

Approved  
By the Decision of the Government of the Republic of  
Tajikistan on " \_\_ " \_\_\_\_\_ 20\_\_ No.

## RULES FOR USING ELECTRIC ENERGY

These Electricity Rules (further Rules) are based on the requirements of the Energy, Energy Conservation and Energy Efficiency Acts, Inspections of Business Entities, the Civil Code of the Republic of Tajikistan and other legal regulations in the field of energy and establishes the order of use of electric energy.

### CHAPTER 1. GENERAL

These Rules are valid throughout the Republic of Tajikistan and compliance with its requirements is mandatory for legal and natural persons, regardless of ownership and departmental subordination.

1.2. These Regulations apply the following definitions: an electrical installation - **an** installation designed to produce, convert, transmit, distribute or consume electrical energy;

**Electricity scheme** - a set of interconnected electrical installations that provide electricity to consumers;

**The energy supply organization** is the subject of the power grid, which provides electricity to consumers; **electricity consumer** - enterprise, organization, institution, construction site, buildings and facilities, receivers of electric energy which are attached to the electrical grid and consume electrical energy;

**The subscriber** is an electric energy consumer who has a contract or enters into a contractual relationship with the energy supplying organization;

**subabonent** - consumer, electrical networks and/or electrical installations which are attached to the electric networks of the main subscriber and consumes electrical energy under a contract with the energy supplying organization;

**Wholesale consumer-reseller** - consumer with mixed load, having on its balance sheet transformer substations and distribution networks, purchasing electricity from energy supply organizations and reselling it to other consumers; **the consumer (population)** is an individual who consumes electrical energy for household needs; **An electrical energy receiver** is an electrical installation or device in which electrical energy is converted into another form of energy for use;

**its own power station is an electrical station that** is not part of the power grid, owned by the subscriber, directly or through the networks of subscribers (consumers) connected to the power grid;

**The connected network** is an electrical network from which the subscriber, directly or through the networks of other subscribers, receives electrical energy;

**The balance sheet boundary** is the dividing line between the energy supplying organization and the subscriber, on the basis of ownership or other legitimate basis for these elements; **The boundary of operational responsibility** is the section of the electrical network or its elements on the basis of operational responsibility, established by the contract;

**Installed power** - active electrical power, with which, according to technical conditions or passport to equipment, the electrical installation can work for a long time without overloading;

**Allowed capacity** - the power that the power supply organization on the basis of technical conditions allowed the subscriber to attach to their networks;

**The consumer's power load** is the power used by an electrical installation at a set time;

**Emergency reservations** - the minimum required power, the supply of which to the facility of continuous electricity retains the functioning of important devices for it and prevents disruption of life support facilities, as well as catastrophic environmental, social or economic consequences or loss of life;

**technological reservation** - the minimum power required by the subscriber to complete the process. **Electricity tariff** - cost of 1 kWh electric energy, set by the Listcurant; **estimated accounting of electrical energy** - determining the power and quantity of electricity consumed, based on measurements or other order, to make commercial settlements between the energy supplying organization and the subscriber;

**The quality of electric energy** - standard indicators and standards of electric energy at the border of the balance sheet of the utility networks of the variable three-phase and single-phase current; **reactive power** is a value that characterizes the loads generated in electrical devices by fluctuations in the energy of the electromagnetic field in the AC circuit;

**The customer** is an individual or legal entity with the intention of attaching its power plants to the power supplying organization's networks;

**energy passport** - a document compiled from the results of the energy survey, containing information on the features of accounting devices, energy efficiency indicators, the extent of losses of transferred energy resources, the potential of energy conservation with a list of measures.

1.3. The consumption of electrical energy is carried out only on the basis of a contract between the energy supplying organization and the consumer, subject to these Regulations.

1.4. A subscriber connected in due course to the energy supply network and fulfilling the obligations established by this Rules and Contract must be guaranteed the right to receive electricity.

1.5. The existence of connected-loaded electrical networks, in the absence of the owner and the operator responsible, is unacceptable.

## **CHAPTER 2. JOINING CONSUMER POWER PLANTS**

Permission to join new or additional capacity is based on technical conditions issued by the energy supply organization.

2.2. The energy supplying organization issues technical conditions on the customer's request within ten days. There is no need for other technical conditions to connect to electrical grids not provided by these Regulations.

2.3. The volume, structure, duration and manner in which technical conditions are issued are set by the energy supplying organization under the "Rules of Connection to Engineering Networks and Utilities".

The construction of facilities not directly related to the production and transmission of electrical energy is not permitted in technical conditions.

2.4. Reconciliation of planned design decisions on the electricity supply of new enterprises, buildings, structures, their queues, individual production facilities or expandable and reconstructed operating facilities, requiring a change in the scheme of external electricity supply to the consumer, is made by the energy supplying organization in due course.

2.5. When the electricity supply is reconstructed or changed (by the reliability of the electricity supply), which does not cause an increase in power consumption but changes the scheme of external electricity supply to the consumer, the consumer is obliged to obtain technical conditions for this from the energy supplying organization.

2.6. Technical conditions for the consumer to join the electrical installations, owned by another consumer, are issued only on the written consent of the owner of the electrical installation.

Power specified in technical conditions is fixed to a specific object.

2.8. In the event of the emergence of the right and when the transfer from one person to another the ownership of the object for which the technical conditions were issued, the energy supplying organization is obliged to register at the request of the new owner, to register within 10-days of the previously issued technical conditions.

For the customer and the project organization, the technical conditions of the energy supplying organization are mandatory.

2.10. The customer is obliged, before the start of construction work, to submit to the energy supply organization approved in due course the project of construction of enterprises, buildings and structures, their queues or individual production facilities, expansion and reconstruction of existing facilities.

The energy supplying organization checks the compliance of the design decisions with technical conditions, requirements of construction and energy regulations within ten days, and agrees if necessary.

The energy supplying organization in the specified time when identified in the project documentation deviation from the technical conditions or requirements of the rules and regulations of construction and energy, the customer must provide justifications for the failure. 2.11. When withdrawing land for construction, the project organization on the request of the customer must coordinate with the energy supply organization the decision on the electricity supply of all facilities under construction, including the security zones.

Construction of electricity facilities without project documentation, developed in the scope of regulatory and technical documentation requirements, is prohibited.

2.13. On the basis of the application to restore the previously issued technical conditions, which have been lost for various reasons, the energy supplying organization must provide the applicant with a copy of the previously issued technical conditions.

2.14. If the total production capacity includes electrical equipment (regardless of the destination), it is necessary to obtain the technical conditions for the existence of an authorized state authority on the energy supervision of its feasibility.

2.15. In the case of the unauthorized accession of power plants and electric appliances to the power supplying organization's networks, the power plants are disconnected from the network, and the necessary measures are taken in accordance with the law of the Republic of Tajikistan.

2.16. In the case of a new consumer (subabonent) joining the main subscriber's networks, the connection is made by written consent of the parties.

### **CHAPTER 3. ELECTRICITY CONTRACT** 3.1. The main document regulating the relationship

between the parties in the supply of electric energy is the contract.

The consumer (subscriber, subabonent), regardless of the point of joining the electric grid, enters into a contract only with the energy supply organization.

3.2. The contract with the subscriber should be concluded if the newly attached electrical installations meet the requirements of the regulatory technical documents in the field of construction and energy, including the present Regulations, if there are means of accounting for electricity, only after obtaining the permission of the authorized state authority for energy supervision.

The proposal for the conclusion of the contract is made by the consumer (subscriber) no later than a month before the start of the release of electric energy.

The contract is concluded indefinitely.

3.4. Contractual standards for the consumption of electrical energy by production facilities should be set on the basis of approved and agreed-upon standards for the consumption of electricity per unit of output.

The energy supply organization, in determining contractual standards for the consumption of electricity and power, should take into account the proposals of the authorized state body for energy supervision to reduce the established standards to the consumer. The proposals should be based on the mismanagement of electrical energy identified by the authority concerned.

The terms of the contract remain valid for the duration of the contract.

3.6. Changes in ownership, organizational structure, statutory rules, etc. may not be a basis for the energy supplying organization to cut off electricity (except for the debt for electricity consumption).

3.7. If the subscriber has several facilities with different territorial location within the service area of one energy supplying organization, the subscriber enters into one contract with the energy supplying organization.

The terms of the contractual volumes of electricity and power consumption for subscribers of a certain group should be the same for all subscribers of this group.

The energy supply organization monitors the implementation of contractual amounts of electricity consumption and power on metering devices.

Disagreements between the energy supplying organization and the subscriber in the control process are resolved by the authorized state authority for energy supervision.

3.10. If a subscriber violates a contractual obligation, the energy supplying organization has the right to take the following measures against him:

- (a) Forced shutdown or restriction of electricity release;
- b) Recovery from the subscriber in due course of damage.

3.11. In the event of termination of the contract, or refusal to extend the term, the parties must warn the other party no later than one month.

3.12. In the case of transferring from one person to another property ownership of the object, a new contract must be concluded.

### **CHAPTER 4. ALLOWING CONSUMERS TO USE POWER PLANTS**

4.1. Newly joined and refurbished power plants of consumers must meet the requirements of regulatory technical documents in the field of construction and energy, technologically modern, provided with design, technical reception-billing and operational documentation.

4.2. Before the commissioning of newly joined and reconstructed facilities of electricity supply and electrical installations must pass the established reception-delivery tests and be accepted by the act of the customer from the contractor (construction-installation organization).

4.3. The consumer is required to present newly attached and reconstructed electrical installations to the authorized state authority for inspection and permission to operate.

