Development strategy

Mission of Kubanenergo PJSC is to make profit under the terms of long-term provision of reliable, high-quality and affordable electric power for customers of Krasnodar Krai and the Republic of Adygea by organizing the most efficient management of the distribution grid infrastructure using advanced technologies and innovations with account of global standards of the quality of the provided services and the best practice of corporate governance.

Igor Vladimirovich Shmakov
Deputy Director General for Controlling
(coordinates activities in the field of implementation and integration of controlling systems, quality management, improvement of management internal control, risk management and internal audit systems)

"Global trends and changes in the 21st century, constantly changing external environment determine operating conditions of the power grid complex of the Russian Federation. Our Company shall comply with these conditions and be ready for an adequate response to any challenges. Key objective of the Kubanenergo PJSC Controlling Unit with regard to this issue is to introduce a continuously improving management and control system aimed at effective and appropriate use of Company resources with simultaneous implementation of advanced management techniques and methodological tools. In 2016, Kubanenergo PJSC approved and implements two system documents that may, in the mid-run, positively influence on the efficiency and quality of the Company activities: complex of measures aimed at improvement of the management system of Kubanenergo PJSC and the Plan of Measures Aimed at Development and Improvement of Internal Control and Risk Management Systems of Kubanenergo PJSC for 2016–2018."

Strategic goals and priorities of the Company

Being part of the unified distribution grid complex of Russia, the Company seeks to achieve the objectives defined at the state level, i. e. milestones for electric grid complex till 2030, set by the Development Strategy of the Electric Grid Complex of the Russian Federation[3].

In order to perform the above milestones as well as ensure effective activity and development, the Company sets the following strategic goals:

1. Increase of electric power supply reliability of Krasnodar Krai and the Republic of Adygea;
2. Improvement of the quality of customer service and increase of the accessibility of power grid infrastructure;
3. Advanced grid development and implementation of new technologies;
4. Increase of investment appeal and capitalization;
5. Proper working conditions, increase of professional competence and loyalty of the Company personnel.

The Board of Directors approved certain areas of Company activities as priority ones. In order to achieve the strategic goals, the Company sets specific objectives and implements Company development in the priority areas:

1. *Innovative development:*

[3] Approved by Executive Order of the Government of the Russian Federation No. 511-p of April 3, 2013.

The purpose of the innovative development of the Company is a transition to electric grids of a new technological mode with qualitatively new characteristics of reliability, efficiency, accessibility, manageability and customer centricity of the power grid complex. The Innovative Development Program sets target levels of the development of innovative trends and determines the status of assets implemented as part of the investment program as innovative ones.

The development of the updated Innovative Development Program for 2016–2020 with an outlook until 2025 has been started.

2. *Ensuring the established reliability and quality level of the rendered services in accordance with regulatory legal acts*

Increase of reliability and quality of energy supply to the level corresponding to customer needs.

Reduction in undersupply of electricity;

Cost reduction of technological connection for small and medium-sized businesses.

3. *Introduction of the Company' Production Assets Management System (hereinafter referred to as the PAMS)*

The purpose of the introduction of the Company Production Assets Management System (PAMS) is: improvement of quality of planning maintenance and repair works, productivity improvement, reduction of labor input in maintenance and repair processes by optimizing information technology solutions.

4. *Ensuring availability of the energy infrastructure and quality of technological connection to the Company electric grids.*

Efficiency improvement of production and investment activities.

Organization of work on development, approval and implementation of technological connection procedure of electrical installations of legal entities and individuals to the electric grid of Kubanenergo PJSC in accordance with the existing regulatory framework with account of a balance of interests of the grid company and customers of technological connection service.

5. *Development planning of the distributive power grid complex of Kubanenergo PJSC*

The purpose of development planning of the distributive power grid complex of Kubanenergo PJSC is to ensure development of the grid infrastructure and generating capacities in order to meet long-term and medium-term demand for electric power and capacity, create stable and favorable conditions for attraction of investments in the construction of electric power facilities and creation of an effective and balanced energy infrastructure ensuring social and economic development of Krasnodar Krai and the Republic of Adygea.

By efforts of project organizations, Kubanenergo PJSC annually performs development of Comprehensive Programs of Development of Electric Grids of 35 kV and above in the territory of the Krasnodar Krai and the Republic of Adygea for a five-year period.

