNERC for direct recovery of the costs from the net metering customer.
- Aggregation of metering data for multiple net metering applicants: Aggregation would be allowed at a single point of connection (i.e., apartment complexes), but would not be allowed for multiple connection points except under unusual circumstances as determined on a case-by-case basis by GNERC.
- Billing and settlement:
    - Customer's net consumption would be billed at the approved tariff for the relevant customer class; i.e., consumption and sales would be billed according to the same tariff;
    - If customer delivers more energy to distribution system than consumed in a month (i.e., excess generation), the excess kWh of generation would be carried over to the next month as a credit to the customer's bill. Credits would be tracked over a year, and if at the end of the year there remains a credit balance, it would be settled as follows: the balance would be re-set to zero with payment to customer for credit balance based on avoided cost. The avoided cost would be determined by GNERC each year, and would reflect the regional market price of energy. It may be higher or lower than the approved tariff. Payment according to avoided cost would reduce concerns relating to cross-subsidization.
- Treatment of credits: The net metering customer would retain any renewable energy or carbon credits associated with its generation.

Taxes

The Ministry of Energy's main concern with the net metering policy relates to taxes. Currently under Georgian Law:

- Residential customers pay value-added tax (VAT) on their total electricity bill.
- Generators pay a profit tax on income received from sales of its generated power to the utilities.
- Property owners pay tax on personal property such as homes and cars; i.e., 1% of the total value of the property.

Under current tax law, a net metering customer would be treated as two separate customers: a retail load customer and a retail generation customer. The net metering customer would pay VAT on total electricity consumed. It would also pay profit tax on all energy sold to the utility, and would pay additional personal property tax on its micro-power plant (i.e., solar panels, rooftop wind turbine, etc.). Therefore, a net metering customer would continue to pay the same VAT amount on its electricity bill while seeing two new taxes on its micro-power plant relating to personal property tax and profits from its power sales to the utility. Taxes would apply to the full amount purchased and sold, rather than the net amount. This represents a potential barrier to market entry.

The Ministry of Energy has broached this subject with the Ministry of Finance, but at this point, the Ministry of Finance is holding its position. Unfortunately, European countries have not addressed this issue because they have generally implemented feed-in tariffs rather than net metering. In the United States, small renewable energy sources (RES) have been promoted through elimination of sales tax on RES equipment, and income tax deductions equivalent to a percentage of the cost of the RES facility; i.e., if a RES facility costs $10,000, a household might be allowed to deduct 30% of the cost, or $3000, of the tax owing on its next income tax filing.

There was general agreement among the parties that while the elimination of the sales tax on RES equipment would be beneficial, the tax deduction probably would not owing to the very low marginal tax rates in Georgia. There was agreement between GNERC and the Consultant that a more effective approach in Georgia would be for the VAT to be applied only to net purchases from the utility, and the profit tax applied only to net sales to the utility. GNERC intends to propose to the Ministry of Energy and the Ministry of Finance that a new Net Metering/RES Law be promulgated that specifically states the VAT will apply only to net purchases from the utility, and the profit tax will apply only to net sales to the utility. Corresponding changes would be made to the Tax Code.

4. Consultant's Review of Draft Distribution Network Code

4.1 Approach

As already discussed, GNERC developed a draft Distribution Network Code including four chapters covering Operations, Planning, Connections and Metering. The Consultant reviewed the GNERC draft Distribution Network Code from the perspectives of: 1) Consistency with, in the Consultant's opinion, international practice, and 2) the EU's Third Energy Package. Importantly, the Consultant placed considerable emphasis on the Georgian perspective and situation. The objective is to provide GNERC with a Distribution Network Code that can be implemented immediately, and transitioned over time, as necessary, to meet the requirements of the EU.

The Law of Georgia on Electricity and Natural Gas states that there will be a single code covering both the transmission and distribution networks. Therefore, the Distribution Network Code will in fact be incorporated in the Transmission Network Code that has already received GNERC approval for use in Georgia. Since the two codes will be combined in one document, some of the usual components of a Distribution Network Code will not be needed. For example, a separate Glossary of Terms will not be needed, but there will be a need to expand it to cover terms used in the Distribution Network Code. There will also be a need to ensure terms are not ambiguous. For example, a "User" of the transmission network is not the same as a 'User" of the distribution network. Therefore, the term "User" should be split into two terms such as "Transmission User" and "Distribution User".

Further, there would be no need to duplicate a number of clauses often included under "General Conditions", such as:

- Standard legal provisions
- Rules change process
- Force majeure
- Dispute resolution
- Hierarchy of governance documentation
- Description of market, etc.

However, it would be worthwhile maintaining some of the clauses typically included in a "General Conditions" chapter such as:

- Purpose and objectives of the Distribution Network Code
- Distribution Network Code review panel

The purpose of the Distribution Network Code might be as follows:

> *To set out the minimum conditions that a distribution licensee[5] must meet in carrying out its obligations to distribute electricity under its license and the Law of Georgia on Electricity and Natural Gas including all transactions and interactions between the distribution licensee and Distribution Users including both load customers and generators.*

The Objective of the Distribution Network Code might be as follows:

> *To enable the distribution licensee to operate the distribution network efficiently and reliably, and in a fair and non-discriminatory manner.*

The Distribution Network Code review panel might carry out the following responsibilities:

a) Review all requests for rules changes to the Distribution Network Code submitted by the Commission, a Distribution User or a Distribution Licensee, including any requests for rules changes that review panel members themselves believe are warranted;

b) Submit recommendations for GNERC approval for rules changes to the Distribution Network Code that it believes are desirable including support for the recommendations;

c) Issue guidance relating to the Distribution Network Code on its implementation, performance and interpretation when asked to do so; and

d) Publish an annual report on its activities.

There would also be clauses relating to review panel membership. All Distribution User groups should be represented including retail load customers, retail generators, the distribution licensees, and perhaps the dispatch licensee (Transmission System Operator).

It is noted that a Transmission Network Code review panel was also recommended in Georgia, but was removed from the code as stakeholders viewed the panel as another unneeded level of bureaucracy. Nonetheless, the Consultant believes that such review panels are consistent with international practice, and recommends that GNERC review its position if not now, in the future after experience has been gained with use of the codes.

Finally, some Distribution Network Codes include a Distribution Data Registration Code which collates and lists all of the data to be provided by: 1) each category of Distribution User to the

[5] Throughout the Consultant's review of the Distribution Network Code the Distribution Licensees are referenced because under the current law, there is only one license for distribution. In the future, there will be a need to unbundle the distribution function into the Distribution System Operator (DSO), Distribution Asset Owners (DAOs) and Suppliers.

Distribution Licensee, and 2) the Distribution licensee to each category of Distribution User. A Distribution Data Registration Code was included in the Distribution Code developed for Georgia under the Hydro Power and Energy Planning (HPEP) Project referenced earlier. The Consultant does not believe this code is required in Georgia, at least not at this point in time. Instead, the Consultant recommends that such a document be maintained separately from the Distribution Network Code because it is likely to be changed frequently during the next few years of the reform process in Georgia, and it is much easier to make changes to a lower-level companion document (in the legal sense), than the Distribution Network Code itself. The Data Registration Code provided in the HPEP report provides an excellent starting point if GNERC decides such a document is desirable at this stage of its electricity market reform process.

4.2 Consultant's Review

The four chapters, or codes, in GNERC's draft Distribution Network Code including connections, planning, operations and metering cover everything needed in a Distribution Network Code. Further, no glaring omissions have been identified, although some editing was necessary to ensure fair and non-discriminatory access to the distribution network for small generators.

The Consultant has made numerous suggestions to improve clarity of the English version of the document to readers, and in particular, potential investors. All edits are shown in Track Changes to assist GNERC with its own review of the Consultant's suggested edits prior to submitting the completed document for public review. The edits posed attempt to clarify the English version of the document. The edits do not necessarily reflect changes needed in the Georgian version which likely reads clearly with use of recognized terms in the power industry.

The Consultant in his review has attempted to use consistent definitions throughout as is typically used in contract language, and in some instances, has modified terms to clarify differences between the transmission network code and the distribution network code since they will be incorporated in the same document and share the same Glossary.

The primary additions to GNERC's draft Distribution Network Code made by the Consultant are identified below. A complete version of the Distribution Network Code showing the Consultant's edits in Track Changes is attached as Annex A.

Distribution Network Operating Code

- Primary changes relate to the addition of article 1 - Scope and Objectives, and article 2 – General Conditions
- The General conditions include:

- The Distribution Licensee shall maintain the integrity of its Distribution Network. In order the meet this obligation, the Distribution Licensee requires load and generation data and information from Distribution Network Users.
- The Distribution Licensee is required to provide forecast load and generation data and information to the Dispatch Licensee consistent with the requirements set out in the Transmission Network Code.
- The Distribution Operating Code applies to:
    - The Distribution Licensees;
    - Distribution Network Users with demand or generation output exceeding 1 MW where the Distribution Licensee and/or the Dispatch Licensee consider it appropriate.
- The Dispatch Licensee and the Distribution Licensees shall be guided by the rules of international practice, electricity safety standards, and administrative acts of GNERC and Ministry of Energy and other relevant technical guidelines.
- There are three types of equipment outages:
    - Planned Outages – flexible; i.e., routine annual maintenance
    - Unplanned Outages – limited flexibility; i.e., must be done in the next two days
    - Forced Outages – immediate, outside the DSO's control; i.e., equipment failure such as fire, automatic trips owing to system problems, weather-related (lightning), etc.
- All outages must be managed by the Distribution Licensee in cooperation with the Dispatch Licensee to the maximum extent possible
- Generation and transmission dispatch is carried out by both the Dispatch Licensee and the dispatch function of the Distribution Licensees. The hierarchy is such that dispatch instructions issued by the Dispatch Licensee have the highest priority, while dispatch instructions issued by the dispatch function of the Distribution Licensees has second priority. The dispatch function of the Distribution Licensee should issue dispatch instructions only after receiving the approval of the Dispatch Licensee except in cases where it is judged that there is an imminent danger to the health of personnel or the public, or to the safety of the Distribution Licensee's equipment.

Distribution Network Planning Code

- Only minor changes made to this code

- Added clauses noting that distribution planning is driven mostly by new connections and the need to ensure reliable and secure supply of power to retail customers
- As requested by the distribution companies, modified 5-year plan to place emphasis on initial 3 years which include investment approvals, with final 2 years of plan indicative only with less detail
- Clarified that Distribution Users include embedded generators

Distribution Connection Code

- Primary change relates to the addition of connections of micro-power plants, and connections of customers at less than 35 kV. The micro-power plant connections piece was transferred from the draft Retail Metering Code and relates to net metering customers
- For net metering customers, included clause specifying that there will be a single point of contact identified by the relevant Distribution Licensee who will be responsible for all aspects of the net metering project from receipt of the application through to commissioning and execution of the power purchase/sales agreement
- Added clauses:
  - summarizing what is covered in the Connection Code
  - Summarizing conditions where a Distribution Licensee can: 1) refuse to connect an applicant, or 2) disconnect an existing Retail Customer
  - Procedure to be followed when an applicant is refused connection
  - Responsibility for costs of connection (applicant)
  - Responsibility for construction of connection (Distribution Licensee)
  - Distribution Licensee allowed cost recovery for processing connection requests according to amounts approved by GNERC

Retail Metering Code

- Primary change relates to addition of:
  - metering embedded generators
  - net metering
  - evolving technologies
  - smart meters

- Also clarified ownership of metering installations and responsibility for operation and maintenance of metering installations – Distribution Licensees will own, operate and maintain all metering installations and be allowed cost recovery in tariff
- Additional costs of metering upgrades paid by Retail Customers
- Other edits of note include:
  - Distinguished between mechanical and electronic recording meters. Choice subject to tariff, and type of meter requested by customer – customer pays incremental cost of meter upgrades
  - Distribution Licensee will publish a list of types of meters available on its website
  - Smart meters installed at direction of Government and/or GNERC
  - Section on net metering will require editing to reflect Government policy, once issued
  - Evolving meter technologies can be installed upon agreement between customer and Distribution Licensees provided it meets the requirements set out in metering code
  - In case of smart meters, likely to be undertaken by a smart metering entity rather than Distribution Licensee, but does not preclude Distribution Licensee from becoming a smart metering entity in the future

5. Need, Sequencing and Timing of Legal Provisions

5.1 Review of Legal Framework

The issues relating to implementation of a competitive electricity market in Georgia consistent with European Union requirements are well documented and well understood by GNERC. A March 2013 report completed under the USAID-funded Hydropower Investment Promotion Project identified the necessary steps for Georgia to join the Energy community.[6] Further, GNERC identifies key challenges in a presentation entitled *Key Challenges: GNERC and EU-Georgia Association Agreement*. Components of the EU Electricity Directive relating to the retail component of the electricity market are summarized in Table 1.[7]

An Association Agreement between Georgia and the European Union was signed on June 27, 2014. It was ratified by the Parliament of Georgia under Resolution N2495-RS. Under this agreement, Georgia is obliged to gradually bring its national legislation to levels consistent with EU Legislation. The deadline for implementation of EU Directives and Regulations under the Association Agreement is the timeline agreed to by Georgia in the framework of the Energy Community Treaty which includes opening up the electricity sector to full wholesale and retail competition by January 2017. GNERC staff indicate that the commitment to fully open the market to competition by January 2017 may be too aggressive. If Georgia does not meet this commitment, it will have a two-year reprieve to re-negotiate the commitment to the EU.

The biggest issue relating to the DSO legal framework is that there is limited retail competition. Currently, only customers directly connected to the transmission system have a choice of supplier, and because tariffs at the retail/distribution level are lower than regional market prices, few direct customers are buying power in the regional market. In fact, direct customers who have a choice of supplier are requesting that they be served by the distribution companies to take advantage of the lower retail tariffs.

To enable retail competition there is a need to modify the Law in Georgia on Electricity and Natural Gas to unbundle the supply function from the distribution function. Further, the eligibility level for customer choice must be expanded beyond the few directly connected

[6] See March 2013 Hydropower Investment Promotion Project report entitled *Report on Necessary Steps Forward For Georgia For Joining the Energy Community*.

[7] These components of the EU Electricity Directive relate primarily to the commercial side of the electricity market, rather than the technical side of the market addressed in the Distribution Network Code, licenses, etc.

customers to a much broader number of retail customers supplied from the distribution network, and must ultimately include all retail customers. Full retail competition must be supported by a supplier of last resort to supply those customers who do not exercise their right to choose a supplier, and a subsidy mechanism to protect the truly needy customers who cannot afford to pay market-based tariffs.[8]

The regional electricity market is very important to Georgia's energy security, particularly since Georgia it is a net importer of electrical energy; i.e., the amount of energy imported annually exceeds the amount of energy exported annually. Georgia has international interconnections with the Russian Federation, Turkey, Armenia and Azerbaijan, but the regional electricity market has not yet developed to the extent that the international interconnections are fully-utilized, so the cost of electricity in the region is sub-optimal. The limited number of customers with the right to choose suppliers, and the absence of an unbundled competitive supply function at the retail level in Georgia contribute to the under-utilization of the international interconnections.

These issues are the primary roadblocks to establishing a competitive electricity market in Georgia consistent with EU Directives. Amendments to the Law in Georgia on Electricity and Natural Gas and its supporting regulations, such as the Market Rules, are necessary if these issues are to be addressed. The key challenges for Georgia with respect to the distribution, or retail, component of its electricity market include:

- The market model must be harmonized with the EU Energy Acquis. Currently, Georgia's market rules do not promote retail competition. A firm plan for opening the market to all retail customers to allow them to choose their supplier is needed.
- The level of unbundling falls short of EU requirements. At the wholesale level, the transmission system operator is not legally separated from the transmission ownership function, and at the retail level, the distribution and supply functions are not unbundled. The Law in Georgia on Electricity and Natural Gas must be amended to define a distinct retail supply function separate from distribution.
- The introduction of retail competition must be accompanied with a supplier of last resort to supply those customers who do not exercise their right to choose a supplier. Fair and transparent regulation as it relates to the tariffs for the supplier of last resort will be needed.
- A subsidy mechanism for customers who are truly in need of subsidized tariffs must be developed consistent with the market framework.

[8] As noted earlier, GNERC currently conveys a subsidy to the needy by discounting the first two blocks of the residential electricity tariff.

Table 1. Components of EU Electricity Directive Relating to Retail Electricity Market

Article 32 ensures homogeneous and non-discriminatory access to the network including cross-border flows between member states

Measures on consumer protection (Annex A)

Without prejudice to Community rules on consumer protection, in particular Directives 97/7/EC of the European Parliament and of the Council(1) and Council Directive 93/13/EC(2), the measures referred to in Article 3 are to ensure that customers:

(a) have a right to a contract with their electricity service provider that specifies:

- the identity and address of the supplier;

- the services provided, the service quality levels offered, as well as the time for the initial connection;

- if offered, the types of maintenance service offered;

- the means by which up-to-date information on all applicable tariffs and maintenance charges may be obtained;

- the duration of the contract, the conditions for renewal and termination of services and of the contract, the existence of any right of withdrawal;

- any compensation and the refund arrangements which apply if contracted service quality levels are not met; and

- the method of initiating procedures for settlement of disputes in accordance with point (f).

Conditions shall be fair and well known in advance. In any case, this information should be provided prior to the conclusion or confirmation of the contract. Where contracts are concluded through intermediaries, the above information shall also be provided prior to the conclusion of the contract;

(b) are given adequate notice of any intention to modify contractual conditions and are informed about their right of withdrawal when the notice is given. Service providers shall notify their subscribers directly of any increase in charges, at an appropriate time no later than one normal billing period after the increase comes into effect. Member States shall ensure that customers are free to withdraw from contracts if they do not accept the new conditions notified to them by their electricity service provider;

(c) receive transparent information on applicable prices and tariffs and on standard terms and conditions, in respect of access to and use of electricity services;

(d) are offered a wide choice of payment methods. Any difference in terms and conditions shall reflect the costs to the supplier of the different payment systems. General terms and conditions shall be fair and transparent. They shall be given in clear and comprehensible language. Customers shall be protected against unfair or misleading selling methods;

(e) shall not be charged for changing supplier;

(f) benefit from transparent, simple and inexpensive procedures for dealing with their complaints. Such procedures shall enable disputes to be settled fairly and promptly with provision, where warranted, for a system of reimbursement and/or compensation. They should follow, wherever possible, the principles set out in Commission Recommendation 98/257/EC(3);

(g) when having access to universal service under the provisions adopted by Member States pursuant to Article 3(3), are informed about their rights regarding universal service.

- Further development of the monitoring and approval process for distribution investment plans is necessary. This will in part be addressed by the Distribution Network Code.
- A renewable energy law and incentive mechanism should be developed and promulgated into law.
- A policy relating to energy efficiency rules, procedures and compliance should be developed.
- The Distribution Network Code governing connection to the distribution system, distribution planning and operations, and metering including net metering for small customer-owned renewable energy installations must be promulgated into law (the driving force behind this Technical Assistance).

5.2 Requirement for Amendments and Additions to Georgia's Legal Framework

The Law of Georgia on Electricity and Natural Gas must be amended to unbundle the distribution function into: 1) Distribution System Operator (DSO), and 2) Retail Supply. Further, owing to the large number of Distribution Asset Owners in Georgia, it is recommended that the law include amendments providing a third category of distribution service, that of a Distribution Asset Owner, or DAO. By requiring Distribution Asset Owners to be licensed, these entities will either sell their assets to the existing Distribution Licensees, or abide by their licenses which will require that they properly maintain their assets leading to improvement in the reliability and quality of supply to retail customers.

A Distribution Asset Owner owns and maintains low voltage assets such as lines and sub-stations. It does not operate its assets – its assets are under the operational control of the DSO. A DAO is normally allowed cost recovery and a return on its assets, and recovery of annual costs to maintain its assets. An agreement is generally required between the DSO and the distribution asset owner to ensure the DSO has operational control over the assets.

Retail suppliers arrange power supplies for retail customers and provide value-added services such as price risk management (i.e., energy prices that might be fixed over a longer period such as 5 years), energy efficiency, advanced tariff designs (i.e., time-of-day tariffs with associated metering), etc. Retail suppliers are allowed to provide supply services anywhere in the country. They are not guaranteed sales in a franchise area as they are today in Georgia, so competition is created in the retail supply component of the market.

The primary role of the DSO is to be an impartial and neutral retail market facilitator ensuring open and non-discriminatory access to the distribution network. Its role is to facilitate, not participate, in the market. Non-discriminatory access generally means:

- Customers with similar consumption characteristics are subject to similar terms and conditions of service, and prices.
- Customers are allowed to connect to the distribution network within a reasonable time frame and following a transparent and non-discriminatory connection process.

This applies to both retail loads and generators.

Specific responsibilities of the DSO include:

- Operation of the distribution network in an efficient and reliable manner with adequate power supply quality.
- Conducting maintenance of distribution facilities under its control in a manner that ensures continued reliability and quality of supply.
- Undertaking planning and expansion of the distribution network to ensure access and continued reliability and quality of supply, and ensuring energy efficiency, demand management and renewable energy programs are incorporated in the plan.
- Cooperation with other electricity supply entities including other DSOs to ensure coordinated operation and development.
- Manage generators connected to the distribution network who are not participants in the wholesale market.
- Manage electricity flows at higher voltage levels in cooperation with the transmission system operator (TSO).
- Cooperating with the TSO on the development of emergency procedures to be implemented during large-scale blackouts.
- Cooperating with the TSO on restoring service following large scale blackouts.
- Organizing and harmonizing information requirements and business practices to ensure proper information and data exchange including controls necessary to enable audit of such information.
- Ensuring an open governance structure that allows market participants the ability to shape the process.
- Provide transparent and relevant metering to retail customers.
- In some cases, purchasing electricity in a transparent and non-discriminatory manner to cover losses on the distribution system.

The roles and responsibilities of the DSO and distribution network users are documented in the Distribution Network Code. As discussed in the previous section of this report, the Distribution Network Code usually covers the following:

- General provisions
- Connection code
- Operating code
- Planning code
- Metering code

Consistent with the current arrangement, it is recommended that there be three Distribution System Operators in Georgia. With three DSOs in the country, and numerous Distribution Asset Owners, there will be a need for additional technical legal/regulatory documents at the Distribution level including:

- Licenses for DSOs, Suppliers, and Distribution Asset Owners
- Operating agreements between:
    - TSO and DSO
    - DSO and DSO
    - DSO and DAO (Distribution Asset Owner)

Georgia currently has a single license covering all aspects of distribution. Once amendments have been made to the Law in Georgia on Electricity and Natural Gas, the distribution license would be suspended, and replaced with the three new licenses for Distribution System Operator, Retail Supply and Distribution Asset Owner.