The energy supply organization joins the electricity grid with newly joined and refurbished consumer electricity and power installation facilities, only with the permission of the authorized state authority for energy supervision.

The issuance of a permit for the operation of electrical installations does not impose on the authorized state authority for energy supervision responsibility for their unstable work in the course of operation.

4.4. The order for the admission of electrical installations into operation also applies to the newly installed and reconstructed 3 phase electrical installations of household consumers (population).

4.5. The power plant allowed to be used by consumers, with a capacity of more than 5 kW, is only possible if there is a person responsible for electricity.

When renting out an object (houses, apartments), the person responsible for electricity is the person responsible for electricity of the landlord, unless otherwise provided by the lease agreement.

4.6. It is prohibited to allow the power plants of consumers with installation deficiencies, deviations from the technical conditions and regulatory requirements, as well as in the absence of trained personnel to maintain the electrical installation.

4.7. The actual accession of the customer's power plants to the electricity grid of the power supplying organization must be carried out on the basis of the permission of the authorized state authority for energy supervision to join, after the conclusion of contracts for the use of active and reactive energy and the adoption of the means of accounting for electric energy.

4.8. Seasonal electrical installations, annually before the start of the operating season, on the basis of a written appeal of the consumer must undergo a technical inspection of the authorized state body in the field of energy. The accession of seasonal electrical installations is made at the permission of the authorized state authority on energy supervision, in accordance with the requirements of the regulatory technical documents of the energy sector.

## **CHAPTER 5. CONDITIONS AND MODE OF CONSUMPTION OF ELECTRIC ENERGY**

5.1. The release of electric energy to all subscribers, regardless of the form of ownership and departmental subordination, is carried out in a contractual volume.

The contractual volume of annual consumption of electric energy, taking into account the amount of electricity and power available in the grid, should be broken down by months.

The category of reliability of electricity supply must meet the requirements of the regulations and is specified in the contract.

5.3. The interruption or restriction of electricity consumption to subscribers must be made in accordance with the regulations and the current Regulations.

5.4. In order to take urgent measures to prevent or eliminate an accident, the energy supplying organization has the right to stop supplying electricity to the consumer and subsequently to inform the consumer of the reasons for the termination.

5.5. In order to ensure a sustainable power grid, with a possible lack of electricity and capacity, power supplying organizations are required to have and, if necessary, to put in place schedules of restrictions or temporary power outages.

The limits of electricity and power consumption, with a shortage in the power grid, are set by the Government of Tajikistan at the suggestion of the energy supply organization.

5.6. Schedules limiting the consumption and temporary power outages are being developed by energy supplying organizations with the participation of consumers on the basis of the acts of harmonization of the technological and emergency armor of electricity supply.

In special cases and depending on the technological features of the work, the energy supplying organization can limit the return (disconnection) of electricity to consumers to the size of the emergency armor of the electricity supply.

5.7. Orders from energy control agencies to limit or cut off electricity and power must be carried out by the consumer's operational staff immediately.

5.8. If consumers fail to comply with orders to restrict the consumption or disconnection of electricity and power, the energy supply organization has the right to disconnect consumers directly from the power centers or to limit their consumption up to emergency electricity armor.

The terms of the schedules for limiting consumption and temporary power outages and how anti-emergency automation are operating should be reflected in the contract.

5.10. In the absence of backup power for routine repairs to equipment or to connect new customers, the energy supplying organization must establish in the contract the number and duration of outages for this purpose.

The energy supplying organization is obliged to agree with the subscriber the day and hour of the termination of electric power release no later than 5 days before the outage.

If, at the specified time after receiving the warning, the consumer does not agree on the time of the power outage, the energy supplying organization has the right to set this time on its own.

The power outage should be done after hours, warning the caller at least 24 hours before the outage.

5.11. The authorized state authority on energy supervision has the right to oblige the energy supplying organization to stop supplying all or part of the electricity supply to the subscriber in the following cases:

(a) The unsatisfactory state of the consumer's electrical installations, which threatens an accident, fire and endangers human life;

b) the absence of the person responsible for the electrical farm and qualified personnel to maintain the consumer's electrical installations;

(c) Failure to comply with the authority's regulations or to prevent its representatives from performing their official duties.

5.12. In the event of a subscriber exceeding the capacity allowed to be used under the contract during the maximum load hours of the electricity network, the energy supplying organization has the right to require the subscriber to reduce the load of electricity consumed to the established value of the contract.

If the energy supply organization does not comply with the requirement to reduce the load of electricity consumed within 10 minutes, the energy supplying organization has the right to make a partial or complete disconnection of the consumer from the power center.

Violators of the established order and the regime of limiting the consumption of electric energy on the submission of the energy supply organization are postponed primarily outages according to the approved schedule. In case of systematic violations

of the established order and mode of consumption of electric energy, the supply of electricity is immediately cut off, the culprit of the statutory order is brought to justice.

## **CHAPTER 6. OPERATING CONSUMER ELECTRICAL INSTALLATIONS**

The boundary of responsibility for the state and maintenance of electrical networks between the energy supplying organization and the subscriber must be specified in the act of delineating the balance of the electricity grid and the operational responsibility of the parties attached to the contract.

6.2. The limit of responsibility for the condition and maintenance of electrical installations and transmission lines with a voltage of up to 1000 B is set on the tips of cable inputs departing to the consumer lines.

If the actual balance border boundary boundary in this paragraph does not correspond, the parties must determine the boundary of responsibility directly in the treaty.

6.3. The boundary of responsibility for the condition and maintenance of power plants and transmission lines with a voltage of 1000 B and above is set:

(a) On the connector of the air line insulator on the outside, closed distribution devices or at the exit of the wire from the stretch of the garland of the open distribution portal insulators;

b) on the tips of the power cable on the support of the power line or distribution device.

Responsibility for the condition of the units specified in the subparagraphs (a) and b) of this point of connections is assigned to the organization on which the balance is a substation or a transformer point.

The limit of responsibility for the condition and maintenance of power lines with a voltage of 1000 B and above, having nips (deaf or with the help of a disconnecter) belonging to various organizations, is set on the support of the main line where the cut is made. Responsibility for the condition of the clips that attach the refip is attributed to the organization in charge of which the main line is located.

According to the agreement of the parties, the contract may establish another reasonable limit of responsibility, due to the peculiarities of the operation of electrical installations.

6.4. The removal of the subscriber's power lines, distribution points and transformer substations (points) through which electricity is transited to other consumers, as well as the inclusion of these installations after repair, is made with the notification or approval of consumers connected to the line.

6.5. In the presence of specific conditions for the production and operation of electrical installations, the consumer is required to have special instructions for the operation and safe maintenance of these electrical installations, approved in due course.

The subscriber and the energy supply organization are obliged, in accordance with the current rules, to protect the electrical installations installed in their territory.

## **CHAPTER 7. INSTALLATION AND OPERATION OF ELECTRICAL POWER METERING DEVICES**

7.1. Electrical power generation plants for the energy supplying organization for the electricity consumed must be equipped with the necessary volumes of appliances and accounting systems, in accordance with the requirements of the Electrical Installation Regulations (PUE) and other regulatory technical documents of the energy industry.

Electricity is accounted for for calculations between the energy supplying organization and the consumer at the border of the electricity balance sheet.

7.3. Measurement tools, the types of which have been approved by the authorized public body in the field of standardization and included in the state register of measurements, must be used to account for electricity.

Accounting devices are purchased and installed by the energy supplying organization. Maintenance (technical inspection, repair, state inspection), safety and timely replacement of payment devices or other accounting facilities are also carried out by them.

The devices of the newly built residential and public buildings and structures, after the contractor's delivery within the technical conditions (acceptance of the admissions commission) are transferred to the balance of the energy supply organization.

7.5. It is prohibited to join the power supplying organization (subscriber) networks without devices and other means of calculating electricity.

Electronic metering devices compatible with an automated electrical energy metering system must be installed to account for electricity.

Installation and installation of appliances and electricity metering systems should be carried out by organizations licensed to carry out these types of work.

7.7. The loss of electricity in the consumer's electricity grid related to the transmission of electricity to subabonents relates to subabonents in proportion to the amount of electricity they consume.

7.8. When transiting electricity from the power grid to the electrical grid of the power supplying organization through the consumer's networks, some of the loss of electricity in the consumer's networks relates to losses in the grid networks, proportional to the amount of electricity delivered to the power supplying organization network.

7.9. If two or more consumers join the power supplying power line, regardless of the balance sheet boundary, the electricity metering devices must be installed at the consumer substation.

7.10. At the consumer substation, electricity metering devices should be installed:

(a) In the water cells of each power line, regardless of whether there is electricity on the other side of the line (unless otherwise provided by agreement of the parties) ;

b) on the border of the balance sheet of the subscriber and the sub-subscriber, if the sub-subscriber is on the independent balance sheet;

c) At the beginning of each subabonent feed line at the subscriber substation, if only one subabonent is connected to the line separately.

7.11. When powered by a single source of electricity from several consumers by different tariff groups, electricity metering devices can be installed separately for the consumer of each tariff group.

In addition, electricity metering devices must be installed on separate production structures, energy-intensive equipment, on technology lines and other necessary places for electricity control. 7.12. If the electricity metering devices are installed on power inputs 6 to 35 kV and above transformer substations, in this case the attaching of current chains and metering voltage to measuring transformers should be performed separately from the relay protection chains.

If the electricity meter is installed on a separate panel, then the clamps of this panel should be installed seal. At the same time, the connection of secondary chains of measuring transformers with chains of devices of calculation accounting should be made without the use of intermediate clips. 7.13. If there are several tyre systems at the electrical installation and each voltage metering transformer is attached only to its tyre system, a device should be provided to switch the circuits of each power meter to the voltage metering transformers of the respective tyre systems.