6. *Implementation of environmental policy*

The purpose of the implementation of environmental policy is to ensure the introduction of energy-efficient technologies and the improvement of technological processes, which contribute to reduction of harmful effect, as well as to ensure consistent performance of environmental activities. The implementation of the priority area is an operating activity and shall be performed constantly.

7. *Increase of anti-terrorist and anti-sabotage protection level of the Company electric grid facilities.*

Improvement of the safety system (including but not limited to the automated safety management system) based on the principles of geographical distribution, security, reliability and efficiency of the Company security management system, the wholeness of integration and business processes.

8. *Measures aimed at the decrease in electricity losses using extra tariff funding sources (including energy service agreements)*

Efficiency improvement of the power grid complex through the implementation of measures aimed at reducing technological electric power losses in the process of its transmission taking into account measures on the terms of energy service agreements.

Since 12/10/2013 the Company Board of Directors have been regularly considering and approving the lists of relevant projects of the Company in the field of energy conservation and improvement of energy efficiency that are feasible on the terms of the concluded energy service agreements.

9. Measures aimed at centralization and automation of the treasury function

Updating of reporting forms and reference books "1C: Enterprise" used during preparation of templates for uploading information into automated information system of registration of treasury operations in order to organize information exchange with the unified IT system of Unified Treasury of PJSC ROSSETI.

10. Improvement of internal control and risk management system, development of internal audit function.

The purpose of implementation of internal control and risk management system, development of internal audit function is to improve business processes of the Company. The assessment of the revealed risks is regularly updated, measures aimed at their management are implemented, information on the functioning of the risk management system, on the performance of the Company risk management activities is considered by the Company management bodies.

The Plan of Measures Aimed at Development and Improvement of Internal Control and Risk Management Systems of Kubanenergo PJSC for 2016–2018 has been approved and is being implemented.

Efficiency of the Internal Control and Risk Management Systems is assessed. The results of the assessment are submitted to the Board of Directors (with preliminary consideration by the Audit Committee of the Board of Directors).

11. The Company strategy in the sphere of information technology, automation and telecommunications for the period up to 2016.

The main role of information technologies is to implement the key business objectives of the Company, such as ensuring reliable and uninterrupted electric power supply, improving customer service quality, ensuring customer satisfaction. Process automation development ensures more efficient functioning of the power grid complex.

The Company introduces new projects, develops existing ones and maintains already completed projects in terms of information technologies in accordance with the Strategy in the field of information technology and telecommunications of the Company approved by Decision of the Board of Directors of Kubanenergo PJSC on 6/20/2013 (Minutes No. 138/2012 of 6/22/2012). The implementation of the priority area is an operating activity. In case of economic feasibility, additional investments in the informatization and automation of business processes should be made.

12. Construction and operation of fiber-optic communication lines (FOCL)

Design and construction of FOCL are performed within the framework of the implementation of the Company investment program titles. The Company area of activity of "Construction and operation of fiber-optic communication lines" has lost its relevance as the Company separate priority area of activity.

Corporate network of data transfer as well as dispatch and technological communication channels in the direction of a dispatch center of Teuchezhsky PGA of Krasnodar Electric Grids branch of the Company are organized using these FOCL in accordance with modern requirements.

13. Consolidation of electric grid assets

The purpose of the consolidation of electric grid assets is the increase of necessary gross proceeds in the customer basin

of PJSC Kubanenergo and reduction of the number of territorial grid companies.

The objective is the acquisition of grid assets non-influenceable by the Company and the provision of efficient use of power grid property transferred to the possession, released on loan or by other means of the consolidation of power grid property.

The Company is interested in creation of the unified center of responsibility for high-quality and reliable energy supply to customers, elimination of "fragmentarity" of the grid in Krasnodar Krai and the Republic of Adygea.

The main difficulties of the implementation of the Electric Grid Assets Consolidation Program are failure to achieve a consent of facility owners to participate in consolidation and lack of a source for measure funding.

14. Certification of equipment, materials and systems at the Company facilities

In order to organize the work on certification of equipment, materials and systems, in 2014 the Company issued the order that:

- brought into force the procedure and the methods of carrying out certification of equipment, materials and systems in the power grid complex,
- appointed a commission on admission of the Company equipment, materials and systems and approved its work regulations.