The operating agreements set out the relationship between the parties to the agreement thus giving effect to the new industry arrangements. GNERC indicates that it already has operating agreements between the TSO and the distribution licensees. This operating agreement would require some modification following amendment of the Law. The DSO to DSO and DSO to DAO operating agreements would have to be developed. Given the large number of DAOs in Georgia, consideration might be given to drafting a single multi-party agreement between the

DSO and all of the distribution asset owners within its franchise area.[9] The DSO to DAO agreement might cover the following:

- The terms used in the agreement
- The usual terms and conditions of any contract such as the effective date and term, provisions for withdrawal and termination, etc.
- A description and listing of the facilities turned over to DSO operating authority
- The relationship of the agreement to other industry documents, and which documents take precedence
- The separate rights and responsibilities of the DSO and the Distribution Asset Owners
- Maintenance coordination obligations and maintenance standards, including rights of the DSO to access and use of Distribution Asset Owner equipment
- The responsibilities of the parties during a system emergency
- Provisions for distribution planning and expansion, including the relative roles of the DSO and the Distribution Asset Owners
- How the DSO will administer the process for granting access to and use of the combined distribution facilities of the Distribution Asset Owners
- How encumbrances such as pre-existing contracts and operational agreements will be honored under the new arrangements
- The terms and conditions relating to payment by the DSO for the cost of distribution facilities
- Establishment of any coordination committees

5.3 Sequencing and Timing

As identified above, there are a number of issues to be addressed in the legal framework before retail competition can be introduced in Georgia. GNERC's current priority in this regard is to implement the Distribution Network Code. The next steps in this process include incorporation of the Consultant's edits and submit the revised draft Distribution Network Code for public consultation. The public consultation process will include participation of the distribution

[9] GNERC legal staff indicated that they believe it may be more efficient to draft individual agreements between the DSO and each distribution asset owner as they believe it would be very difficult to gain the agreement of all distribution asset owners on a single document.

companies, the transmission system operator, and any other interested parties including the public. Following the public consultation process, GNERC will revise the Distribution Network Code to incorporate comments received during the public consultation process, adopt the Distribution Network Code and publish it on its website. The distribution companies will then operate under the rules of the Distribution Network Code and GNERC will initiate the monitoring and control process. The suggested sequencing and timing of the steps for adoption and implementation of the Distribution Network Code is shown in Table 2. The actual timing of the steps necessary to finalize and implement the Distribution Network Code will depend on GNERC priorities and the length of time needed for the public consultation process.

In addition to the Distribution Network Code, there are a number of other legal arrangements related to implementation of retail competition in Georgia's electricity market. Some of these are tied to developments on the wholesale electricity market which is under the control of the Ministry of Energy. The steps necessary for regulation of distribution network operations in a competitive retail electricity market are identified in Table 3. Note that this is not a complete list. A complete list of necessary steps, along with the sequencing and timing of these steps are outside the scope of this Technical Assistance, but are within the scope of another USAID/NARUC collaboration project entitled *Southeast Europe Regulatory Bridge on Electricity Retail Market Development*. Under this project, national implementation plans will be developed for each Southeast Europe country including Georgia for the regulation of electric distribution network operations in a competitive retail market environment. It is anticipated that the national implementation plans will be developed during the first half of 2016.

Table 2. Adoption and Implementation of Distribution Network Code

	Nov-15		***Dec-15***				***Jan-16***				***Feb-16***				***Mar-16***			
Steps	***Wk 3***	***Wk 4***	***Wk 1***	***Wk 2***	***Wk 3***	***Wk 4***	***Wk 1***	***Wk 2***	***Wk 3***	***Wk 4***	***Wk 1***	***Wk 2***	***Wk 3***	***Wk 4***	***Wk 1***	***Wk 2***	***Wk 3***	***Wk 4***
Incorporate Consultant's edits																		
Submit Code for public review																		
Incorporate results of public review																		
Finalize and adopt Code																		
Publish Code on GNERC website																		
Initiate monitoring and control																		

Table 3. Regulation of Distribution Network Operations in a Competitive Retail Electricity Market

1	Distribution Network Code
2	Amend Law of Georgia on Electricity and Natural Gas
3	Modify Distribution Network Code following amendments to Law
4	Licenses for DSO, Retail Supply and Distribution Asset Owner
5	Operating agreements: DSO to DSO and DSO to DAO
6	Code governing retail suppliers
7	Supplier of last resort including principles of tariff setting
8	Subsidy mechanism for the poor
9	Renewable energy law/policy
10	Energy conservation and load management law/policy
11	Data exchange between DSOs and distribution users
12	Incorporate service quality indices into regulation

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Annex A: Consultant's Proposed Revisions to GNERC Draft Distribution Network Code

Chapter 4. Retail Metering Code~~Rules of the Distribution Network~~

Comment [CB1]: Added: metering of embedded generators, net metering, evolving technologies and smart meters. Also clarified ownership of metering installations and responsibility for operation and maintenance of metering installation.

Article 1. Scope and Objectives

1. Requirements set forth under this retail metering code ~~law~~ apply~~ies~~ to the Distribution Licensees and the R~~r~~etail c~~C~~ustomers of the Distribution Licensees including loads and generators connected to the Distribution Network.
2. The o~~O~~bjectives of the Retail Metering Code~~Rules~~ include~~are~~:
   a) Formation of ~~organizational~~ procedures and technical requirements for organizing metering of ~~the Distribution Licensee's~~ R~~r~~etail C~~c~~ustomers.
   b) Determination of the requirements for ~~towards~~ metering equipment testing and accuracy~~precisenesss class~~.
   c) Determination of metering data collection and management.
3. The Retail Metering Code~~rules~~ addresses~~determine~~ the:
   a) Duties and responsibilities of the Distribution Licensees relating to ~~in~~ electricity metering organization and operation ~~issues~~;
   b) Requirements for electricity metering organization, metering equipment ownership, collection~~s~~ of metering data and creation of metering data-bases;
   c) Technical and operational requirements of metering equipment;
   d) Confirmation, testing and inspection requirements;
   e) Dispute settlement procedures ~~rules~~ related to ~~the~~ metering.
4. Procedures and requirements described in this Retail Metering Code~~Chapter~~ do not apply to those metering points on~~f~~ the Distribution Network that relate to ~~, that participate in~~ wholesale trade. Procedures and requirements for metering points on the Distribution Network that relate to wholesale trade are addressed in the Transmission Network Code.~~, also to Power Plant metering points (except power Plants with up to 100 KW/h capacity in ownership of retail customers).~~
5. Nothing in this Retail Metering Code shall:
   a. Affect the obligation of a Distribution Licensee to comply with all applicable Government of Georgia metering requirements;
   b. Preclude a Distribution Licensee from applying evolving technologies and processes relating to metering as they become available provided that such application is effected in accordance with the provisions of this Retail Metering Code.

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Article 2. General Provisions

1. A Distribution Licensee shall provide, install and maintain a meter installation for retail settlement and billing purposes for each Retail Customer connected to the Distribution Licensee's Distribution Network in accordance with this Retail Metering Code.

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2. A Distribution Licensee may install a mechanical meter or an electronic interval meter for the purposes of measuring demand consumed or generated in order to assign the Retail Customer to a tariff class or to set the appropriate distribution services tariff for that Retail Customer.
3. A Distribution Licensee shall provide an electronic interval meter within a reasonable period of time to any Retail Customer who submits a written request for such meter installation in accordance with the Electricity Supply and Consumption Rules subject to the condition that the Retail Customer that submits the request for interval metering shall compensate the Distribution Licensee for all incremental costs associated with that metering installation, including capital, installation and ongoing operation and maintenance costs associated with the electronic interval metering installation in accordance with charges approved by the Commission.
4. A Distribution Licensee shall publish on its website the types of meters that are available to Retail Customers, the process by which a Retail Customer may obtain such meters and the charges that would be levied on a customer for each type of meter.
5. When directed to do so by the Commission, a Distribution Licensee shall install smart meters that meet the specifications prescribed by the Commission and any relevant Government of Georgia legislation.

~~1.~~6. The Customer is not required to accept any condition and/or service that is not directly defined under this code~~ese rules~~ and current legislation.

~~2. The Distribution Licensee is responsible for organizing metering nodes in accordance with these rules.~~

~~3.~~7. Regardless of ~~Despite~~ the method of connecting to the Distribution Network and the location of the metering point~~node~~, the metering installation shall~~latter should~~ be in the ownership of the Distribution Licensee.

~~4.~~8. ~~In case of necessity t~~The Distribution Licensee is entitled, and in ~~case of~~ circumstances specified~~envisaged~~ in this code~~ese rules, — is~~ obliged to remove, repair, verify and replace the metering installation ~~node (~~including the electricity meter~~)~~ in accordance with this Retail Metering Code.

Article 3. Organizing the Metering Point~~Node~~

1. The Distribution Licensee is obliged to meter electricity consumption of Retail~~the~~ Customers~~consumer~~ individually (except cases envisaged under current legislation), organize the metering point~~node~~ for such purposes, purchase, install and repair the meter, ~~necessary for installing metering node, different types of equipment, if necessary,~~ electrical equipment and other facilities, as necessary, to ~~that~~ ensure the proper functioning of the metering point~~system~~ and protect it from unlawful (unauthorized) infringement.

2. The Distribution Licensee is entitled to charge the Retail C~~c~~ustomer for the expense of ~~with expenses carried out for~~ organizing the metering point~~node~~ (including costs of purchasing meters and other devices or facilities and their installation~~ing them~~) only in cases directly

envisaged under this~~ese~~ Retail Metering Code~~rules~~ and current legislation, and in accordance with charges approved by the Commission.

3. The Distribution Licensee shall protect the metering point from ~~In order to avoid~~ unlawful modification of electricity meter readings~~s~~ or falsification of the data recorded by metering equipment~~ (including electricity meter) shall be protected from unlawful (unauthorized) impact on it~~.

4. The m~~M~~etering point~~node~~ shall comply with technical regulations and standards in Georgia. The m~~M~~etering point~~node~~ shall be organized in a manner that provides authorized entities the opportunity~~to give any interested party possibility~~ to read meter data, as well as ~~to~~ enable the Distribution Licensee to collect metering data and perform other types of activities freely.

5. Before receiving electricity~~beginning activities aiming to provid~~, a Retail ~~e customer with electricity the~~ Ce~~c~~ustomer is obliged to inform the Distribution Licensee on any impeding or negative factors ~~taking place onsite~~ known to him about his metering point.~~and/or on any negative circumstances.~~

6. The e~~E~~lectricity m~~M~~eter shall be installed ~~(respectively metering node shall be organized)~~ near ~~to~~ the boundary of the property ~~territory~~ owned by the Retail Ce~~c~~ustomer ~~(outside its territory)~~, and ~~but~~ the distance from household, factory, generator or other unit where consumption and/or generation takes place should not exceed 50 meters provided ~~, if~~ technical regulations or agreements between the D~~d~~istribution L~~l~~icensee and the Retail Customer~~consumer~~ do~~es~~ not state otherwise.

7. If the electricity meter is~~shall be~~ installed on property ~~at the territory~~ owned by the Retail Ce~~c~~ustomer, the latter shall ensure provision of a convenient place for installation of ~~organizing~~ the metering point~~node electricity lines,~~ so that ~~the~~ representatives of the Distribution Licensee have ~~had~~ the opportunity to~~of~~ install, repair, test and read~~ing~~ the metering point unimpeded at regular intervals.~~node and electrical wiring at daytime, testing, repairing it and reading meters regularly~~.

8. The Distribution Licensee is responsible for installing the metering point~~node (including installation of electricity meters),~~ and undertaking proper technical sealing and tagging of the metering point~~drafting relevant act~~, and providing the Retail Customer with the name ~~where name and surname~~ of the Distribution Licensee representative~~, customer and person~~ responsible for maintaining the metering point~~node~~, including the meter, with the following qualifications:~~ shall be indicated. Hereby:~~

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a) In the case of a d~~D~~amaged or dysfunctional metering point~~node~~, relevant~~also its~~ meters, ~~other types of~~ electrical equipment and devices are restored, substituted and installed by the Distribution Licensee at~~on~~ its own expense;

b) In the case where a damaged ~~if~~ metering point is the fault of the Retail Customer, ~~nodes organized (installed) in apartment houses are damaged~~ the Distribution Licensee is entitled to ~~require~~ reimbursement of the costs to repair or replace the damaged equipment at the metering point. ~~of damages from relevant customer in case if it is observed that damage was caused by that customer~~;

c) The Retail Customer is responsible for maintaining the metering point equipment~~,~~ when the metering point is located ~~node is organized~~ within the property ~~territory~~ owned by the Retail Customer~~customer~~. T~~(t~~his sub-paragraph does not apply in~~to~~ cases where~~n~~ the damaged metering point~~node~~ has been installed in an enclosure outside the Retail Customer's property~~at the entrance hall)~~.

9. In the case of bi-directional ~~double~~ flow of electricity between the Retail C~~c~~ustomer~~s'~~ and the Distribution Licensee's~~s'~~ network,~~s~~ bi-directional~~reversal~~ meters ~~of electricity~~ shall be installed so~~(respectively metering node shall be organized so~~ that electricity flow can be metered in both directions~~ was metered)~~ and the meter shall be connected to the intermediary level of the ASECCM system.

10. The m~~M~~etering point~~node~~ shall be organized at the ~~balance separation point (~~connection point~~)~~ between the Retail C~~c~~ustomer and the Distribution Licensee in accordance with paragraph 6 of this Article. ~~Respectively, i~~If the Retail C~~c~~ustomer is supplied by the Distribution Licensee through a transformer under the ownership of such customer, the electricity meter should be installed ~~(metering node shall be organized)~~ on the high voltage side of the transformer.

11. If a ~~the household~~ Retail Customer~~consumer~~ connected at ~~consuming~~ 220 V owns an electrical installation rated at ~~with~~ 380 V that is~~was~~ connected to a~~the~~ Distribution Line and the ~~, hereby~~ total capacity ~~to be~~ connected does not exceed 10 ~~K~~kW~~/h~~, the customer can~~is entitled to~~ request a ~~organization of~~ 380 V metering point~~node~~ instead of a 220 V metering point~~node~~ as follows~~in one of the following manners~~:

a) The Retail C~~c~~ustomer shall submit an application ~~apply~~ to the Distribution Licensee for a 380 V metering point, and the Distribution Licensee shall review the application to ~~and~~ ensure the metering point can be organized at ~~ation of~~ 380 V ~~metering node~~. The ~~In such case the~~ Distribution Licensee is obliged to issue its technical evaluation~~condition~~ free of charge, and within ~~no later than~~ 2 weeks of ~~upon~~ receipt of the application;

b) If the Retail Customer requests that the ~~n case if~~ 380 V metering point~~node~~ be ~~is being~~ installed by the Distribution Licensee, the Distribution Licensee ~~latter~~ is obliged to install the ~~ensure substitution of~~ metering point~~node~~, and the Retail C~~c~~ustomer is obliged to reimburse the Distribution Licensee for expenses incurred at a price ~~carried out for~~

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~~substitution and organization of the metering node, that shall~~ not to exceed 250 GEL including VAT.

12. Current and voltage transformers shall be located at or close to the connection point ~~(balance separation point) or close to the connection point~~ taking physical location and costs into consideration.
13. The Retail Customer is entitled to request installation of check meters provided the Retail Customer agrees to reimburse the ~~in the same or other metering node and such organization costs are reimbursed by the Customer to the~~ Distribution Licensee for all costs associated with installation of the check meter.

Article 4. Metering of Generators Embedded in the Distribution System

1. The metering installation for a Retail Customer that is a generator with a nameplate rating exceeding 30 MW shall be considered a wholesale market participant and shall be subject to the metering requirements set out in the Transmission Network Code.
2. A Retail Customer that is a generator with nameplate rating less than 30 MW and who is not a Net Metered Customer, shall have a metering installation as may be required having regard to:
   (a) The meter data requirements necessary to enable the Distribution Licensee to settle amounts owing to or from the Retail Customer that is a generator; and
   (b) The type of generation facility or generation technology of the Retail Customer that is a generator.
3. A Retail Customer that is a generator who is a Net Metered Customer shall have a metering installation capable of net, or bi-directional, metering. The Distribution Licensee shall make such metering available to eligible Net Metered Customers in its service territory in accordance with Government legislation, and in particular, the "Net Metering Regulation", and direction from the Commission.
4. A Distribution Licensee shall meter a Retail Customer that is a generator which is not a wholesale market participant or a Net Metered Customer, in the same manner as the Distribution Licensee's other Retail Customers.
5. A Distribution Licensee shall meter a Net Metered Customer in accordance with Government legislation, and in particular, the "Net Metering Regulation", and direction from the Commission.

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Comment [CB2]: This Article 4 will require editing to reflect the new Government policy once promulgated into law.

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6. A Distribution Licensee shall install a metering installation for a Retail Customer that is a generator which is not a wholesale market participant or a Net Metered Customer, in accordance with the Distribution Licensee's metering requirements.
7. A Distribution Licensee shall be required to install the metering installation for a Retail Customer that is a generator who is a Net Metered Customer in accordance with the Distribution Licensee's metering requirements, and Government legislation, and in particular, the "Net Metering Regulation", and direction from the Commission.
8. Where practical, the metering installation for a Retail Customer that is a generator shall be installed at the point of supply to the Distribution Network. If it is not practical to install the metering installation at the point of supply, a Distribution Licensee shall apply loss factors to the generation output in accordance with the loss factors applied for retail billing and settlement.
9. The methodology for meter reading, billing and settlement for a Net Metered Customer shall be as described in the Electricity and Supply Consumption Rules, and in accordance with Government legislation, and direction from the Commission.

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Article 54. Retail ~~Checking Electricity~~ Meter Testing and Dispute Resolutions ~~Related to the Metering~~

1. For prompt resolution of disputes related to retail metering, ~~between~~ the parties to the dispute ~~they~~ shall meet immediately upon request of one or the other of the parties~~of them~~. For the purpose of dispute resolution, ~~or for reaching agreement on any issue or for statement of other facts~~ the Distribution Licensee is obliged to draft a report identifying the details of the dispute. The report shall be ~~an act which shall be~~ signed by both~~the~~ parties.
2. If the Retail Ceustomer's electrical meter incorrectly meters electricity consumption, or the meter has been ~~reads have been~~ read improperly, and as a consequence the Retail Customer~~incorrect~~ has been issued a bill that is incorrect, ~~has been issued~~ the Distribution Licensee is obliged to make corrections to the Retail Ceustomer's billing account.
3. In the case of a dispute caused by improper meter reading, the Distribution Licensee shall examine the electricity meter reads no later than 5 working days from the date it became aware of the dispute and shall draft a report documenting the dispute and the results of its examination~~the relevant act~~.

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4. For the purpose of this Retail Metering Code, ~~ese rules examining electricity~~ meter examination implies visual inspection of the metering installation and equipment~~facilities (meters)~~, determination of metering errors ~~actual mistakes~~ through various methods when~~if~~ necessary, ~~its~~ verification of meter reads, and any expert reviews of the metering installation~~(official) metering~~ and/or other activities necessary for determining the accuracy of the ~~estimating mentioned~~ metering installation~~facilities~~.
5. The c~~C~~osts of electricity meter examinations cannot be imposed upon the Retail C~~c~~ustomer if the scheduled examination period or examination term has expired.
6. The Distribution Licensee shall ensure~~s~~ the proper functioning of the ~~organization of electricity consumption~~ metering point~~node~~, including, as necessary, removal of ~~the~~ electricity meters and ~~,~~ the~~ir~~ verification and/or installation of new metering equipment. Service fees may ~~can~~ be imposed ~~up~~on Retail ~~direct~~ C~~c~~ustomers only in cases directly referenced ~~envisaged~~ under current legislation.
7. Verification of the retail electricity meters is carried out in accordance with rules set by current legislation.
8. Unscheduled examination of the electricity meter accuracy may take place upon the request~~basis~~ of a Retail C~~c~~ustomer's~~ request~~. The Distribution Licensee is obliged to notify other parties of such examination immediately after receipt of the request. Costs associated with an unscheduled examination ~~on the basis of customer's request~~ are borne by the Retail C~~c~~ustomer except in cases prescribed in paragraphs 5 and 9 of this Article, and~~lso~~ in cases when this~~ese~~ code~~rules~~ or current legislation ~~does not~~ state otherwise. In the case where an~~of~~ electricity meter has been removed, ~~al~~ the Distribution Licensee is obliged to file a report as soon as practical~~draft relevant act immediately~~.
9. Electricity meters and electricity metering transformers may be verified by the Georgian National Agency for Standards and Metrology and/or ~~in~~ any other laboratory accredited in Georgia on the basis of instructions filed by ~~of~~ the relevant~~interested~~ parties. In the case when ~~if~~ meter deviations do not correspond to ~~its~~ permissible manufacturer's data, ~~passport deviation~~ the costs to correct the Retail ~~of proper organization of~~ C~~c~~ustomer's metering point~~nodes~~, including the costs of meter verification and installation, are borne by the Distribution Licensee ~~(~~ except in cases of illegal consumption ~~cases~~ envisaged under ~~the~~ current legislation~~)~~.
10. On the basis of the written application, the Retail Customer ~~interested person (including customer)~~ may request~~ire~~ expert ~~(official)~~ testing and measuring by~~from~~ the Distribution Licensee at any stage of the metering accuracy estimation. In such cases, before commencing activities necessary to meet this~~for such~~ requirement, the Distribution Licensee is obliged to provide the Retail C~~c~~ustomer with a written explanation of the procedure~~s~~ to be followed and

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possible expenses associated with the expert (official) measurement that might be imposed upon the Retail Ceustomer in cases directly envisaged under paragraph 8 of this Article.

11. The Distribution Licensee is obliged to ensure the presence of the Retail Ceustomers and/or itstheir representatives at the on meter examination procedures by notification specifying the ying location and exact time of the meter where the examination takes place. The Distribution Licensee shall notify Supplier and Customer of such examination at least 3 days in advance.

12. Metering dDisputes associated with metering of consumed electricity shall be resolved in thea following manner:

    a) If it is confirmed that a deviation of the electricity metering pointnode (including meter) exceeds theits permissible manufacturer accuracypassport deviation to the detriment of the Retail Ceustomer, the Distribution Licensee is obliged to make corrections to the data accordingly from the commencement date of the faulty metering until the date of the requested examination. The excess aAmount paid by the Retail Ceustomer in excess shall be reimbursed to the Retail Ceustomer on its next electricity billas soon as mistakes are corrected and/or it should be reckoned during subsequent payment (if the customer desires so).

    b) If it is confirmed that a deviation of the electricity metering pointnode (including meter) exceeds theits permissible manufacturer accuracypassport deviation to the benefit of the Retail Ceustomer, the Distribution Licensee is obliged to make corrections to the data accordingly from the commencement date of the faulty metering until the date of the requested examination. The deficit amount customer will be added to the Retail Customer's next electricity billcharged to pay price of excess electricity supplied by the Distribution Licensee.