7.14. The design of secondary circuits of measuring transformers should allow the filling of current and voltage terminals and allow electricity metering devices to be connected through special clamps that ensure the safe disconnection of current and voltage chains when replacing and maintaining, as well as filling them.

7.15. The design of the distribution cell, which has a voltage transformer with a disengager and high voltage fuses, should allow the seal to be installed.

The possibility of installing the seal should also be on the handle of the drive of the disconnector of the voltage metering power meter of the estimated electricity meter.

7.16. At the point of accounting, the nominal values of primary currents and voltage voltages must correspond to the maximum working values of current and voltage. 7.17. Single-phase metering power metering transformers installed in 0.4 kV electricity grids must additionally meet the following requirements:

- The data plate (material and inscription) of the transformer must guarantee the safety of information for the duration of the life (at least 25 years). On the case of the transformer in an unmovable way should be applied nominal conversion rate by current;

- The design of transformers should exclude the possibility of replacing the plate and disassembling transformers without damaging their hulls, protective parts and seals;

7.18. The inspection and acceptance of appliances or means of electricity metering at the site of the installation are carried out by the staff of the energy supplying organization in the presence of the consumer and a representative of the authorized state body for energy supervision.

7.19. The appliances or electricity metering facilities should have the following seals:

(a) The seal of the authorized state body in the field of standardization - in the lid and bolts of the lid attachment;

b) filling of the power supply organization: - in places of fixing the lid of the clamp pad;

- on the drive handle or on the high-voltage disconnector trolley and on the doors of the voltage transformer compartment, as well as on the lid of the automatic switch or other switch or other low-voltage switching or protective low-voltage circuit of electricity metering; - on the doors of the power and voltage transformer compartment;

- at each connection place of the secondary chain of power and voltage transformers, to which the accounting devices are attached.

Violation of seals installed on appliances or means of accounting deprives electricity of legal validity.

7.20. If it is not possible to read the information on the seal of the state check without the use of special means, in this case the seal is considered to be damaged.

7.21. The operation of appliances or electricity metering facilities must be organized in accordance with the requirements of the manufacturer's regulatory technical documents and instructions.

7.22. Periodic damage of appliances or means of calculation of electrical energy is carried out in due course by the energy supplying organization in coordination with the consumer.

- 7.23. In electricity metering systems, the accounting information with a margin of error must be consistent with the actual data.
- 7.24. Any types of work on the elements of the estimated electricity accounting should be carried out only in agreement with the consumer.
- 7.25. Responsibility for the safety and technical condition of measuring transformers, secondary circuits and other elements of the accounting system rests with the organization on whose balance the electrical installations are located. If the settlement scheme is violated or its elements are damaged, the accounting devices are recovered by the culprit.

## **CHAPTER 8. CALCULATION FOR ELECTRICITY CONSUMED**

- 8.1. The calculation for the electricity consumed over the estimated period is based on the readings of the electricity metering devices using tariffs set for the respective consumer groups.
- 8.2. Settlements with a subscriber with multiple tariff groups are made on the basis of the calculations of the accounting devices installed for each tariff group.
- 8.3. When tariffs change, the energy supplying organization is obliged to inform subscribers by the mediano later than 20 days before the introduction of new tariffs.
- At the same time, the contract for electricity consumption without losing the legal reality, the consumer is obliged from the day of the introduction of the new tariff, to pay the electricity consumed at new tariffs.
- 8.4. The correct application of the tariffs in the calculations between the energy supplying organization and the consumer is monitored by authorized government bodies.
- 8.5. In the case of incorrect classification of the energy supplying organization subscriber to a particular tariff group, the used electricity must be recalculated for the entire period of electricity supply, within the statute of limitations.
- 8.6. Electricity charges for a consumer with their own power station are calculated at a rate set for this consumer group.
- 8.7. The duration of the settlement period is set by one month.

Receiving a reading of the electricity metering devices for the purpose of mutual settlements with the subscriber with the party authorized by the authorized person of the energy supply organization is considered as the last check.

If the electricity metering scheme is made using current and voltage metering transformers, in this case the amount of electricity used should be calculated based only on nominal conversion rates of measuring transformers. Other corrective factors are not allowed.

- 8.8. If there is a violation in the calculated accounting of electricity is not the fault of the subscriber, before its restoration the amount of electricity consumed is determined by the average daily consumption of the previous estimated period or the corresponding period of the previous year. The estimated electricity accounting should be restored within a period of no more than one month.
- 8.9. Payment of used electricity must be made on payment documents issued by the energy supplying organization, within 10-teeday, from the day of receipt of the payment document to the bank serving the subscriber.
- 8.10. Penalties for each day of payment delay are set at 0.1 percent. The foam is added to the cost of electricity consumed during the estimated period.

Regardless of the right to charge the penalty, the energy supplying organization has the right, after 10 days of written warning of the subscriber, to stop the supply of electricity before payment of the debt.

8.11. If errors are found in the payment document, the subscriber must immediately contact the energy supplying organization. The energy supplying organization is obliged to immediately check the calculation. If necessary, the energy supplying organization can check the devices of the calculation.

Deviations in the meter readings are considered acceptable if they do not exceed the accuracy limits set for the device.

If the verification of the payment document or inspection of the metering device determine the need for recalculation, in this case the recalculation is made by the energy supplying organization in preparation of the next payment document.

8.12. When the consumer voluntarily connects their electrical installations, the energy supplying organization is obliged to immediately disconnect them, to calculate the electricity consumed without permission on the actual power of electrical installations and the actual working hours of the consumer, from the day of the last inspection, but no more than the statute of limitations and the materials of the offence to provide the authorized state authority for energy supervision to take administrative measures.

According to the written appeal of the consumer, his registration as a subscriber and the connection of his electrical installations to the electric network is made in due course.

8.13. If the metering device is damaged by the fault of the subscriber (the seal, damage to parts of the device, etc.), changes in the scheme of inclusion of the meter, connection of electricity receivers in addition to the meter or theft of electricity in other way, the energy supply organization and the authorized state authority for energy supervision have the right to disconnect the subscriber from the network and to recalculate the flow of electricity.

The amount of electricity consumed with these violations and its cost should be determined on the basis of the actual power and the number of hours of electrical appliances, from the day of the last withdrawal of the statement. The energy supplying organization must determine the energy consumption of the actual power and the number of hours of electrical receivers before the accounting is restored.

In the case of a change in the scheme of attaching accounting devices, measuring transformers, with external impact on the memory unit and the engine meter programming button, the secretive addition of current receivers past the metering devices (installation of hidden electrical wiring and switching devices), the detection of which at inspection and inspection is difficult - from the day of the last replacement of the electric meter or the last inspection of the electric meter, but no longer the time of the claim.

In controversial cases, an authorized government authority for energy oversight should be brought in to determine the correct amount of electricity consumed with irregularities. The material of the offences must be submitted to the authorized body of the State Energy Oversight Authority for consideration and action.

8.14. When leaving the occupied premises for various reasons, the subscriber is obliged in writing to notify the energy supplying organization for 7 days, to make a full payment for electrical energy on the day of departure.

After the full payment for the electricity consumed by the subscriber, the energy supplying organization must stop supplying electricity.

The new subscriber is designed and its electrical installations are connected to the electrical grid in due course.

8.15. Subscribers who use electricity for advertising, illumination, lighting of buildings and structures, regardless of the attached capacity, are required to obtain the permission of the energy supply organization and the authorized state authority for energy supervision, as well as to pay for the electricity consumed at the rate of the relevant group.

8.16. When using electricity for heating and hot water (except when the use of electricity for food and heating is provided by city planning regulations and regulations), the subscriber must submit technically cost-effective materials to the authorized state authority for energy supervision in order to obtain a permit for the use of electricity instead of another type of energy.

8.17. When an unspecified payment is received, the funds received are the payment of the subscriber's previous liabilities in the order of the calendar order of their occurrence, unless otherwise provided by the agreement of the parties.

8.18. Excessively paid for a certain period of money, in subsequent calculations, refers to the payment for the electricity consumed.

8.19. The cost of 1 kWh of electricity is set by the Price curant.

8.20 Electricity payments can be made in a prepayment, planned payment or other agreed way.

## **CHAPTER 9. REACTIVE ENERGY COMPENSATION**

9.1. Discounts (surcharges) to electricity tariffs for the consumption and generation of jet electricity are determined by the contract, unless the law provides otherwise.

9.2. The procedure for calculating the use of reactive electricity is defined by the "Method of calculating and applying discounts and allowances to tariffs on electric energy, for the consumption and generation of reactive energy" (annex 1).

9.3. Discounts and allowances for electricity payments with household consumers and budget organizations do not apply.

9.4. Control of the amount of reactive power and energy consumed, as well as the correct application of discounts and surcharges of tariffs to compensate for the reactive power of power plants of consumers is carried out by the authorized state authority for energy supervision.

## **CHAPTER 10. THE RESPONSIBILITIES, RIGHTS AND RESPONSIBILITIES OF THE ENERGY SUPPLYING ORGANIZATION AND THE CONSUMER**

10.1. The energy supplying organization is obliged to:

- (a) To supply the subscriber through the connected network electrical energy in a contractual volume under the agreed regime;
- b) to provide its networks for transiting through them with electric energy;
- (c) To make changes in the contractual volume of electricity and power consumption during the term of the contract at the request of the subscriber;
- d) notify the caller immediately in the following cases:
  - In cases of malfunctioning accounting tools and irregularities in the settlement accounting scheme;
  - If there are violations in the power networks with a temporary power outage of the subscriber due to the fault of the energy supply organization (causes of violations and the period of restoration of the normal mode of electricity supply of the subscriber);
  - Malfunctions in power lines, electrical installations and devices, including relay protection and automation, located in the territory of the power supply organization and providing electricity to the subscriber;



- (d) comply with the instructions of the authorized state authority on energy supervision;
- (e) To maintain at the border the balance sheet of electricity networks provided by state standards of the values of electricity quality;
- (f) To check the correctness of the work and set up system automatic anti-emergency means and automatic frequency unloading installed in electrical installations and devices of the subscriber.