No applications for carrying out certification were submitted to the commission in 2016. In view of application of the unified technical policy in PJSC ROSSETI Group of Companies, certification of equipment, materials and systems used in the electric grid complex of Kubanenergo PJSC was carried out directly by PJSC ROSSETI.

15. Introduction of the major investment project construction management system

Availability of the specialized information project management system on the basis of Oracle Primavera (IPMS) ensured the complete implementation and management of the implementation of the Program of Olympic venues construction and development of Sochi as a mountain climate resort on reconstruction and construction of facilities of the distribution grid ensuring reliable power supply for Sochi during the 2014 Winter Olympic Games and the developing infrastructure of the city as a mountain climate resort. The area lost its relevance due to the completion of the Olympic construction in 2014. The information project management system on the basis of Oracle Primavera (IPMS) is not being used at the moment, because all its objectives have been accomplished.

16. Work in the area of labor protection

The purpose of work in the area of labor protection is to increase energy supply safety, including decrease in a total number of accidents, as well as unaccounted accidents.

The Company considers the preservation of life and health of its employees as a priority in relation to any other results of labor activity and, to this end, constantly takes measures to ensure safe working conditions in workplaces and to prevent occupational injuries and injuries of third parties at the Company facilities.

17. Decrease in specific investment costs by 30% against the level of 2012

The purpose of the priority is to improve efficiency of the electric grid complex, including: decrease in specific investment costs by 30% against the level of 2012.

The plan for reduction of investment costs in 2016 amounted RUB 327 mln, excluding VAT (22.5 %). Following the results of 2016, the actual reduction of investment costs amounted to RUB 381 mln, excluding VAT that is equal to 32%.

Decrease in operating expenses by 15% by 2017 taking into account inflation against the level of 2012 per maintenance unit of electrical equipment.

18. Decrease in operating expenses (costs) for at least 2–3% annually

The purpose of the priority is to improve efficiency of the electric grid complex, including: decrease in operating expenses by 2019 per 1 conventional unit 15% as compared to 2012.

The target levels of the decrease in operating expenses were approved by the Board of Directors of the Company.

In order to decrease expenses, from 2016 onwards the Company has been implementing the Operational Efficiency Increase and Expense Reduction Program for 2016–2020 on the

achievement of benefit due to the maintenance cost reduction per unit of the Company electrical equipment.

19. Capacity utilization increase

The purpose of the priority is to improve efficiency of the electric grid complex, including capacity utilization increase.

A natural growth of the electrical power system capacity consumed for 2016 amounted to 5.4%, besides, connection of new customers leads to additional increase in total capacity utilization of power stations of Kubanenergo PJSC.

In general, investments in Kubanenergo PJSC promote reliability enhancement, industry performance improvement, and decrease in electric power losses.

Alongside with that, the growth of investments leads to higher prices of electric grid services if the exploited capacities remain unloaded. In this regard, the purpose of the electric grid complex regulation is to ensure high load of re-exploited capacities.

Implementation of the priority areas of activities shall allow Kubanenergo PJSC to become one of the leaders of the industry thanks to high efficiency of asset management, customer-oriented approach as well as the implementation of energy-efficient technologies and the improvement of technological processes.

Report on the Company development on priority areas of activity in 2016 is provided in Appendix 5.

Development Prospects of the Company Electric Grid Facilities

The main objective of Company prospective development is modernization and expansion of its electrical power infrastructure that shall allow to eliminate the existing deficiency of power capacities and strengthen a basis for a sustainable long-term development.

Acting within Decree of the Government of the Russian Federation No. 823 of October 17, 2009 “On Schemes and Programs of Electricity Industry Prospective Development”, in 2016 Kubanenergo PJSC was directly involved in the development of the Schemes and the Programs of Electricity Industry Prospective Development in Krasnodar Krai and the Republic of Adygea for 2017–2021 and the Schemes and the Programs of Electricity Industry Prospective Development in the Republic of Adygea for 2017–2021 (the “Charts and the Programs”).

In the reporting year, upon the request of Kubanenergo PJSC, Institute ENERGOSETPROEKT JSC elaborated the Comprehensive Program of Development of Electric Grids of 35 kV and above in the territory of Krasnodar Krai and the Republic of Adygea for 2017–2021.