13. If the date of commencement of the ing faulty metering cannot be determinedobserved, the calculation will be made according to period between meterthe reads since before the last meter read was undertakens have been made and the date of the requested examination, but in no case will such period shall not exceed 3 months.

14. Determination of the eElectricity meter deviations and chargesing according to fault factor may be determined take place only on the basis of the examination results of the metering pointnode (including meters) conducted by the National Agency of Standards and Metrology and/or by any other Laboratory accredited in Georgia.

15. If an electricity meters has have been damaged, the Retail Ceustomer is obliged to notify the Distribution Licensee immediately (orally or in writing, including notification via phone call). The Distribution Licensee is obliged to file a written note in writing receipt of such notification and immediately carry out the necessary measures and procedures for

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ensuring such Retail Ceustomer haswith uninterrupted electricity supply (in accordance with the requirements of this codeese rules and current legislation.); This article does not apply to cases of Provisions set for illegal electricity consumption shall not be applied to cases envisaged under this Article.

16. If metering (by means of electricity meter) of consumed electricity has did not taken place for a certain period of time, and/or an estimation of consumed electricity for a certain period of time is not availablethat period is impossible (i.e., owing to a damaged if meter has been damaged), the Retail Customer will be charged on the basis of its average historical consumption for theat period during which the metering was faultywithout metering due to average monthly consumption (taking seasonal consumption into consideration.) of three-month consumption during the period when metering has been well-organized. Charging under this methodology with this method is nonrecurring and shall not exceed three months.
17. If a meter has been removed for the purpose of substitution, the Distribution Licensee is obliged to install a new meter at the time the faulty meter is removedimmediately after removing previous meter (despite the fact that the old (removed) meter requires laboratorial and/or other types of examination), or act on the basis of paragraph 19 of this article.
18. Any meter that iswill not compliant with the pass test of accuracy class for that meter compliance shall be removed by the Distribution Licensee and substituted with another meter (except in cases envisaged under paragraph 19 of this Article, or inexcept cases when an appropriate check meter exists. Meters that are not compliant with accuracy class) that is undoubtedly accurate and damaged meter shall be sent forto the laboratory testing tofor estimateing the degree of deviation degree of metering.
19. If for the reasons of removing meter or observing damage (improperly functioning meters are not replaced,) electricity metering by means of electricity meter does not take place the Retail Ceustomer will be charged an to pay amount based on calculated according to its average monthly consumption (taking seasonal consumption into consideration provided), only if the Retail Ceustomer consents to it in writing. Charges according to this ing with such methodology areis nonrecurring and shall not exceed 1 month. Written consent is not necessary if a individual meter iswill be installed within 3 calendar days of after meter removal.
20. The Distribution Licensee shall possess portable etalon meter testingand equipment respective appliances for examining metering points node (meter) onsite.

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Article 6~~5~~. Technical Requirements for ~~the~~ Metering Equipment

1. Current and voltage transformers shall be chosen in such a way that the current transformer load shall be between the range of 25-100 % ~~range~~ of nominal values under~~in~~ normal conditions, and voltage transformer load shall not exceed 100% of nominal value.
2. The neutral of the voltage transformer shall be grounded.
3. Current transformer~~s'~~ connections at~~of~~ the metering point shall serve only for ~~the~~ metering purposes.
4. In the case where a voltage connection exceeds ~~of more than~~ 1 kV, ~~voltage connection~~ the electricity meter shall be electronic, have hourly metering capability~~ies~~ and be connected to ~~turned on in~~ the Automatic Systems for Electricity and Capacity Control and Metering (ASECCM).
5. In the case where a voltage connection exceeds ~~of more than~~ 1 kV ~~voltage connection~~, the electricity meter shall have a~~the~~ self-test option and give a warning signal when~~ile~~ the meter malfunction~~sing disorders (including improper metering)~~.
6. In the case where a voltage connection exceeds ~~of more than~~ 1 kV, ~~voltage connection~~ the electricity meter shall meter and screen the following information:
   a. Active energy;
   b. Reactive energy;
   c. Power factor~~Load capacity~~;
   d. Peak capacity;
   e. Capacity factor;
   f. Voltage value.

   The meter shall be placed in a protected box equipped with a lock, and the front side of the case shall be transparent for the purpose of unhindered viewing ~~reading~~ of the metered data.

7. In the case where a voltage connection is less than ~~the connection of~~ 1 kV ~~and lower voltage~~, the meter~~s~~ will be of ~~with~~ no less than 2.0 accuracy class and the meter~~ing~~ transformer~~s~~ will be of ~~with~~ no less than 1.0 accuracy class ~~shall be used;~~.

~~7.~~8. In the case where a voltage connection exceeds ~~the connection of more than~~ 1 kV, ~~voltage~~ the meter~~s~~ will be of ~~with~~ no less than 1.0 accuracy class and the meter~~ing~~ transformer~~s~~ will be of ~~with~~ no less than 0.5 accuracy class ~~shall be used~~. The parties may agree to ~~on~~ install~~ing the~~ metering with greater~~higher~~ accuracy.

~~8.~~9. The metering point~~node~~ shall be organized in such a way that the accuracy class of active energy metering under ~~in~~ the condition~~s~~ of a 1.0 power~~capacity~~ factor shall satisfy the requirements given in the table below:

Nominal load Limits (%)	Network connection capacity

	>10 MW	1-10 MW	<1 MW
10 – 120%	±1.0%	±2.0%	±3.0%
5-10%	±1.5%	±2.5%	±3.5%
1-5%	±2.5%	±3.5%	±4.0%

~~9.~~10. If~~n~~ the accuracy of the meter transformer for the case ~~the requirement~~ envisaged in Paragraph 8~~7~~ of this Article ~~regarding the accuracy of the metering transformer~~ is not satisfied, it will not be considered a ~~as the~~ violation of this code~~rule,~~ provided ~~if~~ the requirement envisaged in Paragraph 9~~8~~ of this article ~~regarding the accuracy of metering node~~ is satisfied ~~for this metering point~~.

Article 7~~6~~. Metering register

1. The Distribution Licensee is obliged to produce a metering register. For this purpose, the Distribution licensee is obliged to keep the following data for each metering point:
   a. dates of installing and changing Retail~~of~~ Customer~~consumers'~~ meters;
   b. initial meter reading when~~ile~~ meter installed~~ing the meter~~;
   c. the number and/or seal number of Retail Customer~~consumers'~~ meters;
   d. location (address) of meter;
   e. any activity carried out on~~in~~ the Retail Customer ~~consumer's~~ metering points~~node~~ (including inspection, change-out, repair, ~~and~~ etc.); and
   f. technical documentation pertaining to ~~of~~ metering equipment.

Article 8. Evolving metering technologies

1. The Distribution Licensee may use evolving metering technologies or processes that meet or exceed the functional requirements set forth for metering installations in this Retail Metering Code.
2. Use of such evolving metering technologies or processes must first be agreed between the Distribution Licensee and the Retail Customer.
9. A Distribution Licensee shall, upon being directed to do so by the Commission, enter into an agreement with a Smart Metering Entity or the Energy Service Company, in a form approved by the Commission, which sets out the roles and responsibilities of the parties in relation to the installation of smart metering and the exchange of information consistent with specifications prescribed by the Commission and any relevant Government of Georgia legislation.

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~~**Article 7. Connection of the Micro Power plant to the network**~~

1. ~~Micro Power Plant is a renewable energy source under ownership of the customer that is connected to the electricity distribution network on electricity consumption place of electricity customer and designed capacity of which does not exceed to the 100 kW.~~
2. ~~The Distribution Licensee is obliged to support the integration of Micro Power Plants in the distribution network. For this purpose the Distribution Licensee is obliged to provide technical or other type consultancy to the Applicant seeking for the connection of Micro Power Plant to the distribution network regarding the network connection for free of charge. After 10 working days from the receiving of the Connection Application (according to the Annex 10) the Distribution Licensee shall issue technical conditions for connection for free of charge (except the cases envisaged in Paragraph 6 of this Article).~~
3. ~~The responsible person of the Distribution Licensee for the receiving the application is obliged to indicate any defect and/or incomplete filling (in case of such an even occurs) while summiting the application; If correction is available in place, the responsible person shall allow the amendment of application or submitting of new application. Detected gaps in the filled application does not exempt the Distribution Licensee from duties to issue technical conditions for the connection of Micro Power Plant in established timeframe (according to the Annex 10) – to issue technical conditions in 10 working days free of charge (except the cases envisaged in Paragraph 6 of this Article).~~
4. ~~The Distribution Licensee is obliged to indicate a contact person from the licensee (name, last name, position, and e-mail and phone number) which will be a responsible person from the Distribution Licensee for relationship with the Applicant.~~
5. ~~After receiving the application and before issuing the technical conditions, the Distribution Licensee is authorized to contact the applicant and require clarification of certain issues given in the application or on-site inspection.~~
6. ~~In case the designed capacity of Micro Power Plant is 20 % more than connection capacity of relative retail customer, the Distribution Licensee is authorized to identify the defect of application – for the connection of Micro Power Plant to distribution network (and accordingly does not issue the technical conditions) and request from the Applicant to increase the connection capacity to the distribution network according to the requirements of the GNERC Resolution #20, September 18, 2008 and only after satisfying this condition to issue technical conditions for the connection of Micro Power Plant to distribution network.~~
7. ~~Connection of Micro Power Plant shall be carried out free of charge with simplified procedure (without procedure defined in the Article 77), based only on the technical conditions issued by the Distribution Licensee. While developing the technical conditions the Distribution Licensee is obliged to define necessary technical conditions in such a way that its implementation shall produce the least costs (taking into the consideration the actual circumstances)~~
8. ~~The customer that is going to build the Micro Power Plant and supply (sell) the excess electricity to Distribution Licensee for the purpose of settlement or offset, is obliged to submit the application for the connection of Micro Power Plant to distribution network~~

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~~(according to the Annex #10) with enclosed documents (except the cases envisaged in Paragraph 16 of this Article) to the Distribution Licensee and receive the technical conditions for the connection of Micro Power Plant to distribution network from Distribution Licensee within set timeframe.~~

9. ~~The customer that plans the construction of Micro Power Plant is authorized to submit an application to Distribution Licensee and request drawing up of relevant agreement on excess electricity delivered to the network and its settlement, which shall be drawn up within 5 working days after connection of Micro Power Plant to the network.~~
10. ~~The possible schemes of Micro Power Plant connection to the network are:~~
    a. ~~Synchronous – when Micro Power Plant works in Parallel Mode with distribution network;~~
    b. ~~Asynchronous – When Micro Power Plant is connected via inverter to the distribution network;~~
    c. ~~Isolated – when Micro Power Plant is not connected to the network according to the provisions defined in Subparagraphs a-b of this Paragraph and works in autonomous mode.~~
11. ~~In case the confirmation of compliance with technical conditions the Distribution Licensee is obliged to provide reconstruction of metering node with their own means before connection of Micro Power Plant to the network; it includes the purchase and installation of two-direction meter with relevant standards and installation in place, also connection of the meter to the relevant ASECCM systems.~~
12. ~~Despite the requirement envisaged in Paragraph 11 of this Article the Distribution Licensee does not require to buy any other technical means and provide construction/installation for the purpose of Micro Power Plant connection to the distribution network (except purchase and installation of the meter).~~
13. ~~The customer who intends to construct a Micro Power Plant is responsible for carrying out relevant project design and construction, results on the negative environmental impact (including environmental pollution, noise, etc.) and getting any type of permissions (in relevant case envisaged in legislation of Georgia).~~
14. ~~Despite the requirement envisaged in Paragraph 13 of this Article the Distribution Licensee is authorized to receive decision on connection of Micro Power Plant to the distribution network based only on the actual state of implementation of the technical conditions issued by him.~~
15. ~~After finishing the construction of Micro Power Plant the customer sends message to the Distribution Licensee's contact person on this event. After 5 working days from the receiving of the message the Distribution Licensee is obliged to study on site the compliance of performed activities with issued technical conditions and act according to the one of the rules defined below:~~
    a. ~~in case the compliance to support the installation of the meter with relevant standard and connection of Micro Power Plant to the network;~~

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b. in case the incompliance to indicate the defect and define additional time for its fixing.

16. The customer that intends to construct a Micro Power Plant is authorized not to submit the connection application to the Distribution Licensee and make project design without technical conditions of Distribution Licensee, construct and connect in its network the Micro Power Plant, only in case the abovementioned Micro Power Plant is isolated (in autonomous mode) from the distribution network, which means that Micro Power Plant shall not be connected to the distribution network synchronously or via the inverter.

17. The Distribution Licensee is not obliged to perform requirements envisaged in Paragraph 11 of this Article:

    a. if the customer is connected to the 0.4 kV voltage network and intends to construct a Micro Power Plant only for its necessities (does not require to draw up excess power purchase agreement) and at the same time designed capacity of this Micro Power Plant does not exceed the customer's connection capacity to the distribution network;

    b. in case of an event envisaged in Paragraph 16 of this Article.

18. The customer that owns the Micro Power Plant, shall not cause the worsening of electricity quality at the distribution network connection point above the set limits; in addition, by this period:

    a. voltage increase shall not exceed +6%;

    b. connection of Micro Power Plant Shall not cause worsening of capacity factor out of the ±0.8 limits;

    c. Micro Power Plant shall not cause interphase imbalance (asymmetry) for more than 2 % in three phase system;

    d. short circuits caused by the Micro Power Plant shall not exceed established norms for given voltage levels of distribution network.

19. In certain cases, if relevant research shows that the short circuit level is low in Micro Power Plant's connection point and Micro Power Plant can significantly effect on neighboring electricity network, the Distribution Licensee is authorized to request from such customer the provision of additional security measures different (within reasonable limits) from the requirements of standard draft envisaged in technical conditions.

Annex #10

Application form for the Connection of Micro Power Plant to the Distribution Network

Filled by the Applicant	
Contact Information	
Subscriber Number:	Address:

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City/municipality:	Phone:
E-mail:	
Description of Power Plant	
Type of energy source: Solar panel ☐ Wind ☐ Hydro ☐ Biomass ☐ Other ☐ Please indicate:	
Connection type: Asynchronous ☐ Synchronous ☐	
Power Plant designed capacity: _____ (kW)	
Customer capacity: _____ (kW)	
Annual Designed/forecasted Electricity Production: _____ (kWh)	
Forecasted Annual Demand of a Customer: _____ (kWh)	
Production cycle: daily ☐ Seasonal ☐ Annual ☐	
Voltage Level: _____ kV	Phase: One phase ☐ Three Phase ☐
Purpose of produced electricity: ☐ Self-consumption ☐ selling of excess electricity ☐ Self-consumption and selling of excess electricity	
Was the power purchase agreement requested? yes ☐ no ☐	
Type of existed meter: two direction ☐ one direction ☐	
Form of technical conditions: written ☐ electronic ☐	
estimated date of network connection (start of operation):	
Enclosed Information	
☐ Electrical one-line scheme (including control and safety schemes)	
☐ Situational Plan	
☐ Passport Data of Producer	
☐ Existed permits (if required)	
Applicant's Signature:	**Date:**
Filled by Licensee	

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~~Remark:~~
~~Distribution Licensee:~~
~~Application receiving date:~~
~~Signature of Responsible Person:~~

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Chapter X. Distribution Network Connection Code~~Rules for Connection to the Distribution Network~~

Article 1~~74~~. Scope and Objectives~~Aim~~

1. This Distribution Network Connection Code defines the r~~R~~ules for connection to the Distribution Network including ~~define basic~~ technical and organizational requirements~~conditions for connection to the Distribution Network and its use~~.
2. The objectives of this Distribution Network Connection Code are to~~Aim of rules for connection to the Distribution Network is to~~:
   a) Ensure all Distribution Network Users, including Retail Customers that are load customers or generators, are subject to consistent and non-discriminatory requirements for connection;
   ~~a)~~b) Ensure secure ~~operation~~ and uninterrupted~~steady~~ operation ~~performance~~ of the Distribution Network and all electrical equipment/installations connected to the Distribution Network~~it~~.;
   ~~b)~~c) Define requirements at ~~(for~~ each voltage level~~)~~ for connection to the Distribution Network~~features of Distribution Network operation modes at connection points~~; and
   ~~c)~~d) Set procedures for review of connection applications and for connecting Distribution Network Users, including Retail Customers that are load customers or generators, ~~power plants (except 110 KW and less projected capacity power plants) and new customers at 35-110 KW voltage level~~ to the Distribution Network.
3. This Distribution Network Connection Code addresses:
   a) General provisions for connection to the Distribution Network;
   b) Applications for connection to the Distribution Network and the procedure to be followed for reviewing applications for connection to the Distribution Network;
   c) The defined point of connection to the Distribution Network;
   d) Procedures for connecting to the Distribution Network;
   e) Technical and other requirements for connecting to the Distribution Network;
   f) Information to be provided by connection applicants related to their connections;
   g) Access to the connection point; and
   h) Connection of Micro-power plants of Net Metering Customers to the Distribution Network.

~~3. For the purposes of this chapter procedures and requirements provided for power plants apply only to power plants with more than 100 KW installed/ projected capacity.~~

Article 2~~75~~. General Provisions for connection to the Distribution Network

1. ~~Arrangement (construction) of c~~Connections to the Distribution Network shall comply with this Distribution Network Connection Code ~~ese rules~~ and relevant ~~spective~~ legislation and technical and construction regulations ~~operating~~ in Georgia.

~~2. Applicant seeking connection of power plant or new customer at 35-110 KW voltage to the Distribution Network is responsible for complying with technical conditions of connection set by the Distribution Licensee and for expenses associated with activities necessary for connection to the Distribution Network.~~

~~3.~~2. The Distribution Licensee ~~within its competence~~ is obliged to inspect and check ~~compliance of~~ all connection ~~electrical~~ equipment/ installations to ensure ~~be connected~~ compliance with the

Comment [CB1]: Added connections of Micro-power Plants, and incorporated connections of customers at less than 35 kV. Added reasons for a distribution licensee to refuse a connection request, and made distribution licensees responsible for all aspects of connections including construction.

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technical conditions ~~and~~ agreed to with the connection applicant ~~draft before~~ prior to connection~~ng it~~ to the Distribution Network.

~~4.~~3. The Distribution Licensee is obliged to ensure~~control~~ all connections comply with its design and quality standards.~~iance of electricity quality supplied or received at network connection points of power plants and Users connected at 35-110 KW voltage levels with quality standards set under these rules.~~

~~5.~~4. If a Distribution Network User breaches technical specifications ~~norms~~ given in this Distribution Network Connection Code, ~~ese rules~~ the Distribution Licensee shall ~~is obliged to~~ define a reasonable amount of time for eliminating ~~improving~~ the breach~~violation~~, and if the Distribution Network User fails to eliminate the breach in the specified time, to disconnect the Distribution Network User from the Distribution Network ~~if the latter does not fulfill such requirements~~.

5. In the case of new connections to the Distribution Network, the connection point is determined by the Distribution Licensee in accordance with this code~~ese rules~~.

6. A Distribution Licensee can refuse to connect a connection applicant, or disconnect an existing Distribution User, under the following conditions:
   a. Contravention of the laws of Georgia;
   b. Failure of the Distribution User or connection applicant to comply with a directive of the Distribution Licensee that causes a violation of the conditions of a Distribution Licensee's license;
   c. A materially adverse impact on the safety or reliability of the Distribution Network, or on the quality of distribution service;
   d. Adverse impact on worker and/or public safety (beyond normal risks);
   e. A materially adverse impact on the efficiency of the Distribution Network; and
   f. Inability of the Distribution Licensee to perform planned inspections and maintenance;
   ~~6.~~g. If the connection applicant or existing Distribution Network User owes the Distribution Licensee money for services, or to fulfil a security deposit.

7. If a Distribution Licensee refuses to connect a connection applicant, the Distribution licensee shall inform the connection applicant of the reasons why, and make an offer to connect subject to the connection applicant resolving all issues to the satisfaction of the Distribution Licensee. The Distribution Licensee shall not connect a connection applicant until all such issues are resolved to its satisfaction.

8. Connection applicants are responsible for all expenses associated with activities necessary to connect them to the Distribution Network. The manner of payment for connection charges is set out in the Electricity Supply and Consumption Rules, and charges are as determined by the Commission.

9. The Distribution Licensee is responsible for constructing and commissioning all connection equipment following finalization of the connection agreement by the parties to the agreement. The Distribution Licensee shall construct and commission the connection facilities in accordance with the technical and financial conditions, and schedule, specified in the connection agreement.

10. The Distribution Licensee shall be allowed cost recovery for processing connection requests and undertaking connection studies according to conditions and charges established by the Commission.

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Article 3~~76~~. Application for Connection to the Distribution Network

1. Applicants seeking to connect~~ion~~ to the Distribution Network must submit~~s respective~~ a connection application to the Distribution Licensee (either in writing or electronically).
2. Connection applications for Retail Customers that are load customers ~~to the Distribution Network~~ shall comprise the following:
   a) Name and location of applicant's load unit to be connected~~(address, cadastral code)~~;
   b) Maximum requested active and reactive ~~full~~ capacity;
   c) List of main electrical equipment/ installations of the unit to be connected, its type (~~electrical turbine,~~ steel melting furnace, compressor, ~~tuning inverter,~~ lighting etc.) and nominal active capacity;
   d) Requested nominal voltage of connection;
   ~~e)~~ In the case of ~~requesting~~ connections to the Distribution Network at~~of~~ 35-110 kV nominal voltage ~~to the Distribution Network~~, the Distribution Licensee shall be ~~is~~ entitled to request~~ire~~ additional data and ~~except the~~ information beyond that envisaged in the connection application such as the ~~:~~
   ~~e.a.) E~~expected annual consumption schedule, ~~and total electricity amount;~~
   ~~e.b.) P~~planned date for~~of~~ completing external electricity supply works on the unit under its ownership and date of readiness for the connection to the Distribution Network, ~~.~~
   e) ~~e.c) O~~bank ~~fficial~~ account details, etc. ~~from the bank.~~
3. Connection a~~A~~pplications for Retail Customers that are generators ~~connecting power plant to the Distribution Network~~ shall comprise the following ~~information~~:
   a) Name and location of generator~~power plant~~;
   b) Primary switching ~~commutating~~ schemes (single line electrical diagram) of generator plant~~power plant~~;
   c) Primary energy source (Hydro, Solar etc.);
   d) Nominal voltage level requested for the connection ~~to the Distribution Network~~;
   e) Projected capacity of the generator~~power plant~~;
   f) Generator operating~~Power plant regulation~~ type (p~~P~~eak load, base load, intermediate load, ~~basis~~ etc.);
   g) Technical data of each generator ~~energy~~ unit and in ~~/~~aggregate for the~~of~~ power plant;
      g.a.) Nominal capacity;
      g.b.) Type of Turbines;
      g.c.) Technical data for~~of~~ the generator;
      g.d) Information on participation in frequency regulation ~~(in accordance with requirements set forth in article 23)~~;
      g.e) Information on participation in voltage regulation ~~(in accordance with requirements set forth in article 23)~~;

   h) The p~~P~~lanned date for~~of~~ completing the external electricity supply works and presumed~~able~~ date of readiness ~~of power plant~~ for ~~the~~ connection to the Distribution Network for testing.