10.2. The energy supplying organization has the right to:

- (a) To monitor the subscriber's compliance with the contractual volumes of electricity consumption and the state of its accounting;
- b) disable the electrical power supplying organization's electrical power supply and subscriber devices and carry out actions provided by this

The rules;

c) Stop the full or partial supply of electricity to the subscriber in the following cases:

- In the poor state of electrical installations leading to an accident, fire and life-threatening service personnel;
- Failure to comply with the state's authorised energy watchdog to address existing deficiencies;
- exceeding the established limits on electricity consumption and power consumption or violation of the established consumption regime;
- Revealing the facts of wasteful expenditure of electrical energy;
- unauthorised, without means of accounting or in addition to accounting for the accession of electric receivers or violation of electrical energy accounting schemes;
- In the absence of maintenance staff;
- Reducing the quality of electricity due to the consumer's fault to the values that disrupt the normal functioning of the power plants of the power supply organization and other consumers;
- Preventing officials from the energy supply organization and the authorized state energy oversight body to power plants and electricity metering devices to carry out their duties;
- Non-payment in due course for the cost of electricity consumed;
- If urgent measures are needed to prevent and eliminate an accident in the power supplying organization's networks;
- When a schedule is set to limit consumption and power outages in the event of a lack of electricity and power in the grid;

d) to reconcile the debt for electricity consumed within the statute of limitations within the statute of limitations and with the registration of relevant documents;

(d) Monitor the schemes of joining installations and devices that regulate the load of the subscriber's electrical network, the performance of the devices installed in the subscriber anti-emergency automation and other devices that provide for the regulation of the load of the power grid;

(e) To set for the subscriber a period of maximum loads of the electric network during the day in accordance with the regulatory authority-approved interval of no more than 6 hours per day; (f) to set the subscriber the volumes of generation and consumption of reactive energy (power).

10.3. The energy supplying organization is not liable to the subscriber for the non-release of the contractual volume of electricity caused by the following reasons:

- (a) As a result of the regulation of the electricity consumption regime carried out on the basis of legal and regulatory documents;
- b) Force-major circumstances for the treaty, including natural phenomena, some circumstances of public life, deviations from project norms and rules beyond acceptable limits;
- (c) Misperson's actions by the subscriber's staff, confirmed by the authorized state body for energy supervision;
- d) damage to the subscriber's installations and equipment, which led to the automatic disconnection of the power line;
- (d) Limiting or completely cutting off the supply of electricity for non-payment of the cost of electricity consumed on time.
- (e) The production of preventive work and repairs, the accession of new consumers, etc.;
- (f) non-compliance with the electricity supply scheme.

10.4. The consumer (subscriber) is obliged to:

- (a) Immediately notify the energy supplying organization of all violations in the operation of appliances and electricity metering systems;
- b) Submit the necessary documents at the request of the energy supplying organization and the authorized state authority for energy supervision;
- (c) To assist employees of the energy supplying organization and the authorized state authority on energy supervision to carry out the following work:
  - Inspection of devices and accounting systems;
- d) report within 10 days to the energy supplying organization about changes in bank details, name, owner and type of property, address;

- (d) When consumers or other organizations operate electrical stations side-by-side:
- agree with the energy organization on the construction of electric power stations;
  - To operate installations and equipment of electric stations under the current rules;
  - Ensure that power plants and equipment are safe and secure; Agree with the energy supply organization the mode of operation of electric stations;
  - provide the necessary information to the energy supply organization in a timely manner.
- (e) To reconcile the debt for electricity consumed within the statute of limitations and with the necessary documents at the request of the energy supplying organization; Ensure that the contractual regime of electricity and power consumption is implemented; Ensure that the power plants do not exceed the acceptable impact of their electrical installations on the quality of electricity at the point of joining the electricity network of the power organization;
- and) to immediately notify the energy supply organization about accidents and incidents related to power outages, violations of the installations and devices of the power supply organization located on the subscriber's territory;
- (k) To allow the staff of the energy supply organization at any time of the day for operational switches in the transit part of transformer substations and points, as well as the production of construction work and repair of its electrical networks located on the subscriber's territory, at the same time the energy supply organization is obliged to bring the work area to its original state at the end of the work.
- (l) To carry out the technical operation and safety equipment of electrical installations and equipment on its balance sheet, according to regulatory technical documents; (m) to observe operational discipline;
- (n) To enter into a contract with a third-party organization to maintain the electrical installations on its balance sheet in the absence of maintenance electrical personnel.

10.5. The consumer (subscriber) has the right:

- (a) To make proposals to change the contractual values of electricity consumption and capacity during the term of the contract;
- b) require the inspection and replacement of the energy-supplying device devices of the calculation of electricity consumption when they are detected to malfunction;
- (c) To require the energy supplying organization, in accordance with the statutory redress of the damage caused by the lack of electricity at the fault of the energy supply organization, within the contractual scope.

10.6. The energy provider and the subscriber are liable for non-compliance or improper performance of contractual duties.

10.7. The energy organization and the subscriber are mutually obliged to maintain the values of electricity quality indicators that ensure compliance with the requirements of state standards, at the border of the balance sheet of the electrical grid, and conducts periodic monitoring. The period of electricity quality control must be established in the contract.

Electricity quality indicators are determined by state standards.

10.8. The culprit in the decline in electricity quality and the time of operation with reduced electricity quality are determined by the results of measurements by static or recording devices.

The results of the measurements are issued by an act compiled by representatives of the energy supplying organization, the subscriber and the authorized state body for energy supervision.

10.9. The amount of low quality electricity is determined by the consumption of electricity for each estimated period (before the next measurement of quality indicators) and the percentage of working time with the reduced quality of electricity.

10.11. If the quality of electricity at the border of the balance sheet of the electricity grid is reduced by the subscriber, the subscriber pays the energy supply organization compensation of 25 per cent of the cost of low quality electricity.

10.12. In the case of a low-quality electricity transfer (one or more at a time) due to the power supplying organization, the latter pays the subscriber compensation of 25 per cent of the value of the reduced quality electricity released. 10.13. The energy supplying organization is not liable to the subscriber for the release of reduced quality electricity for those days during which the subscriber did not comply with the established regime of electricity consumption and allowed the excess of the contractual volumes of electricity and power consumption. 10.14. The energy supplying organization is not liable to the subscriber for the release of electric energy with voltage above or below the contractual limits, if the subscriber with its installations and devices to compensate for reactive energy (power), could not withstand the contractual indicators of the consumption of reactive energy (power) from the electrical networks of the power supplying organization.

10.15. In order to ensure the reliable and safe operation of electrical installations, the subscriber is required to carry out condition checks, measurements, tests and preventive repairs of his electrical installations and protective equipment, as well as repairs to buildings and facilities of distribution devices and transformers in volumes and on time set by the current rules and regulations.

## **CHAPTER 11. STATE ENERGY OVERSIGHT**

- 11.1. State energy oversight of compliance with established standards, rational use of electricity, regulations and regulations in the process of production, transmission, conversion and consumption of electricity, in the operation of facilities, electrical installations and equipment, is carried out by the authorized state authority for energy supervision.
- 11.2. Compliance with the regulations of the authorized state authority on energy supervision in due course is mandatory for energy supplying organizations and subscribers, regardless of ownership.
- 11.3. Heads of government, energy and electricity companies who fail to meet the reasonable requirements of the state-run energy watchdog or prevent their implementation will be held liable under the law of the Republic of Tajikistan.
- 11.4. Control of electrical installations operated under special rules is carried out in accordance with the existing regulatory technical documents.
- 11.5. The implementation by officials of the authorized state authority on the energy supervision of inspection of electrical installations does not remove from energy supplying organizations and subscribers, responsibility for compliance with energy regulations, and the rational use of electricity, including these Regulations.
- 11.6. A technical inspection of consumer electrical installations does not impose responsibility on the authorized state energy authority for their unstable operation during operation

## **CHAPTER 12. FEATURES OF RELATIONSHIPS WITH CONSUMERS OF DIFFERENT GROUPS**

- 12.1. Consumers with their own power stations (block-stations and private power plants)**
- 12.1.1. The consumer's power station, which is included directly or through consumer networks in the electricity grid of the energy system, is obliged to obey the single operational - the control department of the energy supply organization.
  - 12.1.2. According to the approved schedule, the energy supply organization must set an electricity station schedule for loading and supplying electricity to the grid.
  - 12.1.3. If the power station is insufficient, the contract should establish the amount of electricity released to the consumer from the power supplying network and the corresponding amount of power allowed.
  - 12.1.4. If there is excess power at the power station, the consumer can by contract to give excessively generated electricity to the power supplying organization.
  - 12.1.5. If the power station's load is lower than the target, the energy supply organization will rightly limit the supply of electricity to the owner of the power station in the amount of reduction.
  - 12.1.6. At the power station to account for the active electrical energy and reactive power allocated to the attached network or received from the network of the energy supply organization, the devices of the calculation accounting must be installed, in accordance with the requirements of the Rules of Electrical Installations (PUE).
  - 12.1.7. The loss of electricity in power station power stations, regardless of the electricity supply to the attached grid or the receipt of the power supply organization from the grid, relates to the power station.
  - 12.1.8. The calculation of the electricity generated from the attached network and received from the energy supply organization must be calculated separately.
  - 12.1.9. Tariffs for electricity power released by power stations to the attached grid must be set in the contract.
  - 12.1.10. The consumer pays the electricity received from the energy supplying network of the organization at a rate for the consumer group to which it belongs.
  - 12.1.11. If the consumer releases electricity through the network attached to the power station to another subscriber (residential settlement, businesses and organizations, etc.), the calculation with this subscriber is made at the rates of the relevant group.
  - 12.1.12. The order of billing and payment of the cost of electricity consumed must be established in the contract.
  - 12.1.13. If electricity is not released into the electricity grid of the power supplying organization due to the fault of the power station, the consumer must pay the cost of the electricity supplying the organization.  
The amount of electricity not to be discharged into the power supplying network due to the fault of the power station is defined as the difference between the specified and the actual daily return of electricity to the grid.
  - 12.1.14. The owner of the power station is not responsible for power outages caused by natural phenomena or by outsiders.
  - 12.1.15. Consumers receiving electricity from isolated (local) power plants are calculated for electricity at a reasonable tariff agreed by the parties.