These documents are synchronized with the long-term investment program of PJSC FGC UES that manages the Unified National (All-Russian) Electric Grid, and correspond to the key parameters of the long-term investment program of Kubanenergo PJSC for 2016–2020.

The Scheme and the Program of Electricity Industry Prospective Development in Krasnodar Krai for 2017–2021 are approved by Executive Order of the Head of Administration (Governor) of Krasnodar Krai No. 293–r of 9/2/2016.

The Scheme and the Program of Electricity Industry Prospective Development in the Republic of Adygea for 2017–2021 is approved by Order of the Ministry of Economic Development and Trade of the Republic of Adygea No. 135–rg of 8/8/2016.

According to the Schemes and the Programs, the Company shall pay a special attention to the development of the most problematic South-Western and Central power districts of Kuban electrical power system that need improvement of electrical power infrastructure.

The priority areas in the sphere of technological connection shall also be as follows:

- development of Temryuksky District, including energy supply of electric loadings of the investment project of the national importance named “Construction of Transport Transition through the Strait of Kerch”,
- construction of Lago-naki ski tourist resort;

elimination of power deficiency in the large industrial and inhabited centers of the Krai: Krasnodar, Novorossiysk, Tuapse.

Implementation of the development plan of the Company

In order to enhance financial stability and operating efficiency of the Company, the Board of Directors of PJSC ROSSETI approved the Development Plan for Kubanenergo PJSC for 2016–2020 (Minutes No. 232) on 6/9/2016.

The Development Plan of the Company implies the following measures to be taken:

- - those aimed at the increase of internal efficiency;
- - those that are necessary to lend support from Krasnodar Krai and the Republic of Adygea,
- - those that are necessary to lend support from the Ministry of Energy of the Russian Federation in cooperation with the Ministry of Economic Development of the Russian Federation and the Federal Antimonopoly Service of the Russian Federation;
- - those that are necessary for development of Kubanenergo PJSC on the part of PJSC ROSSETI.

All the measures planned in 2016 have been fully implemented.

Company Innovative Development

Innovative Development Program

The purpose of the Innovative Development Program of the Company (hereinafter referred to as “the Program”) is a transition to electric grids of a new technological mode with qualitatively new characteristics of reliability, efficiency, accessibility, manageability and customer centricity of the power grid complex.

The objectives of the Program are:

- achievement of the required levels of reliability, safety, quality, efficiency and accessibility of energy supply of customers by implementing new equipment, technologies and practices;
- enhancement of the Company customer-oriented approach by improving the existing ones and creating new services including high-tech ones;
- development, approbation and provision of conditions for serial implementation of innovative equipment and practices with account of comprehensive efficiency factors and on the basis of management principles of the life-cycle of objects and systems;
- improvement of the system of interaction with the subjects of the sectoral innovative ecosystem, i.e. small and medium-sized businesses, universities, research organizations, the leading domestic and foreign equipment manufacturers etc.;
- improvement of the innovation governance system and creation of the intellectual property management system;
- improvement of the Company operating efficiency on a new technological and methodological base;
- creation of personnel capacity with perspective competencies in order to ensure objectives of the Company innovative development;
- creation of conditions for the development of perspective scientific research, technological work;
- reduction of the negative impact of the power grid complex facilities on the environment.

In the reporting year the Company implemented the Program approved by the Board of Directors (Minutes No. 115/2011 of 7/29/2011 as amended on 6/18/2012, Minutes No. 137/2012).

In the reporting year the following measures on the key areas of the Company innovative development were taken:

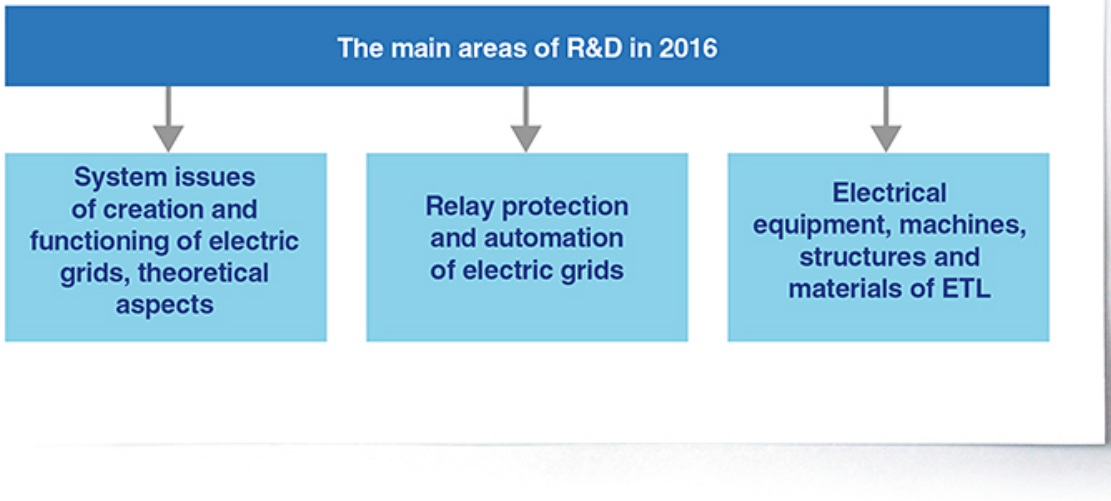
Key areas of the Innovative Development Program of the Company	Measures taken
A transition to digital substations of different voltage classes of 35–110 (220) kV	Design and survey works were performed within the project of "Reconstruction of 110 kV Tuapse-City SS" with the equipment with a digital substation system in terms of relay protection and automatic equipment, information collection and transmission system
A transition to digital active-adaptive grids with the distributed intelligent automation and management system	Completed: • "Implementation of intelligent electricity meters as part of the automated electric power metering system on problematic feeders at a voltage level of 0.4 kV (0.23 kV)" was introduced, 2,148 metering devices were mounted; • design and survey works on "Introduction of APCS on the basis of digital devices during the construction of 220 kV Port SS"; • five production samples of domestic electric charging stations for electric vehicles, FORA ECS-AC, were installed in Sochi Electric Grids branch.
A transition to comprehensive efficiency of business processes and automation of management systems	Completed: • development of the Production Assets Management System (PAMS) in terms of the expansion of its functional capability; • expansion of the functionality of the Personal Account of the Customer on the official website of Kubanenergo PJSC
The application of new technologies and materials in electric power industry	Completed: • design and survey works on facilities of the following pilot project: "Introduction of innovative 0.95 kV electric grid" and "Introduction of poles made of composite materials"; • introduction of innovative solutions: 6–10, 35 kV vacuum circuit breakers, local backup protection of power-transformer protection, equipment for partial discharge monitoring of power transformers insulation, digital devices of relay protection and automation supporting digital data exchange according to Protocol No. 61850 of the International Electrotechnical Commission, high-temperature wire; • design and survey works on the activity "Implementation of intelligent systems for monitoring and diagnostics of 110 kV CL performance in the process of construction of 2 Dzhemete-Pionerskaya CL of 110 kV with the installation of 110 kV cells at 110 kV Dzhemete SS"; • design and survey works involving the implementation of innovative solutions
Development of the system of elaboration and implementation of innovative production and technologies	The R&D program of the Company was performed in accordance with the concluded agreements
Development of human resources and partnership in the field of education	650 students received practical training in the Company, 38 employees of the Company were retrained in institutions of higher education

Performance indicators of the Company innovative activity in 2016, RUB thou excluding VAT:

Expenses for R&D carried out by third-party organizations, including by contractors (institutions of higher education, scientific organizations, innovative companies of small and medium-sized business)	11,166.5
of which with regard to projects implemented within	
• *technology platforms*	
• *Institutions of higher education*	2,200.0
• *scientific organizations*	8,966.5
Expenses for procurement of innovative production (technologies, solutions, goods, works, services determined by the approved Innovative Development Program of the Company)	396,090

R&D performance

One of the main areas of the Program is performance of R&D, i.e. the development of breakthrough technologies for the creation of fundamentally new technologies, methods, as well as application issues aimed at the improvement of the existing technologies and products.