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4. The connection a~~A~~pplicant that is a Retail Customer that is a load customer or a generator connected at 35 kV or above shall~~is obliged to~~ provide ~~give~~ prior notice to the Distribution~~patch~~ Licensee on any activity that might lead to ~~cause~~ changes in~~to the applicant's~~ its connection scheme.

Article 4~~77~~. Review of ~~the~~ Connection Application~~s on Connection of Power Plant and New User~~ at 35-110 kV voltage levels~~KW to the Distribution Network~~

~~1. If connection of power plant and new User at 35-110 KW voltage level to the Distribution Network is requested such connection shall be based on mutual agreement between the parties. If agreement is not reached the Dispatch Licensee is anyway obliged to issue offer of connection (technical condition) free of charge within the terms given in paragraph 3 of this Article and Applicant is responsible for the provision of drafting and construction works necessary for connecting to the network in accordance with mentioned technical conditions.~~

1. When a new Distribution User wishes to connect to the Distribution Network, it must submit a connection application to the relevant Distribution Licensee. The type of connection application shall be selected from the various types of connection applications posted on the website of the Distribution Licensee.
2. The Distribution Licensee is obliged to check each~~whether~~ application that is submitted to ensure it is of a valid format and ~~in an accepted form and whether it~~ contains all information envisaged in Article3~~76~~ -within 5 days of~~upon~~ receipt of the application. In cases ~~and in case~~ of non-compliance, the Distribution Licensee shall provide ~~give~~ written notice ~~fication~~ to the connection applicant that its connection application is non-compliant, and indicate what the connection applicant must do to remedy the non-compliance. ~~with due indication. In~~ Five~~5~~ days following ~~after its~~ submission of the application, the connection request is considered valid if the Distribution Licensee has not provided written notice to the contrary. ~~(if there is no non-compliance) is considered to be accepted and essential discussion of the application begins in order to prepare offer of connection.~~

~~3. Within 60 (Sixty) working days after receiving application of connection to the network the Distribution Licensee sends its offer on connection to the Distribution Network to relevant applicant which is based on the review of the application, investigation of possible impact of applicant's electrical equipment/installations on the network and opinion (research regarding impact on the Distribution Network) of the Dispatch Licensee.~~

~~4.~~ 3. For connections at 35 kV and above, t~~T~~he Distribution Licensee shall prepare~~s~~ a draft offer of connection within 25 days of~~upon~~ receipt of the application and shall send~~s~~ it to the Dispatch Licensee together with a copy of the application ~~copy~~ and any additional supporting documentation that the Distribution Licensee deems appropriate~~submitted by the applicant (if any) for approval~~. The Dispatch licensee shall review~~s~~ the documentation received from the Distribution Licensee and provide~~gives~~ its consent or alternatively, provide ~~makes~~ comments and well-grounded suggestions for ~~requirements on~~ amending the draft connection offer~~ of the connection~~. The Distribution Licensee shall~~is obliged to~~ take the suggestions ~~ose well-grounded requirements~~ of the Dispatch Licensee into consideration in the process of preparing a final draft ~~of~~ connection offer. If the Distribution Licensee has not received a response from the Dispatch Licensee prior to expiration of

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the term of the approval of the draft connection offer, it shall be deemed that the Dispatch Licensee grants its consent without comment.

4. 4.1. During itsthe review of the draft connection offer of connection the Dispatch Licensee is entitled to request further information and discussion onf the draft connection offer with the Distribution Licensee and/or provision of additional information any time.

5. If the Distribution Licensee has not received answer from the Dispatch Licensee after expiration of the term of approval of the draft offer of connection by the Dispatch Licensee envisaged in paragraph 4 of this Article it is considered that the Dispatch Licensee consents to the draft and has no comments to it.

56. The Distribution Licensee is entitled to contact the connection aApplicant any time during the review of the application and request additional information and/or discussion or clarification of conditions set forth in the application.

67. For connection requests at less than 35 kV, the Distribution Licensee shall submit its offer to connect the applicant within 20 business days of receipt of a valid connection application.

7. For connection requests at 35 kV and greater, the Distribution Licensee shall submit its offer to connect the applicant within 60 (Sixty) working days of receipt of a valid connection application.

8. The Distribution licensee's offer to connect shall be based on its review of the application, investigation of potential impact of the applicant's electrical equipment/installations on the Distribution Network and, in the case of an application request at 35 kV and greater, any opinion offered by the Dispatch Licensee.

9. The oOffer to connect of the connection to the Distribution Network shall comprise the technical conditions of connection that shall be based on the conditions requested by the connection applicant through relevant application except cases envisaged in paragraph 9 of this Article.

108. RThe reasons for not issuing or refusing an offer to connect of connection to the network by the Distribution Licensee shall not includebe:

a) An eExisting offer and/or technical condition for connecting to any other applicant to the same facility on the Distribution Networksub-station network within new connection area;

b) Insufficient transformering or line capacity of sub-station(s) in new connection area;

c) Deterioration of Insufficient capacity of electricity network caused by worsening operatingonal conditions on f the specific parts of the Distribution Network such as , its amortization (out dating) or operation at different parameters than envisaged in the project or possible congestion caused by the new connection.

119. The Distribution Licensee shall is entitled to offer the connection applicant alternative different connection conditions or measures than it is rrequested in the connection aApplication or additional measures for connecting to the requested voltage level (on the basis of due reasoning) under any if one of the following circumstances becomes obvious during review of the application:

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a) Requested connection capacity cannot be accommodated by ~~does not correspond to~~ the requested voltage level;

b) Connection is not possible at the ~~with~~ capacity requested by the connection a~~A~~pplicant owing to limited available ~~due to the project~~ capacity of the Distribution Network at the requested connection location;

c) The ~~Distribution does not have~~ nominal voltage level requested by the Applicant is not available at the~~at~~ sub-station where ~~to the network of which~~ the connection is requested.

10. Offer of connection to the Distribution Network shall comprise:

a) Technical Conditions;

b) Detailed description of works to be undertaken for ensuring connection of~~through~~ requested capacity;

c) Information related to the connection point (location, connection capacity and voltage level, existing capacity of the network of that substation to which applicant's load/generation ~~power plant~~ shall be connected, etc.);

d) Information related to the cost of the connection.

11. Technical conditions issued by the Distribution Licensee may include ~~comprise indications regarding~~ additional measures directly related to the connection, ~~of Applicant to the Distribution Network (Sub-station or transmission line streaming from the sub-station)~~ such as ~~installation of connection units and~~ metering points, construction/reinforcement of ~~transmission~~ line(s) ~~connecting to the Distribution Network~~, replacement/additions of transformers, switchgear, relaying, protection, communications, etc. ~~strengthening network (in case of multi-branching or tying in) – from connection point to substation of the Distribution Licensee, measures for changing commutation equipment due to the new connection to the Distribution Licensee's Network, management and relay protection,~~ and any ~~also additional activities at the Distribution Network (only in cases envisaged under sub-paragraph 9 "b" of this Article).~~

12. Technical conditions issued by the Distribution~~Transmission~~ Licensee ~~to the Applicant~~ shall not include obligations to ~~of~~ construct~~ion~~ or strengthen~~ing~~ distribution network~~electrical~~ equipment ~~and/or network that require expenditures exceeding minimum expenditures envisaged under~~ beyond minimum technical norms and standards ~~for connecting capacity requested by the Applicant to the network~~.

13. Technical conditions for ~~on~~ connecting ~~power plant~~ to the Distribution Network shall be issued for the~~a~~ term requested by the connection a~~A~~pplicant in its connection application ~~for connection to the Distribution Network~~, but ~~it~~ shall not be less than 24 months. Amendments to the technical conditions can be made on the basis of ~~the~~ mutual agreement between the parties.

14. The connection a~~A~~pplicant shall provide~~give~~ written consent to the Distribution Licensee within 20 days of~~upon~~ receipt of its connection offer ~~of connection~~, or otherwise commence discussions on

amending the connection ~~ng issue of making amendments to~~ offer (if such is necessary). If neither of these conditions is met, ~~, otherwise~~ the offer will be revoked automatically.

Article 5~~78~~. Point of connection to the Distribution Network

1. The c~~C~~onnection point shall be at the ~~coincide with balance (~~property boundary~~) border~~ between the Distribution Network User and the Distribution Licensee.
2. The Distribution Licensee and Distribution Network User bear ~~respective~~ operational responsibility for all equipment up to the property boundary~~division border~~ (connection point) unless ~~if the~~ current legislation or agreement between the parties ~~does not~~ states otherwise.
3. The Distribution Network User shall be responsible for operation and maintenance of ~~own and operate~~ all electrical equipment/installations on its side of the connection point and ensuring ~~shall be responsible of its operation and~~ compliance with security norms.

Article 6~~79~~. ~~Connection~~ Procedure for Connection to the Distribution Network at voltage levels less than 35 kV

1. Requirements of this Article apply only to connection of Retail Customers, including load customers and generators, at voltage levels less than 35 kV.
2. After receiving its connection offer and before connecting to the Distribution Network, a connection applicant shall coordinate construction activities of the electrical component of its connection equipment with the Distribution Licensee.
3. Before connection to the Distribution Network, the connection applicant shall provide written notification to the Distribution Licensee about its readiness to be connected.
4. The Distribution Licensee shall check conformity of the connection applicant's electrical equipment with this code and technical conditions of connection within 5 working days of receipt of notification that the connection applicant is ready to connect.
5. In the process of checking conformity the Distribution Licensee shall:
   a) Check conformity with current legislative acts of Georgia;
   b) Inspect electrical equipment/installations to be connected.
6. The Distribution Licensee shall define a reasonable term to the connection applicant for improving faults it has detected, if any, and after doing so, the connection applicant shall send another notification of readiness for connection to the Distribution Licensee.
7. If no faults have been observed, the Distribution Licensee shall connect the connection applicant to the Distribution Network and the procedure for connecting the applicant is concluded except in cases documented in paragraph 8 of this Article.
8. If the connection applicant is a generator, more complex checking/testing of the power plant before connection may be undertaken in accordance with current legislation.

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Article 7. Procedure for Connections to the Distribution Network at 35 kV and Greater

1. Requirements of this Article apply only to connection of Retail Customers, including load customers and generators, power plant and new User at the 34-110 kVKW voltage level.

2. After receiving its connection offer, the connection applicant shall of connection to the Distribution Network and before connecting to it the Applicant is obliged to coordinate with the Distribution Licensee on construction activities relating to the electrical component of its connection equipment.part of construction draft of the unit to be connected with the Distribution Licensee.

3. Before After undertaking activities envisaged under technical condition of connection and coordinated draft and before connection to the Distribution Network, the connection applicant shall provide gives written notification to the Distribution Licensee about its the readiness to be connected including the and encloses following data and information:

   a) General description of the unit to be connected;

   b) MPrecise anufacturer's passport data and schematics , draughts and schemes of primarymain electrical equipment/installations;

   c) Information on relay protection and automation and electrical metering systems;

   d) Metering protocols of electrical equipment of primary and secondary commutation of Applicant's substation prepared by accredited body (Protocol shall include the conclusion on its worthiness);

   e)d) List of staff responsible for the operation of Applicant's electrical equipment/installations together with qualification group and contact information;

   f) Technical document confirming connection to the high level ASECCM system (required from power plants and those applicants that plan to be registered as utility).

4. The Distribution Licensee is obliged to check conformity of the connection aApplicant's electrical equipment/installations with this codeese rules and the technical conditions (and/or with coordinated draft) of the connection (hereinafter- conformity) within 10 working days ofafter receipt of the readiness notification.

5. In the process of checking conformity the Distribution Licensee is obliged to:

   a)c) Check enforcement of draft coordinated in accordance with technical conditions and conformity with current legislativenormative acts of Georgia; and

   b)d) Inspectiion of electrical equipment/installations to be connected.

   6. The Distribution Licensee shallis obliged to define a reasonable term to the connection aApplicant for improving faults it has detected, if any, and after doing so, the connection aApplicant shallis obliged to send another notification of readiness for connection once again to the Distribution Licensee.

   7. In case if no faults have been observed, after conformity check the Distribution Licensee shall issues document stating conformity (Technical document of connection to the Network) and connects the Applicant's Electrical equipment/installation to the network and the procedure for connecting the connection applicant is concluded, (except in cases documented given in paragraph 8 of this Article). As a result procedure of connecting Applicant to the Network is concluded.

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Comment [CB2]: Not needed if Distribution Licensee responsible for constructing connection.

Comment [CB3]: Same as previous comment.

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8.9. In case if the connection aApplicant is a generatorpower plant or Distribution Network User that wishes to register as a participant inof wholesale trade, more checking of its metering point, connection to the network (putting under voltage), also complex checking/testing of the power plant before connection may be for putting into operation is undertaken in accordance with current legislation.

Article 80. Technical requirements necessary for connection to the Distribution Network

1. During new cConnections to the Distribution Network every electrical equipment/installation to be connected shall meet the standards envisaged under this codeese rules and current legislation of Georgia.
2. Electricity voltage quality at connection points of the Distribution Network shall meet norms set forth in this codeese rules and current legislation. The , hereby dDistribution Licensee is responsible for ensuring its design criteria and requirements under current legislation are met.those parameters of voltage level that it is able to improve and/or alter.
3. In order to avoid damage (losing phase, step displacement of voltage etc.) to the Distribution Network User's electrical equipment/installations that may occur owing to an be caused by the faultaccident on occurred in the Distribution Network, the Distribution Network User is obliged to provide its electrical equipment/installations with relevant protective devices and is bears responsible ility for ensuring their proper operation.
4. Protection installations of the Distribution Network User's electrical equipment/installations shall be compatible with protection installations of the transmission lines and sub-stations feeding it.
5. Whereas connection point is located at the sub-station of the Distribution Licensee protection facilities of electricity transmission line streaming from connection unit shall be compatible with protection facilities on that sub-station.

6.5. In case of connecting new User to the network or modifying existing connection tThe Distribution Licensee is entitled to attend any testing of the Distribution Network User's relay protection and automation. The Distribution Licensee shall be notified of the pPlace, date and exact time of such testing shall be notified to the Distribution Licensee in advance and in accordance with this article 80 of these rules.

7. Protective and/or functional grounding of User's electrical equipment/installations shall be arranged in accordance with coordinated draft.

8.6. Management of distribution electricity transmission lines entering the Distribution Network User's installation Unit shall be undertaken through respective switching commutation equipment that shall comply with design standards required by the Distribution Licensee.

9.7. Features of electrical equipment/installations connected to the Distribution Network shall comply with the following indicators of electricity voltage quality (at connection points):

a) Voltage Flicker value shall be within following limits:

a.a) Frequency of incidents within interval: 0.22- 600 minutes

Comment [CB4]: Already covered above.

Voltage Level	Short Term~~Pst~~	Long term~~Plt~~
Average Voltage, low voltage	0.7	0.5

a.b) Frequency of incidents within interval: 0.02-0.22 minutes

- ~~amount~~ up to 3 incidents is permissible.

a.c) Frequency of incidents within interval =<0.02 minutes

- ~~amount~~ up to 5 incidents is permissible.

b) Harmonic distortion:

b.a) Limits of harmonic distortion of voltage (%) at connection points shall comply with requirements given in the following schedule:

Voltage at connection point	Individual Harmonic Distortion IHD (%)	Total Harmonic Distortion THD (%)
35 KW and lower	3	5.0
110 KW	1.5	2.5

b.b) Harmonic Distortion limits of Distribution Network User's current at connection points shall comply with requirements of the following schedule:

Percent (%) of Maximum Harmonic Distortion towards I_L						Maximum Total
I_{SC}/I_L	<11	11≤h<17	17≤h<23	23≤h<35	35≤h	TDD
<20*	4.0	2.0	1.5	0.6	0.3	5.0
20<50	7.0	3.5	2.5	1.0	0.5	8.0
50<100	10.0	4.5	4.0	1.5	0.7	12.0
100<1000	12.0	5.5	5.0	2.0	1.0	15.0
>1000	15.0	7.0	6.0	2.5	1.4	20.0

Where,
I_{SC} - Maximum value of short-circuit current at connection points;
I_L - Maximum Value of current requested by the Applicant (Basic Component) ;
TDD – % of Total Maximum Harmonic Distortion of User' current towards I_L

c) Voltage asymmetry caused by connecting the Distribution Network User's electrical equipment/installations to the Distribution Network at the connection point shall not exceed 1.3%.

~~10.~~8. At the 6-10-35-110 KW bus bar of a power plant and Transmission Licensee sub-stations where the Distribution Licensee's network is connected, ~~in regular installed modes~~ voltage values shall be regulated from nominal voltage (U_{nom}) value to 1.05 U_{nom} ~~value~~ with integral probability ~~within~~ no less than 95% of time, except those points where the Distribution Network User's ~~of Distribution Licensee at~~ 6-10 KW voltage is~~are~~ supplied with electricity through autotransformer connections.

~~11.~~9. Voltage deviation during normal operation of the Distribution Network is admissible within the following limits: during the week ~~with integral~~ probability ~~within~~ no less than 95% of time shall be within ±7.5%.

~~12.~~10. Distribution Network Users ~~connected to the Distribution Network~~ are obliged to ensure a load ~~capacity~~ factor of no less than 0.9 at connection points. The Distribution Licensee is entitled to set diverse requirements through technical conditions of connection within 0.9 and 1.0 range ~~interval~~ of power~~capacity~~ factors by taking into consideration voltage level, loading and type of electrical equipment/installations ~~to be~~ connected.

~~13.~~11. Connection to the Distribution Network shall be made so that the Distribution Licensee has the ~~d~~ technical capacity to ~~possibility of~~ disconnect~~ing~~ all connections to its network.

~~14.~~12. For proper planning of connection points on~~to~~ the Distribution Network and/or external ~~electricity supply~~ networks, the Distribution Licensee shall specify the ~~envisage~~ type, character and any technological peculiarities~~y~~ of the Distribution Network User's loading in order to ensure proper and secure functioning of electrical equipment/ installations ~~to be~~ connected.

Article ~~98~~1. Additional requirements relating to Distribution Network ~~towards~~ Users connected at 35-110 kV~~KW voltage level~~

1. The Distribution Network User is obliged to have a clear and unambiguous identification~~marking~~ system that shall reflect name and nomenclature of the Distribution Network User's installation~~unit and/or its electrical equipment/installations~~.
2. Identification ~~Marking~~ of the unit and/or electrical equipment connected to the Distribution Network shall comply with the practice of the Distribution Licensee. I~~n case i~~f the name and/or nomenclature of the Distribution Network User's installation~~Unit and or electrical equipment/installations~~ raises ambiguity or coincides with the name and/or nomenclature of another installation, ~~s~~ the Distribution Licensee is entitled to require ~~from~~ the Distribution Network User to change the ~~marking and/or~~ name of the ~~unit and/or electrical equipment/~~installation~~s~~.
3. ~~Protective and/or active grounding of the~~ The Distribution Network User's electrical equipment/installations shall be properly grounded.~~connected to grounding contour.~~
4. The Distribution Network User's grounding system shall not put other Distribution Network Users at risk. Hazardous electrical potential that may arise on the frames of electrical equipment/installations and/or in the electrical network shall not exceed grounding zone limits. Placing a Distribution Network ~~utting of power plant's and~~ User's electrical

equipment/installations under voltage is prohibited before conducting relevant inspection on the security of grounding.

5. During normal operation of overhead lines in ~~uninhabited/~~remote areas, the minimum distance between wires and ground surface shall not be less ~~ower~~ than values specified ~~given~~ in the table below~~schedule~~. Minimum distances are defined during maximum value of sag~~bilge~~ (during maximum ambient temperature~~ at mentioned areas~~, without taking into consideration additional heating of wires caused by current loading, or during ~~considering~~ icing conditions, without considering wind impacts).

Location description	~~Dimension,~~ Meters
Unsettled area	6
Remote area	5
Inaccessible slopes, cliffs, mountain tops etc.	3

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6. Passing overhead lines over buildings and constructions~~s~~, except those industrial buildings and constructions that are built of~~with~~ incombustible materials, is prohibited. Vertical distances from overhead lines to industrial buildings and constructions that are built with incombustible materials shall not be less than values given in the following table~~schedules~~ during maximum value of sag~~the bilge~~:

Operational conditions of electricity transmission line	Plot, Construction	Minimum admissible distance (meters)	
		Up to 35 kV~~KW~~ Including	36-110 kV~~KW~~
Normal condition	Distance to ground surface	7	7
	Distance to the Building or Construction	3	4
Uneven terrain~~Breaking transmitter in adjacent sweep~~	Distance to ground surface	4.5	4.5

7. Management (control), relay protection, automation, alarm, and metering circuits shall be performed by shielded ~~screened~~ cable. Shielded ~~creen~~ grounding facilities shall exist in all relevant enclosures ~~cabin that shall be~~ envisaged in the planning process ~~of drafting~~.

8. High voltage distribution facilities~~y~~ shall be equipped with switching ~~operative blocking,~~ in accordance with the connection rules ~~of arranging electrical installations~~ and as~~shall be~~ envisaged in the planning process~~draft~~.

9. Isolation of every neutral of ~~the~~ transformers connected to 110 kV~~KW voltage level~~ is required and the~~its~~ method of grounding shall be selected so that during operation without grounding the transformer shall remain~~ed~~ undamaged (in cases of necessity, isolation of the neutral shall have ~~be protected by~~ a protective device or overload limiting device~~s~~).

10. For ensuring reliability of the distribution and transmission network, ~~functioning~~ the Distribution Network User is obliged to coordinate relay protection installations with the D~~d~~istribution L~~l~~icensee and, where necessary, in the case of system automation installations, ~~—~~with the Dispatch Licensee.