### **12.2. Industrial and equivalent consumers**

- 12.2.1. The energy supplying organization is obliged to enter into a contract with the consumer only if there is an approved standard of electricity consumption per unit of output.  
The amount of electricity consumed should be determined on the basis of the specific consumption of electricity per unit of production, agreed with the authorized state body for energy supervision.
- 12.2.2. The electricity they consume on production and non-production needs is paid at a rate set for industrial and equivalent consumers.

12.2.3. The cost of electricity spent by industrial and equivalent consumers on non-production needs (residential settlements, hotels, health facilities, education, culture, services, recreation, trade, etc.) should be calculated at tariffs set for the respective consumer groups.

12.2.4. In the case of the location of individual industrial and equivalent facilities in other areas, the calculation of electricity spent at these facilities should be calculated at the rate of the relevant consumer groups.

12.2.5. Electrified urban transport with electricity used for traction purposes (including lighting and other requirements of traction substations and paths) pays for electrified transport tariffs.

Electricity spent on other needs (parks, depots, etc.) must be paid at the rates of the respective consumer groups.

12.2.6. In the event of exceeding the actual load or the amount of consumption of active and reactive electricity, the consumer must pay the energy supplying organization and the authorized state authority for energy supervision 5-multiple cost of electricity, consumed by a load exceeding the excess capacity or limit.

This paragraph must be applied when submitting supporting documents to the energy supplying organization or an act drawn up by the energy supplying organization or the authorized state authority for energy supervision, in the presence of the subscriber.

12.2.7. The consumer is obliged to develop and implement the necessary measures to prevent the marriage of manufactured products or accidents in electrical installations, to prevent the marriage of manufactured products or accidents in electrical installations, while reducing voltage and cutting off electricity as a result of automation or relay protection.

12.2.8. If electrical installations and equipment are used in the workplace, the way in which the Consumer And Equipment Regulations are not taken into account.

12.2.9. The industrial consumer, in addition to the responsibilities specified in paragraph 10.4 of these Regulations to ensure the economical, reliable and safe operation of electrical installations, is obliged to:

(a) To improve the electricity supply scheme with the allocation of responsible loads to the backed power lines, to cover technological and emergency armor, when the power grid introduces schedules to limit the electricity supply and its disconnection;

b) to comply with the characteristics and installations of relay protection and automation, as well as the installation of machines and safety devices, and coordinate with the energy supply organization the installation of automatic reserve switching devices;

(c) To monitor electricity quality periodically or if necessary and to carry out measures to improve the quality of electricity in their networks;

d) to compile and provide to the energy supply organization graphics of electrical loads for characteristic days;

(d) To balance electricity for the enterprise, including for energy-intensive equipment, workshops and consumer groups, and to analyze the efficiency of electrical energy use in production processes, to identify waste and loss of electrical energy, to develop and implement measures to reduce and eliminate them;

(e) Maintain a contractual level of jet power compensation;

(f) to develop, approve and comply with technically cost-effective unit standards of electricity consumption per unit of production (works) agreed with the authorized state energy oversight body.

(c) To assist employees of the energy supplying organization and the authorized state energy oversight body to carry out the following work:

- Measuring and recording information about the operation of jet power facilities and compensation devices and electrical installations and devices that affect the quality of electricity and included in the technological and emergency armor;

- Verification of the scheme of joining current receivers involved in the regulation of load in the electrical network; Inspection of the health of the devices installed in the subscriber anti-emergency automation and other devices that provide load control in the power system;

And) develop, in conjunction with the energy supply organization, a timetable for limiting consumption and stopping the supply of electricity when power is lacking in the grid;

(c) Ensure the safety of automatic frequency unloading devices and other system automation installed at substations of subscribers; 1) Have an energy passport;

(m) In case of emergency unloading, to comply with the requirements of the energy supplying organization to reduce (disconnection) load or limit consumption;

(n) Develop and implement organizationally-technical measures to save electricity;

### **12.3. Agricultural consumers** 12.3.1. Manufacturing needs of agricultural

consumers include:

(a) The operation of electric motors and other electric receivers of production (technological) purpose;

b) the operation of electric boilers (electric boilers), electric heaters and other heating devices for production (technological) purposes, as well as for heating and hot water supply of production facilities;

Lighting of production facilities and production areas;

(d) Lighting of non-manufacturing premises related to production.

12.3.2. If the agricultural consumer has only a common meter, then he is obliged within 3 months for production, utility - household and other needs will install separate meters.

12.3.3. The electricity bills used by agricultural consumers for non-productive needs are calculated at the rates set by the List for these groups.

12.3.4. Electricity, consumption for communal - household needs of the consumer and the needs of individual household subscribers attached to its networks, is determined by the readings of the relevant meters, the mutual account with the subscriber is made at the rate set by the List for these needs.

12.3.5. The selco-agricultural consumer for its production needs must develop, approve and comply with technically economically sound unit standards of electricity consumption per unit of production (work) agreed with the authorized state energy oversight body.

#### **12.4. Wholesale consumers - resellers of electric energy**

12.4.1. Wholesale consumers - resellers can join new or additional capacity, only with the permission of the energy supplying organization.

Wholesale consumers - resellers purchase electricity from energy supplying organizations at tariffs established by the contract or regulations of the Government of Tajikistan.

Wholesale consumers - resellers should make a mutual settlement with their subscribers on the rates set by the List for the respective consumer groups.

#### **12.5. Impervd users**

12.5.1. For a consumer financed from the state or local budget, the contractual volume (limit) of electricity consumption should be set in the amount allocated for this purpose.

12.5.2. Public buildings with multiple electricity users separated by management and management should have separate accounting for each consumer.

In buildings, electricity meters should be installed on introductory distribution devices (VRU), at the border of balance sheet. In the presence of built-in or attached transformer substations, the power of which is fully used by consumers of the building, the metering meters should be installed on the inputs of power transformers, on the combined shields of low voltage, which is simultaneously the VRU of the building.

VRU and registration devices of different subscribers, placed in the same building, can be installed in one common room. In agreement with the energy supply organization, the meters can be installed by one of the consumers, from which other consumers are fed in the building.

Responsibility for the safety of the settlement is vested in the organization where the funds are installed.

#### **12.6. Household consumers and housing utilities**

12.6.1. In order to join the electric grids of 3 phase electric receivers in apartment buildings and residential buildings of newly built settlements, the construction customer (citizen) must receive technical conditions from the energy supplying organization.

12.6.2. The power equipment of a newly constructed apartment building or reconstructed from the changes of external and internal electrical networks is made by the authorized state authority for energy supervision.

Electrical equipment must be attached to the grid on the basis of the permission of the authorized state authority on energy supervision, after correcting the shortcomings and re-examination.

12.6.3. In designated areas of apartment buildings for each apartment building, modern electronic electricity metering devices, compatible with the automatic system of electricity metering and control should be installed.

In addition, the metering devices are also installed to account for electricity used for general household needs.

Devices or other accounting tools are purchased in the following order:

(a) For newly built apartment buildings - on the part of the customer;

b) in residential buildings that are privately owned by citizens - from the energy supply to the organization.

12.6.5. Before joining the electricity grids of newly constructed residential buildings, the customer must submit to the energy supply organization a list of metering devices.

12.6.6. The housing organization, which manages the operation of the newly built residential building, must conclude a contract with the energy supplying organization for the consumption of electricity for general household needs.

12.6.7 If several consumer facilities have a common external electricity supply, the consumer must take responsibility for operating the external electricity network to the boundary of the power supply.

By mutual agreement of the parties, the limit of operational responsibility is set on the entry of the first subscriber object connected to the network of the energy supply organization.

12.6.8. Responsibility for the technical condition and safe operation of electrical equipment of the general household needs of apartment buildings rests with the housing organization, the introductions of which are the operation of the residential building.

12.6.9 Responsibility for the technical condition and safe operation of electrical wiring and electrical equipment in residential buildings, apartments of apartment buildings and other objects owned by citizens is assigned to the owner.

12.6.10. In apartments of multi-family apartment buildings, in residential buildings and dormitories with a corridor system, as well as in dwellings with a common meter, interested persons can set up electricity meters at their own expense for electricity payments between individual families.

Installation and operation of electricity meter control meters must meet the requirements of regulatory technical documents.

12.6.11. The maintenance of appliances or other accounting tools that are used to pay household subscribers should be carried out by the energy supply organization.