In 2016 the Company carried out R&D:

R&D area	Measures taken in the reporting year
Development of a software package for address recommendations and low-cost methods of decrease in technological losses in grids of 6–10 kV of regional electric grids of OJSC Kubanenergo.	A software package for the calculation of low-cost measures aimed at the reduction of losses was received with a full set of operational documents, targeted measures aimed at the reduction of technological losses in the grid of 6–10 kV of Tbilisi RES of Ust-Labinsk Electric Grids branch were taken, the cost of the targeted measures was calculated. Following the results of positive pilot and field testing, the software package was recognized and implemented into commercial operation. On 6/16/2016 the scientific and technical committee of PJSC ROSSETI approved the results of the R&D. On 7/14/2016 a certificate on state registration of "Software package" computer program was obtained. In the fourth quarter of the reporting year the implementation (replication) of the software package began in all branches of Kubanenergo PJSC.
Creation of the unified, integrated, distributed and expanded diverse data account and storage system in the standardized form for accounting of maintenance and repair, actions of RPEA, RPEA settings with reference to the graphic scheme of equipment arrangement.	A software package allowing to integrate the existing services for relay protection and automation services in a standard format of storage and exchange (IEC 61970, IEC 61968), exclude information duplication and ensure integrity and relevance of this information with a full set of operational documents. In August 2016 acceptance tests were carried out. In November 2016 an application for state registration of the computer program was sent to the Federal Institute of Industrial Property. On 2/1/2017 the scientific and technical committee of PJSC ROSSETI considered the work results.
Development of reflectometric monitoring complex of OH transmission lines of 35–220 kV for the detection of damaged areas and icing deposits on them	Patent and information search, an analytical overview and technical and economic comparison of ETL monitoring methods for the purpose of ice and damaged area detection, analysis of metrological features of the objective, analysis of the structure and algorithms of the device performance taking into account the specifics of 35–220 kV OHL were completed. Functional and fundamental schemes of the device were developed. The software algorithm and listing were developed, the range of purchase products, materials and equipment was determined. 110 kV Gelendzhik SS of South-Western Electric Grids branch was determined as a place for installation, test performance, and pilot and field testing of the developed complex
Power line phase-differential protector with two-way supply with a function of distant backup of relay protection and commutation devices of the substations connected to branches	The comparative analysis of known technical solutions in the area of distant backup of relay protection and commutation devices of the substations connected to branches was carried out, a report on patent studies was obtained. An algorithm for the function of distant backup as part of line phase-differential protection and its requirements, functional schemes, a project of choice method of distant backup function settings were developed.

Technical policy and regulatory and technical provision

Key projects of the Company implemented in 2016 with the use of innovative, advanced, progressive technical solutions, technologies, materials and equipment:

Item No.	Branch	Facility	Key technical parameters
1	Slavyansk Electric Grids	110 kV Slavyanskaya-Krasnoarmeyskaya OHL	Introduction of 7 polyhedral poles including 4 pieces of UM110-2v-22.8 type and 3 pieces of UM110-2f+16.9 type.
2	Krasnodar Electric Grids	110/35/10 kV Adygeyskaya SS	Introduction of 3 three-pole gas-insulated circuit breakers of tank type VEB-110-2500/40-UHL1 in the amount of 3 pieces.
3	Krasnodar Electric Grids	110/35/10 kV Adygeyskaya SS	Introduction of a current transformer (gas-insulated, remote, with 600-300-150/5 windings, for the windings of the accuracy class of 0.2s/0.5/10P/10P/10P with porcelain insulation) of TOGF-110 UHL1 type in the amount of 3 pieces.
4	Krasnodar, Sochi, Slavyansk Electric Grids	110 kV Sochi SS 110 kV Bytkha SS 110 kV Vishnevaya SS 110 kV Rodnikovaya SS 110 kV Myasokombinat SS 110 kV Pavlovskaya SS 110 kV IKEA SS 110 kV HBK SS 110 kV Zaboyskaya SS	Microprocessor local backup protection of power-transformer protection of PUMA type for 110 kV 8 SS. Independent backup protection of transformer is intended for the protection of 110/10 kV power transformers equipped with a circuit breaker or a breaker on the power supply side in case of a short circuit at a substation (SS) with a failure of commutation devices or relay protection following the loss of operational current at the SS or due to other reasons.
5	Krasnodar Electric Grids	110 kV KCHPP-Kislorodny Zavod OHL	Replacement of uninsulated standard wire with heat-resistant wire of AST brand (AST-150/24 with 110 kV KCHPP-Kislorodny Zavod OHL, AST-120/19 110 kV “Opt to North-East SS from KCHPP-SPTA, OBD OHL” OHL). The presence of Al-Zr alloy in the composition of wire (current conductors) allows to use it for a long time at temperature of up to 210 °C, the acceptability of OHL performance in case of overloading rising the conductor temperatures for more than 90°C.
6	South-Western Electric Grids	35 kV Dzhemete-Pionerskaya OHL	Replacement of uninsulated standard wire with high-temperature wire of ASPTk brand. Increase of transmission capacity in the normal operation mode and increase of reliability in the emergency mode. Reduction of the impact of wind and glaze phenomena on the wires. The working temperature is +150–180 °C.