11. Power transformers of the Distribution Network User~~, hence its nominal capacity,~~ shall have overload protection, maximum current protection, current interruption~~cut~~ or differential protection with ~~or~~ fuses.

12. When ~~In case of~~ necessary, the ~~ity~~ following measures shall be taken with respect to the ~~at~~ Distribution Network User's distribution~~transmission~~ line:

a) At 110 kV~~KW voltage level~~ – Remote protection, three-stage null ~~con~~sequence protection, maximum current protection, current interruption~~cut~~;

b) At 35 kV~~KW voltage level~~ – remote protection, current interruption~~cut~~, maximum current protection, protection from single-phase grounding.

13. The Distribution Licensee is obliged to ensure supply of all ~~the~~ necessary information for the secure and proper functioning of the Distribution Network User's protection and control systems.

14. The Distribution Licensee is obliged to provide~~give~~ (if required) other Distribution Licensees and/or the Dispatch Licensee respective electrical signals and parameters ~~indicators~~, including:

a) State of switching~~commutation~~ equipment (switched on, switched off);

b) Voltage values of transformer'~~s~~ leads;

c) The ~~Each~~ active and reactive loading of each generator, and in ~~energy unit/~~aggregate, at the generator terminal;

~~d)~~a. Generator voltage data;

~~e)~~b. Position of tap changers~~ration adjusters~~ of power transformers;

~~f)~~c. Voltage ~~value~~ at high voltage bus bar of the power plant;

~~g)~~d. Features of the speed regulator and capacity limits,

~~h)~~e. Values of active and reactive capacity of ~~the~~Distribution Network Users at 35-110 kV~~KW voltage~~.

15. If there are ~~n case of~~ faults in the information provided in accordance with paragraph 14 of this Article, the Distribution Network User is obliged to take necessary steps to ~~measures for its~~ correct~~i~~ the faults ~~on~~ in the shortest period of time possible.

16. If the Distribution Network User has its own reserve generator that can feed electrical equipment/installations located at its installation ~~User's Unit~~ via an autonomous scheme, the Distribution Network User is obliged to ensure separation of the autonomous scheme from the Distribution Network.

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The s~~S~~witching scheme of the Distribution Network User's installation ~~unit~~ to autonomous mode, and ~~also~~ its respective blocking system, ~~m~~ shall be organized in coordination with the Distribution Licensee.

Article 10~~82~~. Additional Requirements of~~to~~ Generators connected at 35 kV and above~~Power Plant~~

1. Connection of generators ~~power plant~~ to the Distribution Network shall not worsen the reliability and quality of supply to other Distribution Network Users.~~' electricity supply. In the process of drafting the a~~Applicants seeking connection to the Distribution Network shall take requirements of Article 23 of the T~~t~~ransmission N~~n~~etwork Code~~rules~~ into consideration.
2. Generators ~~Electricity producer~~ shall be ~~bears~~ responsible ~~ility~~ for the safety and security of ~~the~~ staff at their~~its~~ power plants and electrical equipment/installations.
3. Generators are ~~Electricity producer is~~ obliged to coordinate with relevant interested parties their testing ~~complex examination (testing)~~ programs for placing ~~of putting~~ their power plants into operation.~~, in order to plan and coordinate respective complex examination (testing). Complex examinations (t~~Testing shall be undertaken) and putting into operation takes place~~ in accordance with current legislation.
4. At any stage, a generator ~~Electricity producer~~ is obliged to provide additional information to the Distribution Licensee and/or the Dispatch Licensee when ~~(if~~ requested~~)~~ on each generator unit, and in ~~energy unit/~~aggregate for~~of~~ the power plant, that is necessary for ~~due~~ compliance with the obligations of the Distribution Licensee and/or the Dispatch Licensee as envisaged under Georgian legislation.
5. Requirements of~~to~~ the generator~~power plant~~:

a) Operation of the relay protection at the ~~of~~ power plant shall be coordinated with relay protection and automation of the D~~d~~istribution Network and, when necessary, the T~~t~~ransmission N~~n~~etwork, taking into consideration following principles:

a.a) Clearing ~~Liquidation~~ time of short-circuit current;

a.b) Coordination of automated~~ic repeated~~ switching;

a.c.) Line circuit breaker installations that shall not be replaced without prior consent of the Distribution Licensee.

b) Characteristics of voltage fluctuation and flicker shall be in compliance with requirements of Article 8~~0~~ of this code~~ese rules~~.

c) Total harmonic distortion limits shall be in compliance with requirements of Article 8~~0~~ of this code~~ese rules~~.

6. In cases where~~if the~~ part of the Distribution Network to which ~~energy~~ the generator ~~unit/aggregate~~ is connected is separated from the electricity system during an ~~in~~ emergency situation, the Distribution Licensee ~~is entitled to decide~~ together with Dispatch L~~l~~icensee shall determine if the generator ~~whether such energy unit shall~~ will continue operation in island mode ~~or not,~~ based on the operating ~~onal~~ conditions on~~f~~ the Distribution Network.

7. In cases of system emergencies, ~~if the Dispatch Licensee requests so electricity producer~~ the generator is obliged to ~~develop and~~ coordinate and respond to ~~with~~ the Dispatch Licensee's operational directives and procedures ~~for~~ promptly~~ reaction of energy unit/aggregate in emergency situations~~, including automatic loading of its power plant~~launching of energy unit/aggregate~~.

8. Synchronization of a generator ~~energy unit/aggregate~~ with the Distribution Network shall be coordinated with ~~take place via such circuit-breakers that are coordinated with~~ the Distribution Licensee. Depending on the configuration of the power plant, synchronization may be coordinated through ~~circuit-breakers may be~~:

a) Generation circuit-breakers:

b) Low and High voltage (linear) circuit-breakers of step-up transformers;

9. An automatic synchronization device that is ~~shall be~~ able to synchronize to ~~with electricity~~ the Distribution Network in accordance with the following requirements:

a) Within 48-52 Hz. frequency range;

b) Within ±10% variation range of network nominal voltage.

10. The Power Plant must be designed so the~~at~~ risk~~s~~ of a fault cascading ~~spreading accident~~ from the power plant is ~~any energy unit/aggregate to other energy units/aggregates were possibly~~ minimized. Facilities relating to s~~S~~elf-consumption at~~of~~ the power plant ~~energy unit/aggregate~~ shall be connected to the low voltage side of the step-up transformer and/or ~~of such energy unit and/or ancillary equipment of such energy unit/aggregate~~ shall be fed from other guaranteed capacity sources.

11. Generators are ~~Electricity producer is~~ obliged to notify the Dispatch Licensee and Distribution Licensees if their power plant ~~that their energy unit/aggregate~~ has black start capability ~~without voltage supply from the network~~.

12. Step-up transformers should be selected so that reactive capacity of the power plant is~~were~~ not limited during voltage variations ~~of voltage~~ within admissible limits in the electricity network.

13. Step-up transformers of power plants shall have ~~ability~~ (when required by ~~in case of requirement of~~ the Distribution Licensee or the Dispatch Licensee~~)~~ ~~of~~ tap changers~~switching curve adjusters~~ with ~~and its~~ increment ~~shall~~ not exceed 2.5%.

14. Generators are ~~Electricity producer is~~ obliged to install differential protection on step-up transformers.

15. High voltage coils~~rolls~~ on~~f~~ generator~~'s~~ step-up transformers shall be connected in star manner and neutrals shall be grounded~~out of boxes~~, and low voltage connection coils~~rolls~~ shall be in delta configuration.~~triangular~~.

16. Generators ~~Energy unit/aggregate~~ shall be equipped with frequency regulators and with load~~ing~~ control systems ~~of frequency variation~~ for providing appropriate response~~action~~ in accordance with the requirements of article 23 of the Transmission Network Code.

17. Generators shall ~~Electricity producer is obliged to~~ participate in voltage regulation through automatic voltage regulators ~~of relevant voltage~~ in accordance with Article 23~~-~~ of the Transmission Network Code~~of these rules~~.

18. Generators shall~~Electricity producer is obliged to~~ have maximum current protection or maximum current protection with blocking at minimum voltage, differential protection ~~of the generator~~, frequency protection and protection from loss of excitation field ~~from losing~~.

19. The Distribution Licensee shall~~is obliged to~~ request ~~other~~ additional protection measures to those outlined ~~except protections envisaged~~ in this article.

20. The Distribution Licensee shall~~is obliged to~~ have ~~ensure~~ operational management (with coordination with ~~in case of necessity in coordination with~~ the Dispatch Licensee, as necessary) of circuit-breakers at the connection point of power plants on ~~with~~ the Distribution Network.

Article 11~~83~~. Information to be provided to generators~~electricity producer~~ by the Distribution Licensee

1. The Distribution Licensee shall~~is obliged to~~ provide the following information to the Retail Customer who is a generator~~electricity producer whose energy unit/aggregate is~~ connected to the Distribution Network:

a) Relay protection and automation installations at the connection point~~ (network)~~;

b) Requirements relating to electrical equipment/installations, cables, switching~~commutation~~ apparatus, and metering systems;

c) Requirements relating to grounding ~~electrical~~ equipment/installations.

d) Equivalent resistance of the network at connection points or short-circuit current values at maximum and minimum modes of ~~the~~ system operation.

Article 12~~84~~. Schemes and Designs of the Connection Points to the Distribution Network at 35 kV and above

1. Designs of connection points are prepared for each electrical equipment/installation ~~to be~~ connected to the Distribution Network including ~~and include~~ all schematics and charts ~~the necessary schemes defined~~ under design~~ing~~ norms.
2. The connection a~~A~~pplicant shall prepare~~s~~ schematics ~~schemes~~ and designs of electrical equipment/installations on its side of the connection point and submit~~s~~ it to the Distribution Licensee.
3. The Distribution Licensee shall prepare~~s~~ and submit schematics ~~schemes~~ of the sub-stations and lines ~~to be connected and/or electricity line from such sub-station that are~~ necessary for the connection applicant to prepare ~~declarant and/or information necessary for preparation of~~ design documentation~~ and submits them to the Declarant~~.
4. In cases where ~~f~~ the connection point ~~shall be~~ is in the ownership of the Distribution Network User, ~~(or is) on the unit which is applicant's ownership,~~ it shall ~~an applicant is obliged to~~ prepare designs of the connection~~ cell~~. In all other circumstances the designs of the connection ~~cell~~ are prepared by the Distribution Licensee.
5. Designs and schematics ~~es~~ of the connection point shall reflect precisely the electrical connections of primary and secondary switching~~commutation~~ at connection points and devices connected to the switching equipment~~it~~.
6. The ~~Stamp of~~ connection point designs shall include ~~encompass~~ names and surnames of authorized persons, dates and signatures.
7. Schematics ~~es~~ and designs of connection points shall be approved by the Distribution Licensee. A copy of the connection point schematics ~~es~~ and designs shall be kept by~~with~~ each party.
8. Designs of the connection point shall be used during construction, operation, repair or re-design of the ~~ing works associated with~~ connection point~~unit~~.
9. Requirements of this Article apply~~ies~~ to Retail Customers ~~Applicants~~ seeking to connect~~ion~~, or who are already connected, to the Distribution Network at the 35-110 kV voltage levels except ~~to~~ small generators with less than ~~power plant (except~~ 100 kW~~KV and less~~ capacity ~~power plants) and 35-110 kW voltage level~~.

Article 13~~85~~. Access ~~to the Unit~~

1. Distribution Network Users shall ensure unimpeded access to their connection installations by ~~(including their devices, electrical equipment and means of transportation~~ to ~~) of~~ the Distribution Licensee, and ~~also~~ representatives of other authorized bodies envisaged under~~in~~ the Law ~~to the connection place (if the connection point is located at User's unit)~~ and to the equipment ~~apparatus~~ of the Distribution Licensee if it is located on the Distribution Network ~~at~~ User's territory~~(if such)~~.
2. Electrical equipment/installations at the sub-station of the Distribution Licensee shall be operated in accordance with manufacturer instructions ~~of the manufacturing factory~~ and current legislation of Georgia.
3. Each electrical equipment/installation of the Distribution Licensee that is~~are~~ located on the Distribution Network~~at~~ User's property ~~unit or territory~~ shall be operated in accordance with manufacturer instructions, the ~~of manufacturer/the~~ Distribution Licensee's operating standards and current legislation in~~of~~ Georgia.

Article 14. Connection of Micro-power plants of Net Metering Customers to the Distribution Network

1. A Micro-power Plant is a renewable energy source under the ownership of a Retail Customer connected to the Distribution Network that uses the energy output of the Micro-power Plant to offset the energy it purchases from the Distribution Licensee. The design capacity of the Micro-power Plant shall not exceed 100 kW consistent with Government legislation. Such Retail Customers are referred to as Net Metering Customers.
2. The Distribution Licensee is obliged to support development of Micro-power Plants consistent with Government legislation. For this purpose, the Distribution Licensee shall be obliged to provide technical and other support to the Net Metering Customers seeking to connect a Micro-power Plant to the Distribution Network. This support shall be provided free of charge to the Micro-power Plant Applicant. Ten working days following receipt of a completed application for a Micro-power Plant in the form presented in Annex 10, the Distribution Licensee shall issue technical conditions for connection free of charge to the Applicant except in cases envisaged in Paragraph 5 of this Article.
3. The Distribution Licensee shall identify a single point of contact known as the Micro-power Plant Administrator for each Micro-power Plant application. Following receipt of an application, the Micro-power Plant Administrator shall identify within one week any defects or missing information in the application. The Micro-power Plant Applicant shall be allowed to correct the defects and re-submit its application, if necessary, to the Micro-power Plant Administrator. Once the Micro-power Plant Administrator has received a valid application, it will provide written confirmation to the Micro-power Plant Applicant. The notification shall include the Micro-power Plant Administrator's contact information including name, position, email address and telephone number.
4. The Micro-power Plant Administrator shall issue its technical review of the application in written form to the Micro-power Plant Applicant within 10 working days of receipt of a valid application. The Micro-power Plant Administrator shall contact the Micro-power Plant Applicant as necessary during the conduct of its technical review if it requires clarification of issues relating to the application. This may include on-site inspections.

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Comment [CB5]: Must be consistent with Government net metering policy.

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5. If the design capacity of the Micro-power Plant is greater than the connection capacity of the relevant Net Metering Customer, the Micro-power Plant Administrator is authorized to request the Micro-power Plant Applicant to increase its connection capacity to the Distribution Network according to the requirements of GNERC Resolution #20, September 18, 2008. Only after satisfying this condition will the technical review of the application be submitted to the Micro-power Plant Applicant.

Comment [CB6]: If it exceeds the connection capacity, there will be a cost to increase the capacity of the connection.

6. The possible schemes for connection of the Micro-power Plant to the Distribution Network include:
    a. Synchronous – when the Micro-power Plant works in parallel with the Distribution Network;
    b. Asynchronous – When the Micro-power Plant is connected via an inverter to the Distribution Network; or
    c. Isolated – when the Micro-power Plant is not connected to the Distribution Network and works in autonomous mode.
7. While conducting the technical review, the Micro-power Plant Administrator shall define all technical conditions in such a way that ensures installation at least cost.
8. Following receipt of the technical review from the Micro-power Plant Administrator, the Micro-power Plant Applicant shall proceed with construction of its Micro-power Plant.
9. The Micro-power Plant Applicant is responsible for constructing, commissioning, permitting and meeting all environmental requirements under current legislation for its Micro-power Plant. Further, the Micro-power Plant Administrator is responsible for addressing any technical requirements set out in the technical review produced by the Micro-power Plant Administrator.
10. Following construction of the Micro-power Plant, the Micro-power Plant Applicant shall notify the Micro-power Plant Administrator in writing that its Micro-power Plant is ready for connection to the Distribution Network. Within 5 working days of receipt of the Micro-power Plant Applicant's letter, the Micro-power Plant Administrator shall conduct an on-site assessment of the compliance of the Micro-power plant with the technical review, and shall issue:
    a. in the case of full compliance, a notification to the Micro-power Plant Applicant that it is in compliance with the technical review;
    b. in the case of non-compliance, a notification to the Micro-power Plant Applicant that it is non-compliant and identification of all defects. Once all defects have been addressed, the Micro-power Plant Applicant shall re-notify the Micro-power Plant Administrator who shall again visit the plant site to assess compliance with the technical review, and if is determined that it is now compliant, shall issue a notification to the Micro-power Plant Applicant that it is in compliance.
11. Once the Micro-power Plant Applicant has been notified that it is compliant with the technical review, the Micro-power Plant Administrator shall proceed with installation of the necessary bi-directional metering and connection of the Micro-power Plant to the Distribution Network. The metering installation and connection shall be completed within 10 working days of notification that the Micro-power Plant is compliant with the technical review.
12. The Net Metering Customer shall submit an application to the Micro-power Plant Administrator for a standardized agreement approved by the Commission relating to billing and settlement of

energy produced by its Micro-power Plant. The Micro-power Plant Administrator shall submit the completed and approved agreement to the Net Metering Customer within 5 working days of receipt of the application.

13. The Distribution Licensee is responsible for the costs of the technical review, the assessment of the Micro-power Plant Applicant's compliance with the technical review, and the cost of purchasing and installing the metering point. The Micro-power Plant Applicant is responsible for all other costs associated with its Micro-power Plant.
14. Cost recovery for the technical review, compliance assessments, and the purchase and installation of the metering point shall be determined by the Commission consistent with legislation.
15. A Micro-power Plant Applicant shall not be required to follow the procedure outlined in this Article if its Micro-power Plant is to be connected in isolated mode, meaning it will not be connected to the Distribution Network synchronously or via an inverter.
    a. The Distribution Licensee is not obliged to perform the requirements envisaged in this Article if the Net Metering Customer is connected to the 0.4 kV voltage network and intends to construct a Micro-power Plant only for its own use (does not require an excess power purchase agreement) and provided the design capacity of its Micro-power Plant does not exceed the capacity of its connection to the Distribution Network;
16. A Net Metering Customer shall not cause the worsening of electricity reliability and quality on the Distribution Network at its connection point. More specifically:
    a. voltage increases shall not exceed +6%;
    b. connection of the Micro-power Plant shall not worsen power factor, taking it outside of ±0.8 limits;
    c. the Micro-power Plant shall not cause interphase imbalances (asymmetry) of more than 2 % on the three phase system;
    d. short circuits caused by the Micro-power Plant shall not exceed norms established for the given voltage levels on the Distribution Network.
17. In certain cases, if studies show that short circuit levels are low at the Net Metering Customer's connection point and the Micro-power Plant can significantly impact neighboring Retail Customers, the Distribution Licensee is authorized to request the provision of additional security measures beyond standard requirements. The Net Metering Customer shall be given a reasonable amount of time to address the additional security measures.

Annex #10

Application form for the Connection of a Micro-power Plant to the Distribution Network

Filed by the Applicant	
Contact Information	
Subscriber Number:	Address:

City/municipality:	Phone:
E-mail:	
Description of Power Plant	
Type of energy source: Solar panel ☐ Wind ☐ Hydro ☐ Biomass ☐ Other ☐ Please indicate:	
Connection type: Asynchronous ☐ Synchronous ☐	
Power Plant design capacity: _____ (kW)	
Customer connection capacity: _____ (kW)	
Annual Design/forecast Electricity Production: _____ (kWh)	
Forecast Annual Demand of Customer: _____ (kWh)	
Production cycle: Daily ☐ Seasonal ☐ Annual ☐	
Voltage Level: _____ kV	Phase: One phase ☐ Three Phase ☐
Purpose of produced electricity: ☐ Self-consumption ☐ Self-consumption and selling of excess electricity	
Is a power purchase agreement requested? yes ☐ no ☐	
Type of existing meter: bi-direction ☐ one direction ☐	
Form of technical review submission: written ☐ electronic ☐	
estimated date of network connection (start of operation):	
Enclosed Information	
☐ Electrical one-line diagram (including control and safety schemes)	
☐ Situational Plan	
☐ Manufacturer Data	
☐ Existing permits (if required)	
Applicant's Signature:	**Date:**
Filed by Licensee	

Remarks:
Distribution Licensee:
Date of receipt:
Signature of Responsible Person:

~~3.~~

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Distribution Network Operating Code~~ve Management Rule~~

Comment [CB1]: Primary changes relate to the addition of articles 1 and 2 on Scope and Objectives, and General, respectively. I have also added a clause about developing plans for wide-spread system emergencies.

Article 1. Scope and Objectives

1. Operations management of the Distribution Network includes the coordination of planned outages of equipment which affect operation of the Distribution Network.
2. This Distribution Network Code:
   a. Enables the Distribution Licensee to meet its license obligations and requirements under the Transmission Network Code to provide certain information to the Dispatch Licensee; and
   b. Establishes procedures to enable collection of data from Distribution Network Users.
3. The objectives of this Distribution Network Connection Code are to:
   a. Specify load forecast and generation data, and other information, to be provided to the Distribution Licensee by Distribution Network Users to enable the Distribution Licensee to maintain the integrity of the Distribution Network and meet its obligations relating to the provision of information to the Dispatch Licensee under the Transmission Network Code;
   b. Set out the Distribution Licensee's operations planning procedure and outage scheduling procedure necessary for meeting its responsibilities relating to the efficient and reliable operation of the Distribution Network while accommodating the need for equipment maintenance.

4. This Distribution Network Operating Code covers:

   a. Short-term forecasting of load and generation;

   b. Planning of Retail Customer load and generation interruptions; and

   c. Operations management of the Distribution Network.

Article 2. General

1. The Distribution Licensee is obliged to maintain the integrity of its Distribution Network. In order the meet this obligation, the Distribution Licensee requires the provision of load and generation data and information from Distribution Network Users.
2. The Distribution Licensee is required to provide forecast load and generation data and information to the Dispatch Licensee consistent with the requirements set out in the Transmission Network Code.
3. This Distribution Operating Code applies to:
   a. The Distribution Licensees;

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b. Distribution Network Users with demand exceeding 500 kW, or generation exceeding 1 MW, where the Distribution Licensee and/or the Dispatch Licensee consider it appropriate.

4. The Dispatch Licensee and the Distribution Licensees shall be guided by the rules of good utility practice, safety, fire prevention, the rules of electricity (capacity) market, administrative acts of GNERC and the Ministry of Energy and other relevant technical guidelines in the performance of their roles and responsibilities.
5. For the purposes of maintenance outage planning, there are three types of outages considered:
   a. Planned outages – flexible (i.e., routine annual maintenance), requiring at least three days notice to the Dispatch Licensee
   b. Unplanned outages – limited flexibility (i.e., must be completed in the next few days), requiring at least one day notice to the Dispatch Licensee
   c. Forced outages – no flexibility, immediate outage outside the control of the Distribution Licensee (i.e., automatic trips owing to equipment failure such as fire, system problems, weather-related (lightning), etc.), requiring notice to the Dispatch Licensee as soon as possible following the outage event.
6. Retail Customers refer to both load customers and/or generators.
7. The Distribution Licensees shall cooperate with the Dispatch Licensee in all aspects of Distribution Network operations as documented in this Distribution Network Operating Code and the Transmission Network Code including the procedures for restoring the system to normal operation following wide-spread system outages.