Installation of electricity metering tools for household consumers (population) must be carried out in accordance with the requirements of the Power Plant Rule.

Passage to the electric meters should be free.

The organization is carrying out a state inspection within the specified time frame, including the planned replacement of devices or other accounting facilities in the service of the energy supply organization.

12.6.12. The contract for the use of electric energy with domestic subscribers is through a submission to the energy supply organization.

12.6.13. Household subscribers, regardless of the power and purpose of electric receivers, the place where the meter is installed, electricity spent on household needs in private homes, in apartments of apartment buildings, in homesteads, in garages of personal cars and other personal objects, pays at a single rate set by the List for the population.

It is forbidden to charge the population any additional sums for electricity, in excess of the set tariff cost.

12.6.14. If the next bypass for various reasons did not allow the registration of meter readings, in this case the energy supplying company controller on the personal account indicates the consumption of electricity based on the electricity consumption for the previous estimated period.

If the caller was not able to remove the meter readings during the two settlement periods and the subscriber did not hand over the meter readings to the energy supplying organization, in this case the energy supplying organization has the right to stop the supply of electricity.

12.6.15. If a subscriber in an apartment building, in a private house, in a homestead, in a country house or in a garage of a personal car engaged in individual entrepreneurship, in this case a mutual calculation for the electricity used for the needs of individual entrepreneurship, is made at the rate of the relevant group of consumers.

In this case, a separate accounting account must be established.

12.6.16. In case of temporary non-use of electricity, or resale of residential premises (houses), the subscriber is obliged to notify the energy supplying organization in 7 days, to check payments with it and, if receivables are found, to repay it.

12.6.17 When purchasing a new dwelling (house) or other private building, the owner is obliged to submit an application within 7 days - a commitment to the energy supplying organization and open a personal account.

### **13. CONDITIONS OF THE CESSATION OF ELECTRICITY SUPPLY**

13.1. The supply of electricity to consumers of all tariff groups is made in quantities due to the contract. Restrictions on electricity consumption, as well as measures to regulate the schedules of loads by consumers, are carried out in accordance with the special instructions and reflected in the terms of the contract.

13.2. The energy supply organization and the authorized government energy oversight body have the right, after warning the consumer, to stop supplying it in full or partially in cases:

- (a) The unsatisfactory state of the consumer's electrical installations, which threaten the protection of health, the environment, national security and can lead to accidents, fires and other accidents;
  - b) non-compliance with the requirements of the energy supplying organization and the authorized state body for energy supervision to correct deficiencies in electrical installations and in the energy industry;
  - (c) Electricity consumption of the super-established consumption limit or violation of the established mode of electricity consumption;
  - (c) Use of electric energy without a contract;
  - d) wasteful expenditure of electrical energy;
- Joining consumers' networks without the permission of the authorized state body for energy supervision and the energy supply organization;
- (e) Joining receivers without a meter, in addition to a meter or violation of electricity metering schemes;
- Absence of the responsible person for the energy economy;

- (c) Reducing the quality of electricity due to the consumer's fault to the values that disrupt the normal functioning of the power supply organization and other consumers;
- and) preventing representatives of the authorized state authority on energy supervision and the energy supply organization to the consumer's electrical installations or electricity metering devices;
- (c) non-payment of a payment document for spent electricity within a no more than one month, from the date of receipt of the payment document;
- l) with a shortage of electrical power in the grid.

13.3. To take urgent measures to prevent or eliminate an accident, the organization has the right to disable the consumer's power plant and then send a message to the subscriber and the authorized state authority for energy supervision about the reasons for the outage.

13.4. In order to ensure that energy systems operate sustainably, if there is a potential lack of electricity or energy, the energy supplying organization must have and, if necessary, impose restrictions or disconnection of consumers.

13.5. . . the authorized state body for energy supervision and the energy supply organization have the right to require the consumer to reduce the load to a contractual value.

The requirements of the representatives of the authorized state body on energy supervision and the energy supplying organization to reduce the load to contractual values, must be fulfilled by the consumer unquestioningly and immediately.

If the requirement of representatives of the authorized state authority on energy supervision and the energy supply organization to reduce the load within 10 minutes is not met, the energy supplying organization can, after the warning, make a partial or complete disconnection of the consumer from the network.

In the event of a shortage of electricity, the energy supplying organization has the right to force a complete disconnection of the consumer from the network.

Part of the line of those consumers who do not tolerate even short-term interruptions in the supply of electricity (explosive, fire-prone, etc.) is not allowed to be completely disconnected.

### **SPECIAL CONDITIONS FOR REFLECTION IN THE TREATY**

14.1. In determining the category of reliability of the subscriber's electricity supply, the contract indicates the category depending on the nature of the load of the consumer and the category according to the actual scheme of external electricity supply of the enterprise, the organization.

14.2. When the subscriber's backup power source (cable, air transmission line) is on its balance sheet fails and it is not restored within 3 days, the energy supplying organization has the right to amend the consumer category, according to the actual electricity supply scheme, until the backup power source is fully restored.

14.3. In order to maintain the functioning of the power grid and the sustainability of the energy supply to consumers in the face of electricity scarcity, the power grid, in accordance with the current policy materials, develops a schedule to limit the consumption of electricity and power and brings to consumers for execution no later than September 15 annually.

14.4. In cases of disputes in cases of damages provided by chapters 8, 10 and 12, calculations can be made according to the "Method of determining the extent of damage caused in violation of the electricity rule" (annex 2).

*Annex No1*

#### *Methodology*

#### **Calculations and applications of discounts and allowances to tariffs on electric energy, consumption and generation reactive energy**

1. This method determines the order of calculation and application of discounts and allowances to tariffs of electric energy, for consumption from the grid network and generation into the grid of the jet energy system.
2. In payments with consumers of electric energy, discounts (surcharges) are applied to the tariff on electric energy. Discounts (allowances) for compensation of reactive energy and power are made by industrial and equivalent consumers, electrified urban transport (electric) production agricultural consumers, whose authorized capacity in the contract of electricity supply is 50 kW or more.
3. The discounts are designed to increase the economic interest of consumers in improving the power grid's voltage and jet power modes during the hours (periods) of maximum and minimum loads of the power system.
4. Discounts (allowances) for the compensation of jet energy and power are determined on the basis of the readings of the estimated electrical energy metering devices.

If the estimated electrical energy accounting devices are not installed at the edge of the balance sheet section of the electrical grid, the amount of power consumed from the network and the power generated by the consumer into the network of the jet

power grid and power is determined on the basis of the estimated losses of reactive energy and power on the sections of the network (in power lines and power transformers) between the boundaries of the balance sheet and the corresponding points of connection of the electricity meter.

5. Discounts to electricity tariffs are accrued:

- if a consumer attached to a power grid with a sustained surplus of jet power, on the instructions of the energy supplying organization, consumes reactive power from the grid network during the hours of minimal loads;
- if a consumer attached to a power grid node with a persistent lack of jet power, on the instructions of the energy supply organization, generates jet power into the grid network during the maximum loads.

6. Electricity tariff surcharges are awarded:

For consumption from the grid and the generation of jet energy and power to the grid in modes not agreed with the energy supplying organization.

7. Hours of large and small loads of the electrical network are periods of day in which the consumption (generation) of reactive power by the consumer leads to additional losses of electrical energy in the electrical grid.

The hours of large and small loads of the electricity network by the energy supplying organization are set individually for each consumer based on the analysis of the consumer's load graphs and the electrical network from which he receives power. The values consumed from the network and generated in the grid of reactive power and energy are determined by the readings of the estimated reactive energy meters (induction with reverse stopper, or electronic).

8. The calculation of discounts (allowances) is made on each feed line of the consumer separately.

9. The rate at which payment for the jet energy consumed is applied at the current list price.

10. The economic value of jet energy consumption is established in the contract for the compensation of reactive power, concluded between the authorized authority and the consumer.

11. One month is taken for the estimated period.

12. The total surcharge or discount to the electricity tariff consists of two components:

(a) Surcharges for increased jet power consumption of the 1<sup>st</sup> compared to the optimal value of the power supply organization, 1 during the maximum active load of the power system.

The allowance (%) for the increased consumption of reactive power compared to the given optimal value is determined by the formula:

$$H_1 - 30 \frac{Q_{\phi 1} - Q_{\phi 1}}{P_{\phi}}$$

where  $P_{\phi}$  is the actual value of the consumer's highest half-hour active power in the hours of the greatest active loads of the power system over the estimated period.

If the actual reactive power is less than the specified  $e_1$ , the  $H_1$  surcharge is at zero;

b) Discounts or surcharges to the tariff are made for the deviation of the mode of operation of compensating devices from the specified, estimated deviation of the actual consumption of reactive power of  $F_2$  from the specified energy supply organization optimal value of  $e_2$  in the hours of low active load of the power system.

Discount or surcharge (%) To the tariff for compliance with the specified mode of operation of compensating devices is determined by the formula:

$$H_2 - 20 \frac{Q_{\phi 2} - Q_{\phi 2}}{P_{\phi}} - 2$$

A positive  $H_2$  means a surcharge, a negative one means a discount.

The difference in brackets is always accepted positive, regardless of its mark.

Payment for electricity consumed is made according to the formula:



$$C = \alpha W_x (I + H_1) (I + H_2)$$

Where  $\alpha$  - tariff on electric energy;  $W$ - the amount of electricity consumed during the estimated period, kWh.

13. For traction substations of electrified urban transport, the value of  $P_F$  is defined by the formula:

$$P_{\phi} = 1,3 \frac{I_{np}}{24 D},$$

where  $W_p$ - active electricity, fixed by the electric meter for the D-Day of the settlement period.