Regulatory and technical documents developed by the Company in the field of technical regulation for the reporting year:

No.	Number of the document	Technical regulation area	Name
1	IPB-IA-128-12	Fire safety	Instruction on fire safety measures in the laboratory of chromatographic and chemical analysis of the central isolation and surge protection service
2	IPB-IA-128-12	Fire safety	Instruction on fire safety measures in archives of the executive office of Kubanenergo PJSC
3	P 132-2016	Metrology and electric power quality	Regulation on the metrological service of Kubanenergo PJSC
4	M 010 -2016	Metrology and electric power quality	Calibration methodology. Measuring channels of the operation and information complex of the dispatch control automated system of Kubanenergo PJSC
5	–	Organization of emergency recovery works	The rules for prevention and elimination of the consequences of accidents at the electric grid facilities of Kubanenergo PJSC
6	–	Operative and	Regulation on the technological cooperation of the Kuban RDO branch of

		process management and situational management	UES SO JSC and Kubanenergo PJSC
7	PK 063 - 2016	Operative and process management and situational management	Procedure for the transmission of operational information on technological failures (accidents), deviations from normal operation modes in the performance of electric grid facilities, changes of the operational scheme condition and accidents at the facilities of the power grid complex of the UES of Russia in the operation areas of Kubanenergo PJSC
8	I 046 - 2016	Operative and process management and situational management	Instruction on the prevention of development and the elimination of failures in normal operation mode in the electrical annex of Kubanenergo PJSC
9	STO 00104604-ISM 032 - 2016	Power transmission lines	Organization of the operation of distribution grids of 0.4–10 kV of Kubanenergo PJSC
10	R 039 -2016	Design and construction	The regulation on formation, adjustment of the investment program and preparation of reporting on the implementation of the investment program, the increase of investment efficiency and expense reduction in Kubanenergo PJSC (new revision)
11	R 022 -2016	Design and construction	The regulation on the implementation of the investment projects of Kubanenergo PJSC regarding the performance of design and survey works, the execution of initial permit documentation and the performance of construction and installation works
12	P 090-2016	Design and construction	Provision on the investment activities of Kubanenergo PJSC (new revision)
13	R 031 -2016	The quality of customer service (including technological connection services)	The regulation on the performance of the function of consideration of customer applications in Kubanenergo PJSC
14	–	Safety	Minimum required organizational and technical requirements for the provision of information security of ATCS used for the functioning of the power grid complex
15	Pk 057 - 2016	Diagnostics and monitoring tools	The procedure for work performance on thermal imaging control of the electrical equipment of SS and OHL of 35–220 kV
16	M 009 2016	Test methods and diagnostics of the equipment of SS of 35 kV and above	The method of semi-quantitative determination of iron content in the distilled water intended for refill of rechargeable batteries
17	I 050 - 2016	Maintenance and repair	Instruction for pressure monitoring in sealed oil-filled bushings of 110 kV
18	–	Test methods and diagnostics of the equipment of SS of 35 kV and above	Methodological guidelines for the operation of high-voltage inputs with RIP insulation manufactured by “Massa”, “Izolyator” plant.
19	I 052 - 2016	Maintenance and repair	Instruction on the painting of the poles of overhead power lines
20	STO 00104604-ISM 037 - 2016	Maintenance and repair	Planning and performance of repair works, creation of the list of objects to include in the investment program part regarding technical re-equipment and renovation with account of the life cycle of products
21	R 109 2016	ETL	The regulation on the interaction of Kubanenergo PJSC with the tenant of the poles for the installation of communications provider equipment
22	M 008 2016	Energy management	Methods for calculating the cost of the energy audit of Kubanenergo PJSC
23	I 048 - 2016	Production control	Instruction determining the actions of employees in emergency cases in the process of the use of lifting constructions
24	R 116 2016	Emergency recovery works	The regulation for support of “Accident rate” software package in Kubanenergo PJSC
25	P 133 - 2016	Staff relations	The provision on planning and staffing Kubanenergo PJSC with production personnel for the use of constructed and reconstructed electric grid facilities
26	R 107 2016	Electricity metering and service	The regulation on approval of one-line connection schemes of customers’ electrical equipment to the electric grids of Kubanenergo PJSC for the