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Article 31. Short-termed load forecasting of consumption of the consumers connected to the distribution grid

Comment [CB2]: The forecasting time frames should, and do, correspond to the time frames set out in the Transmission Network Code.

1. In order to develop its short-term operating plan, the Dispatch Licensee In the process of submittal of data on loading, when implementation of operative planning and control, at the stage of development of short-termed operative plans, the dispatching licensee is obliged to develop a demand forecast prognosis of demands on the basis of the information submitted by the distribution licensees, among others.
2. The Dispatch Licensee requires asks of demand forecast data from the Distribution Licensees in order to assist with the development ofing of the demand on electricity are the following:

a) Local and national demand forecasts for preparation of short-term operating plans on the power system; and

a)b)Preparation of the electricity (capacity) Demand/supply balances on the power system by the dispatching licensee on the basis of the data submitted by the distribution licensee in order to assess capacity reserve margins and other ancillary service requirements for the power system.the manner enabling consideration of a sufficient reserve of capacity;

~~b) Determination of the factors at the stage of development of short-termed operative plans which are subject to be considered by the dispatching licensee in the process of forecasting of demands.~~

3. For the purpose of forecasting ~~of the~~ long-term~~ed~~ demands, the D~~d~~istribution L~~l~~icensees shall~~are obliged to~~ provide the D~~d~~ispatch~~ing~~ L~~l~~icensee with ~~the~~ data relating to ~~about the required~~ capacity and active power requirements ~~d~~ for different areas of the country and for different planning time frames~~stages of planning~~.
4. For the ~~At the stage of~~ operating time frame~~ve planning~~ (year one through year five, ~~since the first year – till the fifth year,~~ inclusive~~ly~~):

a) Not later than 30 September of each year, the D~~d~~ispatch~~ing~~ L~~l~~icensee shall~~is obliged to~~ notify the D~~d~~istribution L~~l~~icensees in ~~a~~ writing ~~ten form about~~ of the date/time of the expected annual peak~~ing~~ demand and the date/time of the expected~~ing~~ minimum~~al~~ annual demand for the Georgian power system.

b) Not later than 30 October of each year, each D~~d~~istribution L~~l~~icensee shall ~~is obliged, to notify~~ provide the D~~d~~ispatch~~ing~~ L~~l~~icensee in ~~a~~ writing ~~ten form about prognostic~~forecast data for~~of~~ each year of the following five-year period, including~~mainly~~:

b.a) forecast hourly demand and generation ~~on active capacity (according to the~~ at each ~~point of~~ connection point and in total~~)~~. These~~is~~ data are~~is calculated~~ provided for the day of ~~-~~expected maximum~~ally~~ loading for each year on the Distribution Network off~~or~~ the D~~d~~istribution L~~l~~icensee~~s~~ and for the day of the expected annual peak~~ing~~ demand~~s~~ on the power system as indicated by ~~of~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee ~~as well~~.

b.b) forecast annual demand ~~(at each according to the points of~~ connections point and in total~~) on the active capacity,~~ according to categories of consumption (residential~~for example, population~~, commercial~~ sector~~, governmental organizations, industrial~~ consumers~~, agricultural~~ consumers~~, street lighting~~outdoor illumination~~, hospitals and others) as the case may be;

b.c) forecast ~~prognosis~~ of hourly demand and generaion ~~prepared for the active capacity (at each according to the points of~~ connection point and in total~~)~~ for the day of minimal consumption as indicated ~~submitted~~ by the D~~d~~ispatch~~ing~~ L~~l~~icensee;

b.d) forecast demand ~~on active capacity~~ and power factor~~capacity coefficient~~ in the peak load hours at each connection point ~~of peaking consumptions of consumers in the points of connections~~ and for the system as a whole as indicated ~~in the peak hours of the year submitted~~ by the D~~d~~ispatch~~ing~~ L~~l~~icensee;

b.e) forecast demand and power factor at each connection point ~~on active capacity in the points of connections and capacity coefficient in~~ for the period of minimum~~al~~ demand during~~of~~ the year as indicated ~~submitted~~ by the D~~d~~ispatch~~ing~~ L~~l~~icensee.

5. One month prior to the Schedule Day, ~~At the stage of short-termed planning a month prior to it~~ the D~~d~~istribution L~~l~~icensees shall ~~is obliged to~~ provide the D~~d~~ispatch~~ing~~ L~~l~~icensee with hourly schedules of load and generation capacity in ~~a~~ writing~~ten form~~.
6. At least one day prior to the Dispatch Day, ~~At the stage of planning~~ the D~~d~~istribution L~~l~~icensees shall ~~is obliged to~~ notify the D~~d~~ispatch~~ing~~ L~~l~~icensee of~~about~~ any change in ~~the~~ load or

Comment [CB3]: Should use same term as that in the Transmission Network Code.

generation demand on~~of~~ the Dispatch Day~~following day~~ of 1 MW~~by 1 mwt~~ or more at~~in~~ any connection point on its Distribution Network~~ of connection one day prior to it at least~~.

7. Each day, t~~T~~he D~~d~~istribution L~~l~~icensee shall ~~is obliged to~~ provide the D~~d~~ispatch~~ing~~ L~~l~~icensee~~,~~ in ~~a~~ writing~~ten form, with the~~ data relating to ~~about~~ active and reactive capacities for each hour of the previous day at each connection point on its Distribution Network.~~of each day according to hours and points of connections during the previous calendar day.~~

~~7.~~

8. In the process of preparing its load forecasts, ~~forecasting of the demand on electricity~~ the Distribution ~~dispatching l~~Licensee shall ~~must~~ take into account the following factors:

a) Historical demand and generation data and trends including losses~~Data about demands on electricity of the passed period including losses~~ on~~in~~ the D~~d~~istribution Network~~grid~~;

~~b) Relevant data and information submitted by the operator of the electricity market;~~

~~c)~~b) Relevant f~~F~~orecasts of ~~rising of indexes of~~ social-economic development of the country;

~~d)~~c) Weather forecasts, including the impact of weather on historical demands and generation~~ of the current and passed periods~~;

~~e)~~d) Major events including p~~P~~lanned maintenance of equipment~~repairs which is preliminarily known for the dispatching licensee~~;

~~f)~~e) Planned new connections for both load and generation~~Schedules of capacity planned by the electricity generators~~;

f) Expected import, export and transit of electricity;

g) Demand control

~~g)~~h) Interconnections with other Distribution Licensees;

~~h)~~i) Any o~~O~~ther information considered ~~submitted by the distribution licensee, if~~ necessary.

~~9. The dispatching licensee must prepare forecasts of demands of the electric system using a relevant methodology.~~

9. In preparing its load forecasts, the Distribution Licensees shall use load forecasting software that has been reviewed by the Dispatch Licensee and is approved by the Commission.

Comment [CB4]: The Distribution Licensees are not currently able to do this as they do not possess the necessary software. This will have to be covered in a transition plan.

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~~**Article 2. Short planning of generation in the distribution grid**~~

~~1. The dispatching and distribution licensees, in case of requirement, are obliged to submit to each other all document necessary for dispatching management immediately.~~

~~2. The distribution licensee is obliged to submit to the dispatching licensee, annually, approved single line schemes of all power stations owned by them as well as the 110/35 kw grid being under their maintenance according to the regions,. In case of modification of the scheme or installation of a new grid the distribution licensee is obliged to submit one line connection schemes indicating changes immediately as well.~~

~~3. The dispatching and distribution licensees, in the process of working, are guided by rules of technical maintenance of power stations and power grids, rules of safety technologies of~~

Comment [CB5]: This is covered in the Connections Code.

~~maintenance of power stations, rules of fire prevention, instruction of rendering of first aid to the bodies injured as a result of accidents occurred while maintenance of electric devices, standard forms of switching on the sites, rules of electricity (capacity) market, administrative acts of GNERC and Ministry of Energy and other technical guidelines existing for switchboard.~~

Article ~~43~~. Retail Customer Interruptions during maintenance~~Planning of cutouts (interruptions)~~

1. Distribution L~~l~~icensees shall~~are obliged to~~ notify the D~~d~~ispatch~~ing~~ L~~l~~icensee of~~about~~ any maintenance ~~repairing~~ work~~s~~ to be conducted on~~in~~ the D~~d~~istribution Network~~grid~~ or the devices and buildings connected to it which may ~~have an~~ impact the ability of the Dispatch Licensee to dispatch the power system efficiently and reliably~~on abilities of rendering of service to electric power systems by the power block/aggregate~~.
2. In the process of coordinating retail customer interruptions for planned maintenance on~~cutouts in the distribution grids and coordination of planned cutouts of consumers of~~ the D~~d~~istribution Network~~grid~~, the D~~d~~istribution L~~l~~icensee shall ~~is obliged to~~ act in accordance with ~~ing to the~~ instructions received from ~~of~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee.
3. The D~~d~~istribution L~~l~~icensee shall be required at any time, but at least seven (7) days prior to initiating ~~starting of~~ a planned interruption~~concrete cutout~~, to notify ~~is liable to require from~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee of its planned interruption of Retail Customers~~right on the planned short-termed repairing cutouts~~. The n~~N~~otification shall ~~about the requirement must~~ include the following information:

a) The component of the Distribution Network ~~grid~~ that~~which~~ will be affected by the interruption~~cutout~~;
b) The amount of load and/or generation expected to be interrupted in MW~~Values of cutout and accessible capacity (mw)~~;
c) The date and time of initiation of the interruption~~Acceptable day of starting of cutouts and probable intervals of time~~; and
d) The ~~Required~~ duration of the interruption~~cutout~~ (which should not~~n't~~ exceed 72 hours).

4. Upon receiving ~~of~~ the notification, ~~requirement~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee shall~~must~~ review and issue a response ~~it and after discussion of the situation with the electricity licensee, to issue its response~~ within three working days.
5. If the dates of the planned interruption change~~distribution grid requires a cutout in contrary with the planned dates (plans of long-termed and/or short-termed cutouts)~~, the D~~d~~istribution L~~l~~icensee shall ~~is obliged to~~ notify~~inform~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee ~~about the stated~~ immediately. Such notification shall~~must~~ include:

a) The component of the ~~Name of the d~~Distribution Network that will be affected by the interruption~~grid~~;
b) The d~~D~~ay, time and duration of the interruption~~expected starting of the non-scheduled cutout~~;
c) Information about the nature ~~character~~ of the interruption~~cutout~~ and the amount ~~value~~ of load and/or generation to be interrupted in MW~~switched off capacity (mw)~~ (including information

about the amount of generating capacity which may be available~~accessible~~ during the interruption~~while cutout~~).

6. The Dispatch Licensee shall in ~~Within~~ the shortest time possible after ~~terms since~~ receiving ~~of~~ the notification stipulated in~~by the~~ paragraph 5 of this Article ~~the dispatching licensee is obliged to~~ confirm the revised date and time, or ~~to~~ propose an alternative date and time for the planned interruption. ~~to the distribution licensee a correction in connection with the date of starting of the cutout and its duration~~. Following agreement on a revised date and time for the planned interruption, ~~In case of reaching of any agreement on correction~~ the D~~d~~istribution L~~l~~icensee shall ~~must~~ confirm its agreement in writing to ~~the stated to~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee.
7. In the event of a ~~case of en~~forced interruption of Retail Customers on ~~cutout of~~ the D~~d~~istribution Network~~grid~~, the D~~d~~istribution L~~l~~icensee shall ~~is obliged to~~ inform the D~~d~~ispatch~~ing~~ L~~l~~icensee ~~about the stated~~ immediately after the forced interruption becomes known. Upon determination of the date and time of restoration of the forced interruption, the D~~d~~istribution L~~l~~icensee shall notify ~~must submit information to~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee ~~immediately~~ and identify ~~to provide conducting of~~ relevant measures for restoration of power supply ~~as soon as possible~~.
8. Following an ~~In~~ event ~~case~~ of forced interruption of ~~non-scheduled cutout of~~ Retail Customers, ~~electricity~~ the D~~d~~istribution L~~l~~icensee shall ~~must~~ file a report to ~~inform~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee within a reasonable period of time explaining the ~~about a~~ reasons for ~~of~~ the forced interruption~~cutout~~ and the actions taken by the Distribution Licensee to restore service in a timely manner~~determination of accurate time of restoration immediately~~.
9. If during ~~in~~ the process of restoration of supply~~, at any time,~~ the D~~d~~istribution L~~l~~icensee receives information that restoration cannot ~~'t~~ be completed ~~provided~~ within the agreed time frame~~term~~, the Distribution Licensee shall ~~he must~~ notify the D~~d~~ispatch~~ing~~ L~~l~~icensee immediately and provide an explanation ~~about the stated immediately with indication~~ of the reasons for the ~~of~~ delay and a forecast of the date of restoration.

Article 5~~4~~. Operational ~~ve~~ management of the D~~d~~istribution Network~~grid~~

~~1.~~5. ~~From the dispatching viewpoint for the purpose of normal functionality of the power system of Georgia, in~~ At the beginning of each year, the ~~duly authorized bodies of d~~Distribution Licensees and the ~~and d~~Dispatch~~ing~~ L~~l~~icensee~~s~~ shall exchange ~~are obliged to submit to each other~~ a list of ~~operative~~ employees authorized to~~for~~ conduct~~ing of~~ operating~~ve~~ communications and negotiations.

~~2.~~6. Existing and planned t~~T~~echnical guidelines of the Distribution Licensees ~~-~~relating to such things as ~~existing in the stations and planned in future ((including~~ accident prevention, etc., ~~ve and dividing automatics)~~ which may~~have an~~ impact operation of ~~on the mode of~~ the power system must have the agreement of ~~be agreed with~~ the D~~d~~ispatch~~ing~~ L~~l~~icense who will take into consideration any impacts the technical agreement might have on the efficient and reliable

operation of the power system~~according to which the station will be managed with the account of voltage steps, improvement of the operative management and reliability of the system~~.

7. Communications~~Negotiations~~ between the Distribution Licensees and the Dispatch Licensee ~~dispatchers~~ shall~~must~~ be conducted using ~~duly and~~ mutually accepted terminology and ~~, on a technical language, using~~ decrees, notifications and records, and in the case of Retail Customer interruptions, ~~process of operative cutouts,~~ identification of responsibilities and ~~for the purpose of division (distribution) of~~ liabilities ~~and activity are~~ regulated by ~~the list of agreed and~~ approved management-maintenance directives relating to ~~of~~ electric devices.

~~3.~~8. Operations ~~ve~~ management is undertaken according to a hierarchy whereby the Dispatch Licensee is at the top of the hierarchy, and the dispatch function of the Distribution Licensees is at the lower hierarchy. ~~considers a kind of operative subordination, while which o~~Operations of ~~on a concrete~~ facilities regardless of ownership ~~device~~ are undertaken according to ~~provided by~~ instructions issued by ~~of~~ the D~~d~~ispatch~~er~~ Licensee when the facility is ~~which has the stated device~~ under its~~his~~ operational~~ve~~ management. In the~~is~~ case of Retail Customer interruptions, coordination between the Distribution Licensees and the Dispatch Licensee is required~~cutouts require coordination of the subordinate staff. The operative management-maintenance considers a kind of operative subordination while which operations are provided under a permit of the operative staff managing that electric device~~.

~~4.~~9. Communications~~Negotiations~~ between the Distribution Licensee and the Dispatch Licensee shall be~~dispatchers must be~~ recorded by a special device from which, if necessary, extraction of any record is~~may be~~ possible. The c~~C~~onduct~~ing~~ of operationd~~ve~~ communications~~negotiations~~ in the absence of ~~in disregard for~~ a recording device ~~as well as application of dispatching operative-communicative devices for discussion of private matters~~ is forbidden.

~~5.~~10. The Dispatch Licensee ~~superior dispatcher~~ has a right to issue any instruction necessary for management of the power system to the subordinate operating ~~ve~~ staff of the Distribution Licensees ~~subordinate to him~~, including:

a) ~~Concerning to t~~Transmission and distribution lines, ~~-~~substations and equipment under its operational ~~being in~~ management and equipment associated with planned Retail Customer interruptions~~maintenance on implementation of operative cutouts~~;

~~b) Concerning to electric devices and facilities being in management and maintenance on implementation of operative cutouts;~~

~~c) Concerning to general installations and electric devices of power stations and substations on implementation of operative cutouts;~~

~~d)~~b) C~~oncerning to c~~hanges to ~~of a scheme of installation of~~ relay ~~protection~~ and automatic protection schemes.

~~e)~~c) Restoration of service to Retail Customers that have been interrupted owing to ~~On providing of preparation and cutouts of the scheme in the process of liquidation of a~~ system-related forced outages~~accident~~.

~~6.~~11. The Retail Customers~~consumers~~ connected at~~to~~ the 35 to 110~~-35-10-6~~ kV voltage level ~~grid of the distribution licensee~~ who have~~ing~~ their own electric facilities (farms) ~~of a relevant voltage 110-35-10-6 kV~~ shall ~~are obliged to~~ submit to the D~~d~~ispatch~~ing~~ L~~l~~icensee annually a list of personnel ~~bodies, with indication of groups of safety,~~ authorized for conducting ~~of~~ operations~~ve~~ communications ~~negotiations~~ relating ~~concerning~~ to management of their grid.

~~7.~~12. For the purposes of protecti~~o~~ng ~~of~~ the sustainability and reliability of the power system during forced outages ~~accidents~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee shall~~has a right~~:

a) Ensure adequate ~~To make a resolution on application of a~~ capacity reserves are available as needed from generators and/or dispatchable load sources~~of capacity in power stations~~;

b) Ensure safe ~~Proceeding from safety of~~ operation of the system, including if necessary, interruption of Retail ~~to implement cutouts of the~~ Customers~~consumer (~~ following ~~with a further~~ notification and in coordination with ~~of a dispatcher of~~ the D~~d~~istribution L~~l~~icensees~~)~~;

c) In the case of system emergencies owing ~~terms of~~ to ~~deficiency occurred as a result of any accidental~~ forced outages of ~~cutout of a source of significant~~ generation ~~in the system~~, restrict or disconnect supply to Retail Customers~~to provide restriction or disconnection of the consumer~~;

d) During system emergencies with capacity shortages, ~~In case of occurrence of deficiency of electricity in the system to~~ establish an hourly schedule of load shedding~~consumption~~.

~~8.~~13. The dispatch~~ing~~ function~~service~~ of the D~~d~~istribution L~~l~~icensee shall~~is obliged and responsible for~~:

a) Follow and fulfil ~~Due fulfillment of~~ all instructions and requirements of the D~~d~~ispatch~~ing~~ L~~l~~icensee;

b) During ~~In~~ cases of deficient capacity, ~~cy to~~ follow the ~~strictly an agreed~~ hourly schedule of load shedding provided by the Dispatch Licensee~~consumption~~;

c) Timely inform~~ing of~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee of~~about accidental~~ forced outages of equipment on its Distribution Network ~~cutouts happened in his grid~~ which could ~~have an~~ impact the~~on~~ normal operation of the power system;

d) Prevent~~ion of~~ re-connection of Retail Customers ~~the consumer~~ that have been disconnected by an automatic ~~discharging~~ device ~~of frequency~~ or as a result of action of ~~the~~ emergency control equipment without the consent of the Dispatch Licensee~~(agreement)~~;

e) Adjust~~ment of~~ points of interruption at the 35 to 110 kV voltage levels to ~~ble points of the 35/110 kw transit grid and~~ avoid~~ing of application of the stated grid for the~~ transit on that part of the Distribution Network ~~ing purposes~~ without the~~a~~ prior consent of the Dispatch Licensee~~(agreement)~~;

f) Eliminate ~~Is responsible for elimination of~~ the cause of equipment outages on the Distribution Network~~accident in the managed grid and implementation of accurate cutouts~~;

g) Probe transmission line disconnections owing to problems on the Distribution Network when authorized to do so by ~~Is obliged to receive authorization from~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee ~~on probing of transmission line disconnected due to the occurred accident being under his management~~;

h) When In case of observing frequency deviationsof decreasing of a frequency in the system, he is obliged to adjust loading on the generators under its controlpower stations owned by him with the account of with the prior permission of the Dispatch Licenseettance of transit transmission lines.

9.14. The Distribution Licensees shall cConducting maintenance onf electric devices, transmission lines, substations, andor automatic protectionve devices consistent with the approvals and instructions of the Dispatch Licenseeinto repairing with the account of the list of management maintenance is provided by means of a dispatching application.

10.15. The Dispatching application represents a special form and a dispatch functioner of the Ddistribution Llicensee is responsible for compliance withof the instructions and directions of the Dispatch Licenseecontent of work submitted in it. The following data must be included on all workinto the forms submitted to the Dispatch Licensee for its approval:

a) Name of the site;
b) TheA content of the work;
c) TheA responsible body;
d) TheA time of starting and finishing time;
e) Capacity reduction and Lost and remaining available ed generation capacity;
f) Emergency preparedness.

11.16. Additional activities necessary for the safe fulfillment of works must also be represented in the application as well.

12.17. Planned maintenance applications shallmust be submitted to the Ddispatching Llicensee for its consideration by 12:00 noon at least two working days prior to initiation of the workit, till 12.00 a.m, or shall otherwise , and the application received upon the 12:00 a.m will be registered as an unplannednon-scheduled maintenance application.

13.18. As In case of necessaryity, the Ddispatching Llicensee shall has a right to determine whether the application is for planned or unplanned maintenanceaccidental, or scheduled. Delivery of an forced accidental maintenance application is possible at anyall times of the day.

14.19. As a time of opening of tThe maintenance application shall identify is recognized athe time of disconnection and re-connection of a breaker relating to the work, and thea time for of closing of the application – a time of switching of the electric device back into operation.

15.20. In cases where of entering of a new device is to be placed into operation into maintenance which willhas an impact on the operation mode of the power system, a program of switching must be agreed to with the Dispatch Licensee in advance. Such kind of applications must be submitted to the Ddispatching Llicensee at least 5 days prior to the proposed date for placing the device into operationit. FiveBesides, 5 days advance notice must also be given to the Dispatch Licensee for any prior to it, a type of application relating to a Wholesale Customer which causes a disconnection of any Retail Customers consumer of other qualified enterprises from the Distribution Networkgrid must be submitted as well.