For these consumers, it is allowed to determine discounts and surcharges based on the total values of  $P_F, F_1, F_2, e_1, e_2$  for all accounting points specified in the electricity contract.

14. The values of  $e_1$  and  $e_2$  are determined by the authorized body.

If the consumer's electrical installations are powered by different sources, the consumer's optimal reactive load is set separately for each power source.

15. Control of the actual reactive power of the consumer should be made by the calculation devices of accounting, fixing the maximum reactive load during the maximum load hours of the power system.

If the grid is required to generate jet energy into the electrical grid during the hours of heavy loads of the electrical grid and/or the forced consumption of reactive energy during the hours of its small loads, the way the energy is accounted for between the energy supplying organization and the consumer is agreed between the energy supplying organization and the consumer.

16. In the complete absence of jet energy meters, or their breakdown and failure, monthly consumption of reactive energy is determined by the estimated method of consumption of active energy with a factor of 0.8.

17. The need to install compensating devices is determined by the authorized authority on the basis of the calculations made.

The power of the compensating device and the periods of their operation during the day are fixed in the contract for compensation of reactive energy.

18. Installation and dismantling of the consumer compensating devices is made only with the permission of the authorized authority.

In the event of an emergency failure of compensating devices or the removal of them for repairs for a limited time, consumers should report it to the authorized authority. The deadline for the devices to be put into effect is arranged.

The failure of compensatory devices or the removal of them for repair without communication to the authorized authority is considered as a violation of the specified periods of operation of devices.

19. The method and conditions for controlling reactive energy and power, indicating the instruments on which it will be carried out, as well as on which the calculation for the consumed reactive energy, should be stipulated in the contract for compensation of reactive power.

When powering the consumer's power plants from the power plant and the power supplying organization's networks, control over the consumer's actual reactive power is carried out on accounting devices designed for the consumer's calculations with the energy supplying organization.

20. If there are no compensating devices on the consumer's network and the calculation concluded that it was not appropriate to install them, then there were no discounts or surcharges to the electricity tariff for the compensation of reactive power.

21. Disagreements between the consumer and the authorised authority on the application of the discount scale and surcharges to the electricity tariff for compensation of jet power in power plants of consumers are considered in accordance with the current legislation of the Republic of Tajikistan.

**SOURCE definition of the extent of damage caused in violation of the rule of electric energy**

The technique is an integral part of the "Electricity Rules."

The extent of the damage caused by violations of the rules of use of electric energy is determined by the calculated way based on the actual power used and the time of the toco-receivers.

Consumers, regardless of the form of ownership, mainly use electric energy through various household appliances for household needs.

The practice shows that the probability of simultaneous use of all household appliances is too small.

Consumers at the right time of day at the same time use several receivers to fulfill specific household needs.

In addition, some household tokens (termex, condisioners and venelers etc.) are used in a re-brief and seasonal mode.

On average, the actual time of the crawling of such tokens per day is 10-12 hours.

Electric drinks, electric kettles and similar electric appliances are used for cooking and heating water 2to3 times daily, for 1to2 hours.

Household appliances (vacuum cleaner, washing machines, irons and ovens) are used for dusting, washing and ironing clothes and nailing bread 1-2 times a week for 2-3 hours.

Eclectic energy in various spheres of the national economy, in addition to household needs, is used with the help of force currents for various production and economic needs.

Power currents mostly work in a long, short-term and re-short mode.

In the long-term mode, mainly operate electric motors, electric furnaces, the working power of which is determined by the formula:

$$P_{Work} = R_{passport}$$

In short-term mode, mainly work electrical welding and straightening machines, the working power of which is determined by the formula:

$$P_{Workable} = S_{passport} \cos \varphi_{nom}$$

In the re-term mode, receivers work on technical passports whose power is specified in the PV, i.e. PV - 15%; 25 %; 40% or 60%.

$$P_{rabochiy} = P_{паспорт} \cdot \sqrt{BC_{паспорт}} : BC 100\%$$

There are a lot of currents on the production lines, which perform work in different production modes. For this reason, determining the power and time of use of these tokens is too difficult.

The period of work of the current printers in violation of the rules of use of electric energy is marked by the letter T.

T- is determined on the basis of documents proving the actual period of work, in which the receivers are used in violation of the current rule and such documents are: - the act of surrendering and accepting the completed works;

Permission to commission new facilities;

A document confirming the date of the purchase of the power plant in the retail network; -the passport of the electrical installation, which shows the technical data and the date of its manufacture.

-the last act of taking in the ecplation and the installation of control seals of the energy supply organization.

- a certificate from the energy supply organization about the monthly operation of electricity in the period before the violation of the rules of electric power use.

The period of operation of the heating system is accepted from the beginning of the current heating season.

In the absence of documentary evidence, the period of actual work of the technicians is taken from the date of the last visit of the representative of the energy supply organization for the purpose of inspection or removal of the readings of the devices.

If the consumer organized a hidden wiring, connected in addition to accounting devices, and to determine it visually, without an instrument survey is impossible, then in the calculations of the shift of work of such tokens is adopted the statute of limitations.

Low-power household appliances have a nominal capacity of up to 200 W.S.P.d., which is the sum of nominal capacity of these toco-receivers.

The calculation of the amount of electricity consumed with violations of the existing rules is carried out by the types of load: lighting, electric heating, production, etc.

**1. Calculating the electricity consumed by load type**

**1.1. Domestic household lighting**

The installed power is calculated by the actual number of lighting points and the power of each lamp used:

$$P_{(\text{установленный})} = \sum n_i \times P_i, \text{ кВт.}$$

$P_i$  - the power of a separate lamp at point  $i$ , kW;  $n_i$  - the number of lamps of the same capacity  $P_i$  number of which in the group is  $n$  piece.

The working power of the lamps at the same time is determined by the formula:

$$P_{(\text{working})} = P_{(\text{installed})} \times K_{(\text{demands})} \text{ (kW)}$$

$C$  - is the demand factor, which determines the power of simultaneous used lamps.

(Electric networks and electrical equipment of residential and public buildings, I.K.Tulchin, G.I. Nudler, 1990).

The calculation of the electricity used for internal lighting is determined by the formula:

$$W_{(\text{освещения})} = P_{(\text{рабочий})} \times t \times T, \text{ кВт.час.}$$

$t$  - the time of use of lamps per day and is determined depending on the necessary duration of the hanging time per day, (hour).

For example, winter time lighting lamps of household consumers on average are performed 12-14 hours, and in the summer 7-8 hours

$T$  - period of operation of lamps, (day).

The amount of damage caused by the use of internal household lighting devices in violation of the existing rules, is determined by the formula:

$$C_{(\text{lighting})} = W_{(\text{lighting})} \times T_{(\text{tariff})}, \text{ (somon).}$$

$T_{(\text{tariff})}$  - is valuable set to pay consumers electricity for a given tariffication group by the current list price.

## 1.2. Outdoor lighting devices for different consumers

The amount of damage to nanoisony use in violation of the current rules by outdoor lighting devices of various consumers, is also calculated similarly at paragraph 1.1 with a demand ratio of 0.9.

When the external lighting is automatically controlled, the working time during the day is determined by a given daily regime.

## 1.3. Internal lighting devices for different consumers

The amount of damage caused by the use of outdoor lighting devices by various consumers in violation of the existing rules is also calculated similarly to paragraph 1.1 with the demand ratio of the  $X$

1 Emergency lighting is separately calculated according to the mode of their use.

## 2. Electronic heating devices and installations

### 2.1. Electric heating appliances of household consumers

The estimated power of household electors, whose nominal moss does not bring 2.5 kW and connects to a single-phase network, is determined by the formula:

$$P_{(\text{номинальный})} = P_1 + P_2 + P_3 \dots + \dots + P_m$$

$R_m$  - the power of different household receivers, which in the necessary time of day connect to the single-phase electric network.

$m$  - colic of simultaneously used household elekron heating devices, (stuff).

In calculations, the working power of the elekron heaters is accepted equal to their nominal power.

$$P_{(\text{рабочий})} = P_{(\text{номинальный})}, \text{ (кВт)}$$

The demand ratio of household electric plyses is accepted depending on their quantity.

-when different household electric heating devices are used at the same time then the demand factor is taken  $K_{(\text{demand})}$  of 0.5.

-for four pin-to-be  $K_{(\text{demand})}$ - 0.6;

-for three pin-to-a-half electric plyst  $K_{(\text{demand})}$ - 0.65; -for

twopin-to-a-half  $K_{(\text{demand})}$ - 0.7

At the catering enterprises (dining room, restaurant, bistros, cafes, bar, etc.) are accepted the driving values of the demand:

-with electric plyst coefficient  $K_{(\text{demand})}$  - 1,

-with two electric plyses  $K_{(\text{demand})}$  - 0.8;

-with three or more electric plyses  $K_{(\text{demand})}$  - 0.7

In calculations, the working power of household electric plits is determined by the appropriate demand factor according to the formula:

$$P_{(\text{рабочий})} = P_{(\text{номинальный})} \times K_{(\text{спрос})}, \text{ (кВт)}$$

Electricity consumption used for heating, hot water supply, food preparation and other household needs is determined by the formula:

$$W_{\text{нагреватели}} = P_{(\text{рабочий})} \times t \times T, \text{ кВт.час}$$

t- it is a valid time of operation of electric heating devices, defined depending on the need to use them during the day, for each of them according to the formula:  $t = t_1 q_1 + t_2 q_2 + t_3 q_3 + \dots + t_n q_n$ ; n, (hour).  
n-the number of electric heating devices used simultaneously per day.