		development	purpose of registration (actualization) of supply point groups in the trading system of wholesale electricity and capacity market

All documents were executed by Kubanenergo PJSC without attracting contractors or incremental costs.

The Scientific and Technical Committee of Kubanenergo PJSC

In order to take reasonable decisions aimed at the increase of electric grid complex functioning reliability and efficiency, the Scientific and Technical Committee is created in the Company and regulation on it is approved (Order of OJSC Kubanenergo No. 522 of 6/16/2014).

Scientific and Technical Committee includes the heads of the structural units governed by Deputy Technical Director General, Chief Engineer, as well as chiefs of the following departments:

- Corporate and Technological ACS;
- Capital Construction;
- Economy;
- Prospective Development;
- Service Sales and Electric Power Accounting;
- Energy Saving and Enhancement of Energy Efficiency.

Deputy Technical Director (Company Chief Engineer) is the Chairman of the Scientific and Technical Committee.

17 meetings of the Company Scientific and Technical Committee were held in 2016, the following issues were considered:

- on introduction of scientific and technical documents (STD) from the STD register in the area of technical regulation of PJSC ROSSETI and S&A of PJSC ROsseti in the List of Power Grid STD valid in Kubanenergo PJSC.
- • on consideration of the "Comprehensive Development Program of Electric Grids of 35 kV and Above in the Territory of Krasnodar Krai and the Republic of Adygea for 2014–2019 with an Outlook Until 2024,
- on formation of R&D Program for 2017,
- on the implementation of innovative solutions under the project of "Reconstruction of 110 kV Tuapse-City SS",
- on the consideration of the results of R&D stage 3 in general in the area of "Development of a software package for address recommendations and low-cost methods of decrease in technological losses in grids of 6–10 kV of regional electric grids of Kubanenergo PJSC",
- on selection of APCS equipment supplier with regard to 220 kV Port SS,
- on consideration of R&D stage No. 1 in the area of "Power line phase-differential protector with two-way supply with a function of distant backup of relay protection and commutation devices of the substations connected to branches",
- on consideration of the selection of technical solution of the implementation of software and hardware complex of information collection and transmission system as a part of Tuapse-City digital substation,
- on the consideration of the results of R&D stage No. 1 in the area of "Development of reflectometric monitoring complex of OH transmission lines of 35–220 kV for the detection of damaged areas and icing deposits on them",
- on determination of the necessity and the completion procedure of R&D in the area of "Development and deployment of high-voltage current laser meter",
- on the consideration of the results of R&D stage No. 7 and R&D in general in the area of "Creation of the unified, integrated, distributive and expanded diverse data account and storage system in the standardized form for accounting of maintenance and repair, actions of RPEA with reference to the graphic scheme of equipment arrangement".

• on consideration of R&D stage No. 2 in the area of “Power line phase-differential protector with two-way supply with a function of distant backup of relay protection and commutation devices of the substations connected to branches”,

• on updating of the Register of Innovative Solutions of Kubanenergo PJSC,

• on the consideration of the results of R&D stage No. 2 in the area of “Development of reflectometric monitoring complex of OH transmission lines of 25–220 kV for the detection of damaged areas and icing deposits on them”,

• on the approval of equipment replacement within the project of “Organization of communication channels and data transmission with the use of “Krasnodar – Dinskaya – Korenovskaya, Tikhoretsk, Korenovskaya – Ust-Labinsk” FOCL,

• on updating of the Register of Innovative Solutions of Kubanenergo PJSC,

• on the selection of equipment manufacturer of software and hardware complex of information collection and transmission system for the substation of the project of “Reconstruction of 110 kV Tuapse-City SS”.