~~16.~~21. ~~If~~ Any planned maintenance activity undertaken by the Dispatch Licensee ~~the system has scheduled a kind of repairing mode~~ which ~~causes~~ restricts supply to Retail Customers ~~ion of consumers of the distribution grid, the~~ requires that a maintenance application ~~must~~ be submitted to the dispatch function~~er~~ of the D~~d~~istribution L~~l~~icensee at least 5 days prior to commencement of the activity~~it~~ unless the parties agree to an alternative time frame~~. In case, if the dispatcher doesn't manage to agree the application within the required terms with a grounded argument they will adjust the mutually agreed time~~.

~~17.~~22. If~~n~~ the dispatch function of the Distribution Licensee fails to receive approval of the date, or the revised date, for ~~case of failure in adjustment of the date of~~ a maintenance activity~~cutout, as the case may be~~, the~~a~~ dispatch~~er~~ function of the D~~d~~istribution L~~l~~icensee shall ~~will~~ be responsible for the ~~upon the expected~~ consequences~~results~~.

~~18.~~23. Maintenance a~~A~~pplications of the D~~d~~ispatch~~ing~~ L~~l~~icensee shall~~must~~ be delivered to the Distribution Licensee by ~~dispatching service until~~ 03:00 p.m. at least one day prior to the planned equipment outage.

~~19.~~24. If prior to commencement of the works approved in a planned or unplanned maintenance application, the Distribution Licensee determines that it is unable ~~n case if the site due to relevant reasons isn't able~~ to fulfill the works specified in ~~required by~~ the application within the established time~~terms~~, the Distribution Licensee shall ~~he must~~ abandon fulfillment of the works and -the application shall~~will~~ be cancelled, and a new application shall be submitted.

~~20.~~25. Responses to~~on~~ scheduled maintenance applications must be submitted by 03:00 p.m. at least ~~informed to each other~~ one day prior to commencement of the ~~starting of~~ works ~~until 03:00 p.m~~.

~~21.~~26. If there is a need to change the works approved in a ~~In case if according to the~~ maintenance application while the work is underway, ~~in the process of the work a necessity of changing of the working character, volume, and term of fulfillment was created the old~~ a revised application shall~~must be cancelled and a new application must~~ be submitted~~delivered~~ for the consideration of ~~to~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee~~. Such application may be submitted for consideration~~ at least one working day prior to commencing the new works~~it~~. When necessary, the Distribution Licensee shall continue with the new works in advance of receiving the approval for the new application, and shall provide reasons for doing so to the Dispatch Licensee~~in other cases, if proceeding from the character of work, fulfillment of the work is necessary accidental application must be submitted~~.

~~22.~~27. Following approval, ~~Proceeding from the management maintenance, the regional dispatching services must submit~~ the maintenance application of the D~~d~~ispatch~~ing~~ L~~l~~icensee shall be submitted to the D~~d~~istribution L~~l~~icensee via the central dispatching service.

~~23.~~28. Correspondence relating to maintenance ~~While responding on the~~ applications shall be submitted in writing.~~, terms of fulfillment and permitted time must be repeated in words.~~

~~24.~~29. When a maintenance ~~In case if the~~ application is refused, it shall be marked as "refused", and ~~submitted as a "refuse" with a mark "is adjourned",~~ a new application must be prepared.

30. If there is a need to prolong a planned outage beyond the date approved in the application, the Dispatch Licensee must be notified ~~Any application on adjourning of the term on the device being under scheduled repairing will be submitted~~ by~~till~~ 12.00 noon ~~a.m.~~ one day prior to the originally approved return to service date.~~expiration of the general term of the application~~

~~25.~~31. ~~-~~In ~~specific~~ cases where an emergency outage of a Distribution Network facility occurs~~, if the site requires emergent stoppage of any device or generator~~, the ~~a~~ dispatch function ~~er~~ of the D~~d~~istribution L~~l~~icensee shall ~~has a right to~~ authorize ~~the~~ local staff to immediately disconnect the facility~~on duty to fulfill disconnection~~, and shall ~~with a further~~ inform~~ing of~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee as soon as possible~~about the stated~~. In such~~this~~ cases, a~~n accidental application~~ report shall ~~must~~ be prepared indicating the reasons for the outage and the~~a~~ time when the facility will be returned to service~~of coming of the electric power out of the repairs~~.

~~26.~~32. P~~Types of p~~lanned maintenance applications which are subject to coordination ~~adjustment~~ with any neighboring power system~~,~~ must be submitted to the D~~d~~ispatch~~ing~~ L~~l~~icensee at least one week prior to commencement of the work.~~by Monday-Thursday, Tuesday-Friday, Wednesday for Tuesday and Wednesday of the next week.~~

~~27.~~33. Unplanned maintenance applications ~~Non-scheduled applications which have no accidental character~~ shall ~~must~~ be submitted to the D~~d~~ispatch~~ing~~ L~~l~~icensee by 12:00 noon one day prior to the commencement of the unplanned outage~~it, till 12:00 p.m~~.

~~28.~~34. Authorization for commissioning ~~management maintenance of the~~ newly constructed sub-stations, electric devices and lines is assigned on the basis of mutual agreement.

~~29.~~35. Modifications to ~~Adjustment of~~ the outage applications of Wholesale Customers directly connected to the Transmission Network ~~with other qualified enterprises~~ are~~is~~ administered by ~~provided by~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee. However, ~~-~~any ~~where~~ 10/6 kV feeders connected to the Wholesale Customer's ~~coming out from his~~ sub-station~~s~~ are under the operational ~~vely~~ manage~~mented~~ ~~by~~ of the dispatch~~ing~~ function ~~services~~ of the relevant ~~service center subordinate to the~~ D~~d~~istribution L~~l~~icensee.

~~30.~~36. New equipment to be put into operation by the Dispatch Licensee or a Transmission Licensee for ~~Entering of a new device or automatics into maintenance and its~~ testing which may ~~have an~~ impact service to Retail Customers ~~on disconnection of consumers connected to the distribution grid~~ must receive the prior approval of the ~~be agreed with a~~ dispatch~~er~~ function of the D~~d~~istribution L~~l~~icensee.

~~31.~~37. Following receipt of a directive from the Dispatch Licensee, ~~Simultaneously,~~ the ~~a~~ dispatch~~er~~ function of the D~~d~~istribution L~~l~~icensee shall ~~is obliged in case of receiving of a task from the dispatching licensee to provide~~ ensure normal operation of power stations working autonomously in the mode directed~~established after occurrence of the accidence~~. In the case ~~if by~~ the ~~stated~~ activity associated with the directive results in interruption of service to Retail Customers, ~~a part of consumers is disconnected, he~~ for the purpose of frequency regulation ~~of frequency, in case of necessity~~, it may be necessary to impose ~~must implement~~ restrictions in order to ~~and~~ create a normal mode of operation of power stations working autonomously.

~~32.~~38. In case where a directive ~~if the instruction~~ from~~of~~ the D~~d~~ispatch~~ing~~ L~~l~~icensee which do~~es~~ not~~n't~~ threaten ~~the~~ human~~'s~~ life and the integrity of the electric device is not ~~, isn't~~ accepted by the D~~d~~istribution L~~l~~icensee, he is obliged to inform the Dispatch Licensee why. If~~him about the stated~~, ~~and, if~~ after reviewing the reason the Dispatch Licensee ~~listening of the remark, the~~ re-issues the ~~d~~ directive~~instruction~~, ~~will be repeated as well as a requirement of its fulfillment, a~~ the dispatch~~er~~ function of the D~~d~~istribution L~~l~~icensee shall ~~is obliged to~~ fulfill the directive~~it~~.

39. The ~~A~~ dispatch~~er~~ function of the D~~d~~istribution L~~l~~icensee shall not ~~mustn't~~ fulfill any ~~kind of~~ directive~~instruction~~ which threatens ~~the~~ human~~'s~~ health and/or the integrity of its electrical equipment. ~~terms of normal maintenance of electric devices.~~ Ungrounded delays in carrying out a ~~of the issued~~ directive~~instruction~~ of the Dispatch Licensee are~~is~~ forbidden; the executor~~,~~ and ~~as well as~~ the manager who ~~ich~~ forced the executor ~~dispatcher~~ to delay carrying out a directive~~the issued instruction~~ shall be held~~is~~ responsible for the consequences~~non-grounded delay of the issued instruction~~.

~~33.~~40. Distribution Licensees shall develop and maintain appropriate plans for when the power system is in an emergency regime in accordance with the requirements of the Dispatch Licensee, the Transmission Network Code and current legislation. The emergency plan shall include, at a minimum, measures for responding to a wide-spread system emergency and for the provision of mutual assistance among Distribution Licensees during such emergency situations.

~~34.~~41. In cases where a directive is issued by the Dispatch Licensee for ~~of issuance of the instruction on~~ black-start of generators~~the power stations by the dispatching licensee~~ connected to the Distribution Network, the ~~a~~ dispatch~~er~~ function of the D~~d~~istribution L~~l~~icensee shall implement the ~~acts according to a relevantly agreed~~ directive~~instructions~~.

Chapter II. Distribution Network Planning Code~~Rule~~

Article 1. ~~The p~~Scope and Objectives~~urpose~~

1. Distribution network planning is driven for the most part by new customer connections to the distribution network and ensuring the reliable and economic supply of power to all retail customers connected to the distribution network.

~~1.~~2. The objectives ~~purpose~~ of the Distribution Network ~~Development~~ Planning Code~~Rule~~ ~~(hereinafter the Distribution Network Planning Rule)~~ are~~is~~ to:

a. determine the procedures, technical requirements and responsibilities relating to ~~of the~~ distribution network planning;

~~a.~~b. ensure ~~for ensuring the~~ coordination of distribution network planning with~~of~~ transmission network development (network design, construction, reconstruction and expansion~~enlargement~~);

~~b.~~c. identify~~determine~~ the principles and criteria of distribution network planning for ensuring the safe and cost-effective functioning of the distribution network~~, also for ensuring the~~ and adequate levels of service quality ~~standards~~;

~~c.~~d. determine the procedures and obligations relating to ~~of the~~ information exchange for planning purposes among the D~~d~~istribution L~~l~~icensees, D~~d~~istribution N~~n~~etwork U~~u~~sers and connection applicants;

~~d.~~e. determine the procedures for cooperation between D~~d~~istribution L~~l~~icensees and the D~~d~~ispatch L~~l~~icensee on planning issues; and

f. facilitate ~~the~~ development of the Distribution N~~n~~etwork by the D~~d~~istribution L~~l~~icensees based on ~~the~~ economic and reliability principles.

3. This Distribution Network Planning Code addresses:
   a. Planning principles and criteria;
   b. Strategic plans;
   c. The Five-year Distribution Network Plan;
   d. The procedure to be followed for development of the Five-year Distribution Network Plan;
   e. The provision of planning data;
   f. Electronic maps;
   g. Planning facilities of the Distribution Licensees;
   h. Loss reduction;
   i. Load forecasting; and
   j. Distribution network studies.

~~e.~~

Article 2. Definitions

Comment [CB1]: Added clarification of 5 year plan indicating that last 2 years are indicative only. Also clarified that Distribution Users include embedded generators.

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1. A fFive-year Distribution Network Pplan of Distribution Licensee – the document prepared by the Distribution Licensees according to the requirements of this Distribution Network Planning Codechapter, which includes the development plan of thea network owned by the Distribution Licensee for the next period of 5 calendar years.

1.2. Distribution Network Users, or Distribution Users – includes Retail Customers, both load customers and generators, connected to the Distribution Network.

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Article 3. Main planning principles and criteria of the planning

1. The Five--Year Distribution Network Plan prepared by the Distribution Licensees shall considerenvisage the reliability, power quality, safety, cost-effectiveness, the environmental, forecasting, and other issues which the Distribution Licensee deems appropriate as agreed to in agreement with the Commission.
2. The criteria forof the distribution network planning include, but are not limited toare:
   a. improvement of the safety norms and reliability standards of electricity supply (for populated locality, large facilities, densely populated and lightly populated regions, etc. in the) by Ddistribution Nnetwork (including the indicators of electricity supply interruptions) according to the Paragraph 10 of this Article;
   b. improvement of the quality of electricity supply;
   c. reduction of Ddistribution Nnetwork losses;
   d. integration of generation renewable energy sources oin the Ddistribution Nnetwork, particularly generation from renewable energy sources;

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   d.e. integration of energy efficiency and demand management programs on the Distribution Network;
   e.f. development of the plans forrelated to the supply of forecast of increases in consumption increase (construction of new network facilities and/or, rehabilitation of existing network facilities to, enlargement, increase of supply capacity, etc.);
   f.g. activities to be performed to the Government's according to the strategic plans; i.e., energy efficiency, renewable energy, etc.;
   g.h. improvement of the environmentecological condition (development of environmentally friendly technologies);
   h.i. development of new technologies such as smart networks.
3. Each project/activity envisaged in the Ffive-year Distribution Network Pplan shall be classified according toby one or more criteria described in Paragraph 2 of this Article.
4. Distribution Licensees are obliged to develop the transparent and comprehensible cost-benefit analysesis consistent withmethodology together according to the

international best practice using the scoring system and~~based on the~~ criteria defined in this Article. The methodologies used in the cost/benefit analyses undertaken by the ~~While analyzing the cost and benefits of~~ Distribution Licensees shall have the prior approval of ~~the same (identical) methodology shall be used that shall be agreed preliminary with~~ the Commission.

5. The ~~In f~~Five-year Distribution Network P~~p~~lan~~s~~ shall include ~~while using the~~ cost-benefit analyse~~i~~s of technically-relevant alternatives to ~~the~~ recommended ~~special~~ activities/projects and shall take into consideration capital costs, operation and maintenance costs, losses, environmental impacts, and qualitative measures (i.e., consistency with Government policy initiatives) over the life of the recommended activity/project~~be identified according to the analyses of technical alternatives, environmental issues and costs for maintenance period (expected capital investment, operation and maintenance costs)~~.
6. Under~~In~~ normal maintenance conditions on the~~f~~ electricity system, all working indicators of electricity equipment and installations under the control of the D~~d~~istribution L~~l~~icensee shall be within the limits specified by the ~~of~~ equipment manufacturer~~passport data~~ and the quality of electricity supply in the D~~d~~istribution N~~n~~etwork shall be within the allowed limits defined in this Code~~ese Rules~~.
7. Under ~~In case of~~ emergency conditions on~~in~~ the electricity system, power transfer ~~the congestion~~ levels and ~~/~~durations on~~f~~ electricity equipment and installations shall comply with limits specified by the equipment~~the~~ manufacturer~~'s instructions,~~ and ~~also~~ with standards and technical requirements effective in Georgia taking ~~the~~ external circumstances into ~~the~~ consideration.
8. The power~~Capacity~~ factor~~coefficient (cost)~~ in the distribution network (excluding the~~ept~~ 0.4 kV network) shall be between 0.9-1.0 ~~limits~~ for 95% of the time.
9. The Distribution Licensee shall develop its Five-year Distribution Network Plan ~~the development plan~~ in a manner ~~such a way~~ that eliminates the 6 kV network ~~not to be developed~~ in its~~his~~ service area over time (within reasonable limits). The ~~Instead of~~ above-mentioned voltage level shall be replaced with ~~, the development of~~ facilities rated 10 kV and above~~more voltage network shall be preferred~~.
10. In the development of~~While developing~~ the D~~d~~istribution N~~n~~etwork, the following reliability standards shall be satisfied continuously (except under~~the~~ emergency and force-majeure situations~~cases~~, which are outside the ~~un~~control~~lable for~~ of the ~~relevant~~ Distribution L~~l~~icensees):
    a. In substations of 35-110 kV ~~voltage~~ the outage~~damage~~ of a single~~one~~ power element (transformer, breaker, etc.) shall not cause the outage of 50 % or more of the load connected to the substation.

b. The Distribution Licensee shall decrease the 50% indicator defined in Subparagraph (a) of this Paragraph to 30% within 5 years of the ~~from entering~~ coming into force of this Code~~Rule~~ for all 35-110 kV substations under~~in~~ its~~his~~ control~~ownership~~.

c. Within 5 years of the coming ~~from entering~~ into force of this Code~~Rule~~ the ~~relevant activities of the~~ Distribution Licensee shall reduce voltage deviations on the distribution network under its control to ~~result in~~ ±5 % ~~allowed deviation of distribution network voltage during a week period~~ for 95% of the time during a period of one week.

d. The Distribution Licensee shall ensure that ~~to maintain~~ the average load o~~i~~n the D~~d~~istribution N~~n~~etwork under its control (substation transformers, ~~electricity~~ lines, etc.) is maintained within 70% of nominal capacity.

e. The electricity supply interruption indicators (System Average Interruption Duration Index - SAIDI, System Average Interruption Frequency Index – SAIFI, Energy Not Supplied - ENS) shall be improved in accordance with ~~according to~~ the target indicators established~~set~~ by the Commission.

11. The Distribution Licensee shall ~~ensure the~~ control and meter~~ing of~~ reactive energy o~~i~~n the 35-110 kV distribution network for each feeder.

12. The Five-year Distribution Network~~Development~~ Plan shall include the plans and ~~/~~forecasts relating to capacity for each of the Distribution Licensee's ~~related to the~~ connection points to ~~with~~ the transmission network and to the distribution networks of other Distribution Licensees' ~~network and/or need of capacity increase on existing connection points~~.

Article 4. Strategic Plans

1. ~~The~~ Strategic plans include:
   a. Goals and action plans defined in the Main Directions of the State Policy on the~~in~~ Energy Sector of Georgia, and long term plans and strategies~~y~~ relating to ~~of~~ energy sector~~'s~~ development (including the Ten-Year Network Development Plan of Georgia;
   b. Electricity Balance of Georgia approved by the Ministry of Energy of Georgia;
   c. Activities for fulfillment of obligations relating to ~~garding the~~ environmental legislation;
   d. Obligations relating~~ed~~ to ~~the~~ legislation on human health and work safety;
   e. Obligations relating~~ed~~ to ~~the~~ international agreements.
2. The Distribution Licensee is obliged to consider the activities and directions included in strategic plans when ~~related to the distribution sector development while~~ preparing its Five-year Distribution Network ~~own five year~~ P~~p~~lan.

3. The Distribution Licensee is authorized to request from the Commission ~~the~~ explanations/clarifications relating to ~~on~~ strategic plans and to gain the preliminary agreement of the Commission on activities to be considered.

Article 5. Five-Year Distribution Network Plan

1. The Distribution Licensee carries out long term planning for the development of the D~~d~~istribution N~~n~~etwork under its control~~development,~~ including all necessary studies ~~research~~ and evaluations. For this purpose the Distribution Licensee develops a F~~f~~ive-year Distribution Network P~~p~~lan which is presented to the Commission for approval under the procedures established in this Code~~set by this chapter~~.

~~1.~~2. The Five-year Distribution Network Plan includes detailed data and information for the first three years of the plan which address specific project investments. The final two years of the Five-year Distribution Network Plan include less detailed information to be used for indicative purposes only.

~~2.~~3. The F~~f~~ive-year Distribution Network P~~p~~lan includes, as a minimum:

a. ~~the~~ information on current and forecast~~ed~~ demand (load), transport~~pass through~~ and supply of electricity in the Distribution Network under the Distribution Licensee's control~~network~~;
b. reasonable forecasts of~~n~~ electricity generation by ~~the~~ power plants connected to the D~~d~~istribution N~~n~~etwork under the Distribution Licensee's control;
c. ~~the~~ information on the infrastructure of the~~at~~ D~~d~~istribution N~~n~~etwork~~,~~ which shall be built within the next five years including the ~~; on~~ specific terms relating to~~of~~ investments;
d. ~~the~~ information on ~~the~~ planned projects ~~(investment plans agreed with the Commission)~~ that shall be carried out in the next three years;
e. ~~the~~ information on integration of new generation units to be connected to ~~in~~ the D~~d~~istribution N~~n~~etwork (relating to ~~garding~~ connection applications and other information received by the Distribution Licensee~~application on the connection and other information)~~;
f. ~~the~~ information on the connection of new retail load customers to the D~~d~~istribution N~~n~~etwork (relating to connection applications and other information ~~according to~~ received by the Distribution Licensee ~~applications on the connection~~ and available ~~free~~ capacity on ~~ies by~~ main substations);
g. ~~the~~ information on the capacity of each network node and the~~its~~ need for strengthening for the purpose of integrating ~~on of~~ new load and generation ~~units to~~on the D~~d~~istribution N~~n~~etwork;

h. ~~the~~ information on service quality ~~(commercial quality of the service and electricity quality),~~ and ~~also~~ current problems and relevant plans regarding ~~the~~ compensation of reactive power and electricity losses for the purpose of solving the problems;

i. ~~the~~ information on the location of power quality analyzers;

j. ~~the~~ plans related to ~~the~~ modification of connection points to the D~~d~~istribution N~~n~~etwork or organization of new connection points;

k. cost/ ~~and~~ benefit analys~~c~~is (including technical and economic parameters).

~~3.~~4. The activities envisaged in the F~~f~~ive-year Distribution Network P~~p~~lan (rehabilitation of distribution network or construction of new facilities~~one~~, enhancement ~~creation~~ of ~~additional~~ transformer capacities in ~~the~~ substations, etc.) shall be carried out by the Distribution Licensee following approval by the Commission.

~~4.~~5. The works envisaged in the F~~f~~ive-year Distribution Network P~~p~~lan do not include ~~the network strengthening works necessary for certain connection to the distribution network, which cover the works in~~ the following ~~sections~~:

a. facilities beyond ~~in~~ the connection point (beyond ~~at~~ the substation of the Retail Customer's connection point);

b. facilities in that part of distribution network which connect to a ~~s the connection point (the substation of the connection point) to the~~ substation of a neighboring D~~d~~istribution Network~~substation.~~;

~~5.~~6. The Distribution Licensee ~~provides the~~ collect~~sion~~ and coordinate~~sion of~~ the information necessary ~~information~~ for ~~the~~ planning its D~~d~~istribution N~~n~~etwork from Distribution ~~the~~ U~~u~~sers and connection applicants, and from ~~also~~ information exchanges with other ~~the~~ T~~t~~ransmission Licensees and ~~other D~~distribution l~~L~~icensees.

~~6.~~7. The Distribution Users and connection applicants, and the ~~of the distribution network, also the~~ Distribution Licensees shall cooperate ~~with each other~~ in the process of preparing the F~~f~~ive-year Distribution Network P~~p~~lans, which among ~~along with~~ other things, ~~issues~~ envisages the provision of ~~necessary~~ data necessary to undertake the ~~for the~~ planning process.