T -the period of operation of electric heating devices, is ahead of the actual, documented term but no more than the statute of limitations.

For heating systems is taken from the beginning of the current heating season.

For example, household electric heaters crawled out per day (electric cooking 6 hours, standard thermostat for hot water 10 hour, air conditioner for heating the room 16 hours, and other electric heating devices (spirit, iron, vacuum cleaner, etc.) used in a week 1-2 times 2-3 hours, and for a day

$(3/5) : 7 \times 2.1$  hours

t -  $(t_1 - t_2 - t_3 - \dots - t_n) : n - (6 - 10 - 16 - 2.1) : 4 = 34.1 : 4 = 8.5$

The amount of damage caused by the crawling of household electric heating devices in violation of the existing rules is determined by the formula:

$C_{\text{(рушной)}} = W_{\text{нагреватели}} \times T_{\text{(тариф)}}$  сомонѳ.

T(tariff)- is valuable set by consumers to pay for electricity for the given tariffication group by the current list price.

## 2.2. Electronic heating devices and installations of production and retail enterprises

In manufacturing plants and enterprises in the sphere of trade with a whole production of steam, heating workshops and production facilities used electric heaters

(boilers, steam generators, heating units) connected to a single-phase and three-phase electrical network.

The amount of damage caused by the use of electric heaters and installations

breach of the existing rules is also calculated similarly on paragraph 2.1 with the demand ratio of the X

=1

t is the valid working time of the electric heating devices during the day, which is determined by the length of the work time of the shop or enterprise according to the formula:  $t = t_{\text{(shift)}}$  and the lengthiness of the work shift can be: 8; 12; 16 and 24 hours a day. T -the period of operation of electric heating devices, is ahead of the actual, documented term but no more than the statute of limitations.

For heating systems, the heating supply is accepted from the beginning of the current heating season.

T(tariff)- is valuable set by consumers to pay for thermal energy for the given tariffication group by the current list price.

## 2.3. Electronic heating devices and installations of production and trading plants at the location of a separate accounting device

When a separate metering device is in place

For electric heaters and installations, the working power is determined by the method of measuring veedchins according to the formula:

$P_{\text{(рабочый)}} = 1.732 \times U \times I \times \Phi$

Power Factor Accepted:  $\cos \phi = 1$

The amount of damage caused by the use of electric heating devices is determined by the method specified in paragraph 2.1. this technique.

## 3. Power electric appliances

The production plants have a number of power receivers working in various technological regimes and the above methods to determine the working capacity of these enterprises is complex. For this reason, it can be defined by a half-hour load measurement by formula:

$P_{\text{(рабочый)}} = 1.732 \times U \times I \times \Phi$

-for the power factor is taken by the power system:  $\cos \phi = 0.92$

Also, it is possible to determine by the maximum wicket of monthly electricity consumption according to the formula:

$P_{\text{(рабочый)}} = W_{\text{максимум}} : T_{\text{(рабочый день)}} : t_{\text{(смена)}}$ , кВт.

$W_{\text{максимум}}$ - the maximum monthly electricity consumption in the shift before the violation of the current rules, its value is determined from the data of the monthly payment of the consumer for electricity.

$T_{\text{(working day)}}$  -calendar workingdays, determined for a month with maximum electricity consumption.  $t_{\text{(shift)}}$  -opening hours per month of maximum electricity consumption.

$W_{\text{(силовой)}} = P_{\text{(рабочий)}} \times t_{\text{(смена)}} \times T_{\text{(период работы)}}$ , кВт. соат

$T_{\text{(period of work)}}$  - the period of work of force to coprim, which were used in violation of the existing rules and is ahead of the actual, documented term, but no more than the statute of limitations.

The amount of damage caused by consumers with the exquerization of force shockersis determined by the formula:

$S_{\text{(power)}} = q \times W_{\text{(power)}} \times T_{\text{(tariff)}}$ , (somon).

$T_{\text{(tariff)}}$ - is valuable set by consumers to pay for electricity for the given tarification group by the current list price.

**4. Calculating all the damage caused by the use of elective energy.** The total consumption of electricity used with the power of the current rules is thinned by the formula:

$W = W_1 + W_2 + W_3 + \dots + W_n$

$W_n$ - electricity consumption emitted by illuminated, electric heating and silt receivers, etc.

The total damage is calculated by the formula:

$C = C_1 + C_2 + C_3 + \dots + C_n$

$C$  - total damage (in monetary terms) method of definition, which is given in 1.1 -1.2-2.1.2.2, 2.3. and three points of this technique.

*Apps number 3*

### **Methodology calculating the loss of electrical energy at energy facilities**

#### **1. CALCULATING THE LOSS OF ELECTRICITY IN POWER TRANSFORMERS**

When installing a calculated electric meter after a subscriber transformer, the loss of electricity from the electricity balance boundary to the place where the electric meter is installed is payable and is determined by the calculated way and summarized with the useful release of electricity to the consumer.

The actual value of current and voltage is determined by the result of measuring these parameters on a low country power transformer using an ammeter, voltmeter, WAF and other modern precision devices.

Phase load (Amper)			And <sub>sred</sub> (Amper)	Tensions, (Volt)			In <sub>cped</sub> (Bolt)	Lost power at idling and with a short missch of the transformer, (kW)	
And <sub>A</sub>	And <sub>B</sub>	I <sub>C</sub>		in the And	U <sub>B</sub>	U <sub>C</sub>		Δ P <sub>x</sub>	Δ P <sub>kz</sub>

Note:

The measured voltage in the Volts translates to kV by formula  $U = U_{environments} : 1000$ , KV Factual power of the power transformer is determined by the formula:

$$S_{фактичес} = 1,732 * I_{сред} * U_{сред}$$

R<sub>xx</sub> -loss of power idling transformer is taken from reference books, kW.

The loss of power of the meek power transformer is taken from the directories, kW.

Transformer type	U <sub>ном</sub> kV	S <sub>ном</sub> кВА	Time for idling and short-circuiting (time)		
			T <sub>Kaland</sub> 365 <sub>day</sub> * 24 <sub>time</sub>	T <sub>Workday</sub> - 24 <sub>days</sub> q 8 <sub>hours</sub> q 12 <sub>month</sub>	T <sub>xx</sub> q T <sub>Kaland</sub> - T <sub>Work</sub>

The actual use factor of the power transformer is determined by:  $\beta_{Phamsem}(S_{actual} : S_{nom}) \times 100\%$

The loss of electricity in idle progress in power transformers is equal:

$$\Delta W_{xx} = \Delta P_{xx} * T_x$$

The loss of electricity during the short circuit of power transformers is equal to:

$$\Delta W_{kz} = (\beta^2 * \Delta P_{kz}) * T_{рабочий}$$

The total loss of the power transformer is equal to:

$$\Delta W_{общая} = \Delta W_{рабочий} + \Delta W_{xx}$$

## 2. Calculating the load loss of electricity in the air and cable lines of the electorate.

The basic technical data of the air and cable lines of the eletrotransmission is taken from the technical passport of these lines.

И <sub>пакт</sub> (Walt)	И <sub>факт</sub> (kW time)	Thefact φ	Wire type	Mm 2	L (km)	r ('L'): (om)	R = r x L (om)

Note: The specific resistance of one meter of aluminum and copper wire is determined from technical references and equals:

0.03 and copper wire q 0.0175 Om. mm<sup>2</sup> / meter

### 2.1. The loss of electricity to the air and cable lines of the electricity transmission in the accident of damage to the metering devices is made by measuring the load according to the formula:

$W_{nag} = q_{kto} \times I_{medium} \times t \times k_{form}^2$  kW. Hour Where,

K - coefficient, taking into account the difference in configurations of active graphs and reactive load.

By<sup>2</sup><sub>form</sub> is a graph shape factor square.

With even load K<sub>to</sub> and K<sup>2</sup><sub>form</sub> equals 1 (one).

$$\Delta W_{nag} = \Delta P_{among} \times T. \quad \text{kW. time}$$

T - the number of hours of operation of the line for the calculated period

R<sub>environments</sub> - power loss in the air and cable lines of the eletrotransmission at the average loads for the calculated period, which is determined by the formula:

$$\Delta P_{among} = 3 \times I_{among}^2 \times R \times 10^{-3}, \text{ kW}$$

I<sub>environments</sub> - average current load per calculated period (Amper), R - active resistance line,

Om - which is determined by the formula:

$$R = R_0 \times L \text{ (OM)}.$$

R<sub>0</sub> - specific resistance per 1 km of wire (cable) at its temperature of 20<sup>0</sup> C (passport or reference data), Om/km L - the length of the line (km).

**2.2. The calculation of the loss of electricity on air and cable lines with the correct active energy metering devices and the availability of its indication for the calculated is determined by the formula:**

$$\Delta W_{\text{наг}} = \frac{W_{\text{актив}}^2 R_0 \times L}{W_{\text{наг}} \cos^2 \varphi}$$

$W_{\text{актив}}$  - active electricity consumed for the calculated period (kWh).  $\cos\varphi$  - actual coefficient, power.

**2.3. The calculation of the loss of electricity on air and cable lines with the correct accounting devices of active and reactive energy and the availability of their indication for the calculated is determined by the formula:**

$$\Delta W_{\text{наг}} = \frac{W_{\text{актив}}^2 + V_{\text{реак}}^2 R_0 \times L}{(U_{\text{фаз (сред)}}^2 \times \cos^2 \varphi) \times T} \cdot 10^{-3} \text{ кВт.час}$$

$W_{\text{реакт}}$  - reactive electricity consumed for the calculated period (kWh).