~~7.~~8. The Distribution Licensee is obliged to carry out the projects envisaged in~~by~~ the F~~f~~ive-year Distribution Network P~~p~~lan without imposing any financial obligation on Distribution ~~the certain~~ U~~u~~sers or connection applicants.

~~8.~~9. ~~In t~~The D~~d~~istribution N~~n~~etwork development studies shall analyze ~~be co~~nsider~~ed~~ the cost ~~analysis~~ of the planned activities (capital cost ~~creating~~ of assets, operation and maintenance, etc.). The WACC used in the analysis ~~process~~ shall comply with the requirements of the Commission's Resolution N14 "on Approval of Electricity Tariff Calculation Methodologies" June 30, 2014.

~~9.~~10. The ~~necessary~~ time requirement for carrying out relevant works for expansion of the distribution network will depend~~s~~ on the volume and complexity of the planned works. It may also depend on modification of connection points to the D~~d~~istribution N~~n~~etwork and necessary procedures/time for different permitting requirements~~permissions~~. The F~~f~~ive-year Distribution Network P~~p~~lan shall be developed ~~by~~ taking into consideration the above-mentioned factors~~ into consideration~~.

Article 6. The Procedure for~~of~~ developing the F~~f~~ive-year Distribution Network P~~p~~lan

1. The Distribution Licensee annually develops the F~~f~~ive-year Distribution Network P~~p~~lan ~~draft~~ for the next 5 calendar year. This process ~~also~~ includes carrying out all necessary research and evaluation, and gaining the agreement of~~with~~ the Dispatch Licensee ~~(only~~ in ~~the~~ cases directly envisaged by this~~ese~~ Code~~Rules)~~.
2. While developing the F~~f~~ive-year Distribution Network P~~p~~lan ~~draft~~ relating to the 35-110 kV network, the Distribution Licensee shall ~~define 35-110 kV networks development plan by~~ coordinate and gain the ~~ion and~~ agreement of~~with~~ the Dispatch Licensee, taking into consideration the~~a~~ Ten Year Network Development Plan for~~of~~ the electricity system, ~~other~~ strategic plans and the economic development of the electricity system~~ economical functioning in the consideration~~.
3. Each Distribution Licensee shall send its~~the~~ F~~f~~ive-year Distribution Network P~~p~~lan ~~draft~~ to the Commission and the Dispatch Licensee for review ~~for~~ no later than September 1 of the~~a~~ relevant year. The Dispatch Licensee shall ~~is obliged to~~ study ~~the~~ compliance of the F~~f~~ive-year Distribution Network P~~p~~lan with the 10 year Network Development P~~p~~lan ~~of transmission network development in~~ no later than 15 working days after its receipt~~ving~~ (only ~~in~~ the part of the plan relating to the 35-110 kV ~~voltage~~ network~~s development plan~~) and submit ~~justified~~ comments and recommendations ~~related to the presented plan~~ to the Commission.
4. After receiving the F~~f~~ive-year Distribution Network P~~p~~lan, ~~draft~~ the Commission will initiate ~~starts~~ its study, hold~~s~~ consultations and public discussions. Based on its study of ~~While studying~~ the F~~f~~ive-year Distribution Network P~~p~~lan, ~~drafts by the Commission and also on the basis of~~ public discussions, consultations and the~~a~~ comments and recommendations received from the Dispatch Licensee, ~~the justified~~ written comments shall be~~are~~ prepared by the Commission ~~on the five-year plan draft of the Distribution Licensee~~ and sent to the relevant Distribution Licensee~~s for~~ no later than November 15 of the relevant year.
5. The Distribution Licensee is obliged to consider the Commission's comments and present an updated F~~f~~ive-year Distribution Network P~~p~~lan ~~draft in for~~ no later than December 1 of the relevant year. The Commission shall review~~s~~ and approve the

updated F~~f~~ive-year Distribution Network P~~p~~lan and render ~~ensures~~ its ~~approval on a~~ decision ~~basis~~.

6. In the event ~~case~~ the Distribution Licensee does not consider the Commission's written comments, the sanctions envisaged in~~by~~ the law may be imposed ~~on him~~.
7. In the event that~~case envisaged by~~ Paragraph 6 of this Article applies, the Commission is authorized to make relevant amendments to~~in~~ the F~~relevant f~~ive-year Distribution Network P~~p~~lan ~~draft~~ based on its prior~~the current~~ comments and ~~thus ensure the~~ approve~~al of~~ the amended ~~unified f~~Five-year Distribution Network P~~p~~lan.
8. A~~The a~~mendments to~~in~~ the ~~unified f~~Five-year Distribution Network P~~p~~lan may be made once in a year pursuant to the procedure under this Article. U~~Making u~~nplanned and un-approved amendments to~~in~~ the ~~unified f~~Five-year Distribution Network P~~p~~lan are~~is~~ not allowed except for the case directly envisaged by this Code~~Rule~~.
9. Based o~~O~~n ~~the basis of~~ written solicitations/conclusions of~~from~~ the Distribution Licensee, Dispatch Licensee or other authorized bodies~~y~~ the Commission is authorized to make its~~relevant~~ Decision and review the ~~unified f~~Five-year Distribution Network P~~p~~lan on his own initiative (only in cases where it has ~~if there is~~ an objective reason). In such cases the conditions for submitting the necessary information and documentation by the Distribution L~~l~~icensee are defined by the Commission's relevant decision.
10. ~~The unified f~~Five-year Distribution Network P~~p~~lans once approved by the Commission form ~~of the distribution network is~~ an obligatory act to perform. The Distribution Licensees are responsible for fulfilling the approved ~~is~~ plan. The Commission exercises ~~the~~ control over the performance of the relevant Distribution Licensee in the implementation of the approved Five-year Distribution Network Plan.~~performing the unified power plan.~~
11. In accordance with ~~set~~ rules set out in the~~unified~~ F~~f~~ive-year Distribution Network P~~p~~lan all Distribution Licensees are obliged to develop investment plans (drafts) for the relevant tariff regulatory period and submit these plans ~~m~~ to the Commission for preliminary approval ~~agreement~~ before initiation of ~~beginning~~ each tariff regulation. The rules for ~~development~~ review and preliminary approval~~agreement~~ of these investment plans are~~is~~ defined by the Commission's Resolution N14 "on Approval of Electricity Tariff Calculation Methodologies", June 30, 2014.
12. The Commission is authorized to withhold its preliminary approval of ~~not to agree with~~ such investment plans ~~(drafts)~~ which do~~es~~ not comply with the approved ~~unified~~ F~~f~~ive-year Distribution Network P~~p~~lan ~~of the distribution network~~.
13. The Commission is authorized to request ~~the~~ information relating to fulfillment of ~~on fulfilling~~ the preliminary ~~agreed~~ investment plans at any time and request ~~its~~

revisions based on the ~~received~~ information received if the Commission finds ~~out~~ that the planned activities and/or the quality of the performance are not ~~enough for~~ achieving the ~~set~~ goals set out in the ~~under unified f~~Five-year Distribution Network P~~p~~lan ~~of the distribution network~~.

14. For~~In~~ the case envisaged in ~~by~~ Paragraph 13 of this Article, ~~in~~ five working days after receiving the request for revision, ~~request of the investment drafts~~ the Distribution Licensee is obliged to consult with the Commission and prepare ~~then the Commission's~~ comments and amendments in the investment ~~draft~~ plan ~~will be prepared~~. The Commission shall ~~provides the~~ approve~~al~~ the revised investment plan ~~of this draft~~ by D~~d~~ecision within one month of~~after~~ finishing the consultations with the ~~the performance of which is obligatory for the~~ relevant Distribution L~~l~~icensee.
15. The Commission can ~~in obliged to~~ request from the Distribution Licensees ~~the~~ submission of additional information or~~,~~ documentation ~~and/or different conclusion~~ which it~~he~~ deems necessary at any stage of the review of the F~~f~~ive-year Distribution Network P~~p~~lan ~~review~~.

Article 7. The Provision of Planning Data

1. The Distribution U~~u~~sers and connection applicants ~~of the distribution network~~ shall provide the Distribution Licensee with ~~the~~ planning data according to this~~ese~~ Code~~Rules~~ for the purpose of the proper performance of requirements ~~for Distribution Licensee~~ related to ~~the~~ planning. This information along with other data shall include forecast~~ed~~ consumption and load data including the effects of energy efficiency and demand management programs for the 5-year planning ~~in the long term~~ period.
2. Applicants for new power plants ~~(except 100 kW and lower capacity power plants~~) connected to the ~~and applicant for~~ 35-110 kV D~~d~~istribution N~~n~~etwork are obliged to submit to ~~provide~~ the Distribution Licensee ~~with~~ necessary planning data for the next five-year period along with its ~~for planning together with the~~ connection application ~~(or by the connection application) for the next five-year period~~.
3. Retail C~~The c~~ustomers connected to the 35-110 kV system~~voltage level~~ and ~~also the~~ direct customers connected at any ~~(at all~~ voltage level~~s)~~ consistent with ~~envisaged by~~ Georgian legislation are obliged to provide the Distribution Licensee with a ~~next~~ five-year forecast of ~~about~~ load and consumption at~~for~~ each point of connection to the D~~d~~istribution N~~n~~etwork ~~connection~~. The first year of the forecast shall ~~be~~ present~~ed~~ data by month and the remaining ~~rest~~ 4 years shall present data by year~~include only an annual data~~.
4. In the event~~case~~ the Distribution U~~u~~ser ~~of the distribution network~~ is both a consumer and ~~electricity customer and~~ generator of electricity and is connected to the

35-110 kV system, ~~at the same time (except for retail customer that owns 100 kW and lower capacity power p~~lant) the Distribution User is obliged to present separate forecasts of load and generation ~~electricity consumption forecasts~~ to the D~~d~~istribution L~~l~~icensee ~~separately on the consumption and generation~~.

5. The Distribution Licensee shall classify the planning data as follows~~according to the following categories~~:
   a. forecast~~ed~~ data – these~~is~~ data include~~s~~ ~~the~~ forecasts of ~~related to the~~ electricity consumption and capacity for Distribution Users and connection ~~load of user and~~ applicants for the next five-years ~~period~~;
   b. Data and information related to ~~Evaluative or forecasted data of~~ electrical equipment and installations – this~~is data~~ includes ~~evaluative or forecasted~~ data for~~of a~~ new electrical equipment and installations planned by the Distribution U~~u~~ser or connection~~the~~ applicant to~~which shall~~ be presented by the connection applicant~~s~~ after receiving a~~the~~ connection offer;
   c. registered/manufacturer's ~~passport~~ data relating to ~~of~~ electrical equipment and installations – these~~is~~ data include~~s~~ accurate manufacturer's ~~/passport~~ data and parameters of the Distribution User or connection applicant's ~~or user's~~ electrical equipment and installations.
6. In the event ~~case~~ of any change in the planning data, ~~-~~the Distribution U~~u~~ser or connection applicant is obliged to inform the Distribution Licensee of such change~~about it~~. The notification shall include time and date~~period~~ when the change occurred, or will occur, as well as the ~~and also its~~ reasons for the change.
7. The Distribution Licensee is obliged to present ~~the~~ information about the planned development of the D~~d~~istribution N~~n~~etwork to the Distribution U~~u~~ser or connection applicant upon request.
8. The Distribution Licensee and the Distribution U~~u~~ser or connection ~~/~~applicant shall exchange ~~the~~ information relating to ~~about~~ short circuit current~~s~~ at the connection point ~~(~~upon request~~)~~.

Article 8. Electronic Maps

1. The Distribution Licensee shall register ~~provide the registration of~~ Distribution Users and connection applicants connected at 1 kV and higher ~~voltage of the distribution network~~ according to rules set ~~rule~~ by ~~the~~ legislation, and shall prepar~~eation of~~ relevant electronic maps in the format of geographical information maps for ~~(on~~ all voltage levels~~)~~. The Distribution Licensee shall reflect all~~the~~ changes in the Distribution N~~n~~etwork on the relevant maps.

Article 9. Planning Facilities of the Distribution Licensee

1. The Distribution Licensee shall ensure improvement in the ~~of~~ effectiveness and reliability of ~~the~~ Distribution N~~n~~etwork operation through contemporary and efficient means of planning.
2. The Distribution Licensee is obliged to implement contemporary simulation software(s) for computer simulation and optimization of the Distribution Network~~ research~~. Simulation software shall meet the Distribution Network planning requirements and shall have the capacity to analyze the following~~ capacities (modules)~~:
   a) L~~Analyze~~oad flows~~stream allocation~~;
   b) Simulatione and optimization of ~~e condensers (~~reactive compensation devices~~)~~;
   c) ~~Analyze s~~Short-circuit current;
   d) ~~Analyze v~~Voltage regulation;
   e) ~~Analyze c~~Current fall during turbine start~~launch~~;
   f) Dynamic optimization of feeders through simulation of load switching. Analysis~~ze~~ of effective decisions and emergency situations shall be possible through such function.
   g) Consumption (loading) forecast;
   h) H~~Analyze of h~~armonics and other voltage characteristics~~ of voltage~~.

3. The Distribution Licensee shall have complete information on the technical characteristics of its Distribution N~~n~~etwork, including manufacturer's ~~passport and factory~~ data, period of operation etc.

Comment [CB2]: The Distribution Licensees are not currently able to do this as they do not possess the necessary software. This will have to be addressed in a transition plan.

Article 10. Measures for~~of~~ Reducing Losses

1. The Distribution Licensee shall regularly ~~constanly~~ upgrade technologies and ~~as well as~~ operating ~~onal~~ procedures used during the design~~ing~~ and construction of network upgrades~~construction process~~.
2. The Distribution Licensee is obliged to undertake specific measures ~~in order~~ to reduce losses in the Distribution Network. Specifically:
   ~~a)~~ Apply only pressurized or bolted ~~up~~ connections/points of binding; i.e., ~~;~~
   ~~b)~~a)~~Not allow~~ manual binding of electrical wires is not allowed~~to each other;~~;
   ~~c)~~b)Select diameter~~width~~ and length of electrical conductors~~wires~~ in the low voltage network so that the fall of ~~the~~ voltage over the ~~on whole~~ length of the line shall not exceed 5%;~~.~~
   ~~d)~~c)S~~Ensure s~~elect~~ion of~~ new transformers with ability to regulate ~~of~~ voltage ~~regulation~~ during loading;~~.~~
   ~~e)~~d) Develop the Distribution Network so that the length of the low voltage transmission line from the transformer point to the customer loading point for new customer connections is minimized (within reasonable limits)~~in the process of connecting a new customer was reduced to minimum;~~;

f)e) Select Design transformers points at technically and economically approved high nominal voltage levels (within reasonable limits);

g)f) Compensate reactive capacity close to the consumption points, thus reinforcing the ability of hereby, the Distribution Licensee to fulfil shall reinforce control over Customers in fulfilling requirements of thisese Coderules related to power commercial factor of capacity;

h)g) Install mMetering point at connection points in accordance with approved standards;

i)h) Exercise Monitoring of disconnected Transmission Uusers (transmission line);

j)i) Construct arry out Llow voltage lines with single-phaseisolated wires;

k)j) Trace line loadings paths in accordance with approved rules;

l)k) Design transformer points close to customer groups (centralized to loadin the center of loading) so that respective customers arewhere equally distanced from abovementioned transformer (to the extent as far as it is possible);

m)l) Locate automatic re-closers on feeders in such a way that ensures the ability to interrupt faults/restore service throughout the length of the feederon the bifurcate of the Distribution Network lines;

n)m) Ensure structural division and the ability to analyze the magnitude and determine the analylocation ze of losses through specific software;

o)n) Undertake other measures that the Distribution Licensee considers appropriate.

Article11. Load Consumption (Loading) Forecasting

1. The Distribution Licensee is obliged to prepare annually load forecasts of consumtion (loading) for the upcoming 5 year period as , that will be part of the Five-year Distribution Network P5 year plan.
2. In the process of preparing the load consumption (loading) forecasts, the Distribution Licensee shall take the following issues into consideration:

a) Forecasts of the change in of the population;

a)b) Forecasts of the number of customers and electricity consumption according to the consumer categories (household, commercial, industrial etc.);

b)c) Electrification, network rehabilitation and metering;

c)d) Strategic plans, andalso such projects that are scheduled to be implemented by local municipalities and private investors;

d)e) EPlan effects of energy efficiency, demand management, peak loading moderation and loss reduction initiatives;

e)f) Important public events;

f)g) Plans of other Distribution Licensees and distribution asset network owners that may affect flow at connection points of the relevant Ddistribution Nnetwork.

~~g)~~h) Method of land use and division into zones;

~~h)~~i) Any additional information that the Distribution Licensee considers relevant and useful~~to be reasonable to use~~.

3. The Distribution Licensee is obliged to create a database of Distribution User categories ~~connected to the Distribution Network~~ in accordance with Annex 8 that shall be updated~~renewed~~ annually.
4. The Distribution Licensee is obliged to elaborate on load ~~consumption (loading)~~ schedules in order to analyze ~~character of~~ consumption ~~(loading)~~ for various categories of customers and equipment. For this~~at~~ purpose, the following shall be taken into consideration:
   a) Electricity demand curves~~charts~~ for~~rom~~ hourly, daily, seasonal and annual consumption~~point of view~~;
   b) Consumption charts for~~of~~ various categories of Distribution Users, including analyses~~ze~~ of differences;
   c) Daily, seasonal and annual energy consumption for each category of Distribution User;
   d) Daily, seasonal and annual peak loads for each category of Distribution User;
   e) Load charts relating to the ~~of User's~~ electrical equipment of Distribution Users.
5. The Distribution Licensee shall define load schedules at connection points to the T~~t~~ransmission N~~n~~etwork.
6. The Distribution Licensee shall ~~ensure~~ calculate~~ion of~~ annual peak loading factors for each winter and summer of the Five~~5~~ -year Distribution Network P~~p~~lan for~~per~~ each connection point to the Transmission Network (as necessary following ~~in case of necessity after~~ consultation ~~ing~~ with the Dispatch Licensee).

Article 12. ~~Research of the~~ Distribution Network Studies

1. The Distribution Licensee is obliged to conduct periodic studies ~~periodically~~ (at least annually~~no less than once every year~~) on the potential impact of planned connections on the D~~d~~istribution N~~n~~etwork ~~research on possible impact of planned connections~~, the measures envisaged in response to ~~in~~ strategic projects and load ~~consumption (loading)~~ forecasts ~~on the network in order~~ to ensure reliable functioning of the Distribution N~~n~~etwork and proper fulfillment of service quality standards.
2. Studies to be ~~Research~~ conducted by the Distribution Licensee shall comprise, as a minimum:
   a) Analysis ~~ze~~ of load flows ~~stream allocation.~~ including assessment of c~~C~~ongestion on~~quality of~~ distribution sub-stations (transformers) and ~~, transmission~~ lines ~~shall be investigated~~. Analysis of load flows ~~Forecast analyze of stream allocation~~ shall be made for minimum and maximum loading conditions during~~of~~ winter and summer periods.
   b) Optimization of feeders~~transmission lines feeding customers~~, including analysis of ~~that implies~~ capacity under ~~analyze of~~ existing consumption schedules, projected connections, forecast consumption ~~forecasting~~ and new sub-stations planned for~~at~~ the Distribution Network;

Comment [CB3]: The Distribution Licensees are not currently able to do this as they do not possess the necessary software. This will have to be covered in a transition plan.

c) O~~Drafting o~~ptimization of ~~um~~ plans relating to~~of~~ reactive power~~capacity~~ compensation. A s~~S~~trategy for~~of~~ reactive power~~capacity~~ compensation and voltage regulation shall be prepared based on ~~as a result of~~ such research. During preparation of the reactive power~~capacity~~ compensation plan, its positive impact ~~up~~on electricity quality and losses shall be documented~~outlined~~. It is desirable that ~~optimal location for~~ compensating devices be optimally located as~~was~~ determined by relevant~~through specific~~ software.

d) Designing measures for reducing losses taking issues of reliability of electricity supply into consideration. The s~~S~~tructure of losses shall be analyzed, ~~in the process of research that shall be~~ assigned to different categories, and summed in total ~~up~~ on a quantitative basis. Losses shall be a~~A~~nalyzed to show ~~of losses shall be made so that~~ the positive effect of measures to be undertaken (~~-~~or already undertaken) by the Distribution Licensee, as well as positive and negative effects of increases in~~of~~ consumption, connections of ~~ng~~ new customers to the D~~d~~istribution N~~n~~etwork and connections of ~~ng~~ power plants ~~shall be emphasized~~. Based on the results of the research the Distribution Licensee shall plan technically and economically reasonable measures for reducing losses.

e) Research on voltage ~~losses,~~ for detecting those areas of the network and/or connection points to the Distribution Network where voltage losses may occur and breach of normal voltage deviation limits set under these rules can be prevented. During research of voltage drop, forecast plans for~~of~~ new power plant connections and loads ~~consumption (loading) increase forecasts~~ shall be taken into account.

f) E~~Reports on short-circuit current for e~~stimates of potential ~~ing possible~~ impacts of new power plants and other electrical equipment/installation connections to the Distribution N~~n~~etwork on short-circuit current levels shall be reported. During such investigations ~~of short-circuit current~~, areas of the network shall be identified where the possibility of short-circuit current levels posing a danger ~~of hazardous volume for~~ to electrical equipment/installations and risk of ~~its~~ damage exists~~s~~ (including Distribution Users ~~of the Distribution Network~~, as well as the Distribution Licensee). Research of short-circuit current shall~~may~~ be conducted on the basis of alternative~~different~~ scenarios, including minimum and maximum loads. Moderation measures shall be planned on the basis of the results of the research and shall be reflected into the Five-year Distribution Network ~~Development~~ Plans.

g) Research on the Reliability of the Distribution Network. During such research, probable forecast indicators of expected duration, frequency of electricity supply interruptions and unsupplied energy~~power~~ (SAIDI, SAIFI AND ENS) shall be prepared to ~~, for~~ ensur~~e~~ing compliance with ~~planning of respective measures for complying with~~ reliability standards.

3. In order to provide Distribution Users ~~of the Distribution Licensee~~ with electricity supply quality compatible with standards, the Distribution Licensee shall implement electricity quality indicator analyzers (recorders). The ~~For that the~~ Distribution Licensee shall prepare

annual ~~chart~~ schedules for~~of~~ locating such analyzers (recorders) o~~i~~n its Distribution N~~n~~etwork in cooperation ~~that should be coordinated~~ with the Commission.

4. The Distribution Licensee shall~~is oblied to~~ provide the Comission with electricity quality indicators in the approved manner and at the required frequency.