

Appendix 1. Additional Information by Section of the Annual Report

PRODUCTIVE CAPITAL | Operating Performance | Electricity Transmission

► Electricity Export and Import under Contracts of PJSC INTER RAO in 2011-2015

Actual export of electricity, million kWh						
Nº	Country	2011	2012	2013	2014	2015
1	Azerbaijan	44.242	55.770	57.422	53.054	54.848
2	Belarus	3,173.191	3,698.125	3,596.726	1,425.023	2,815.240
3	Georgia	447.554	517.049	460.547	627.271	511.001
4	South Ossetia	132.250	130.211	133.787	139.918	145.563
5	Kazakhstan	2,208.442	2,284.458	1,668.318	1,643.673	1,541.999
6	China	1,238.485	2,630.173	3,495.300	3,375.632	3,299.350
7	Latvia	0.000	0.000	0.000	0.000	0.000
8	Lithuania	5,543.127	4,780.170	3,567.969	3,215.539	2,994.516
9	Mongolia	263.428	392.750	413.595	390.332	284.450
10	Ukraine	22.357	81.795	38.609	177.993	2,461.972
11	Finland	9,635.536	3,793.845	4,107.179	2,995.008	3,383.435
TOTAL:		22,708.611	18,364.346	17,539.452	14,043.443	17,492.374

Actual Import of Electricity, million kWh						
Nº	Country	2011	2012	2013	2014	2015
1	Azerbaijan	391.551	240.757	128.607	134.169	108.365
2	Belarus	0.000	3.731	1.935	0.260	0.058
3	Georgia	588.576	369.438	370.608	160.078	169.575
4	South Ossetia	0.000	0.000	0.000	0.000	0.000
5	Kazakhstan	2,366.991	1,973.181	3,930.689	3,084.440	989.666
6	China	0.000	0.000	0.000	0.000	0.000
7	Latvia	0.000	0.000	0.000	0.000	0.000
8	Lithuania	0.000	0.000	99.253	43.161	114.561
9	Mongolia	21.424	21.006	23.291	30.368	54.178
10	Ukraine	55.763	0.093	6.400	0.000	3.756
11	Finland	0.000	0.000	2.758	0.234	23.400
TOTAL:		3,424.305	2,608.206	4,563.541	3,452.710	1,463.559

PRODUCTIVE CAPITAL | Operating Performance | Technological Connection

► **Key Indicators for Technological Connection**

		2013	2014	2015
Applications submitted	pcs	912	559	531
	MW	17,030.70	14,705.00	13,211.93
Applications accepted	pcs	398	311	305
	MW	9,253.31	9,252.69	8,610.86
Technical terms and conditions approved	pcs	497	260	270
	MW	16,005.60	7,787.66	5,089.00
Technical terms and conditions approved / reviewed by the Executive Office	pcs	175	81	75
	MW	12,145.00	4,901.89	2,421.90
Changes in the technical terms and conditions, approved	pcs	462	382	373
Contracts signed	pcs	642	224	206
	MW	15,054.40	4,796.27	4,608.86
Contracts completed (not including acts under phased technological connection)	pcs	298	273	245
	MW	3,793.00	5,536.95	8,185.00

PRODUCTIVE CAPITAL | Operating Performance | Investing activities

► **Basic parameters of key investment projects**

Project	Implementation timeframe		Commissioned in 2015	Design capacity	Financing in 2016-2020, RUB billion
	Start	Completion			
Development of electric grid infrastructure in the area of BAM and TransSib	2014	2024	0	4,124 MVA 4 215 km 1,334 MVar	102.37
Ensuring reliable operation of the Unified Energy System of Russia separately from the energy systems of the Baltic States (BRELL macroproject)	2015	2020	0	900 MVA 872.5 km 799.4 MVar	33.25
Guaranteed supply of generated electricity	2009	2019	699.67 km	125 MVA 865.4 km	27.54
Compensatory measures for separate operation of the Unified Energy System of Russia and the Integrated Power System of Ukraine	2015	2017	0	125 MVA 95.3 km	1.08
Improvement of the access to the Krasnodar Krai electric grid infrastructure	2015	2018	0	810 MVA 16 km	2.47

Project	Implementation timeframe		Commissioned in 2015	Design capacity	Financing in 2016-2020, RUB billion
	Start	Completion			
Development of the grid complex in the Republic of Saha (Yakutia)	2009	2024	0	794 MVA 1 062 km 200 MVar 200 MW	13.88
Development of the energy infrastructure for oil transportation (ESPO – I, II)	2012	2019	0	972 MVA 684,76 km 200 MVar	21.95
Measures to contain the fallout from the accident at the Sayano-Shushenskaya HPP	2010	2016	0	668 MVA Controlled shunt reactor (180+60) MVar Controlled shunt reactor (180+60) MVar 382,97 km	1.90

PRODUCTIVE CAPITAL | Operating Performance | Energy Saving and Energy Efficiency

► **Federal Grid's Pilot Projects on Energy Saving and Energy Efficiency**

Heat recovery

Pilot project of AT 1 heat recovery (Phase A) at 500/220/10 kV Nizhegorodskaya substation (MES Volga) for heating the substation control desk: the Company used a heat pump that made it possible to increase the saving of thermal resources for heating and reduce the consumption of electricity for heating of buildings and air cooling of transformers.

- Expected energy saving: 648,000 kWh / year
- Expected cash effect of energy saving: 1,166.78 RUB thousand

Optimising operation of the transformer cooling systems

Cooling control boxes AT-1 with frequency regulation were replaced at 500/220/10 kV Nizhegorodskaya substation (MES Volga). The replacement helped to increase the service life of the autotransformer, increase the efficiency of using the cooling system, and register, store and automatically transmit information about the cooling system parameters in the automatic management system.

- Calculated energy saving: 16,000 kWh / year

Using plasma lamps for lighting of the open switchgear

Twenty-four external floodlights at 500/220/10 kV Nizhegorodskaya substation (MES Volga) were replaced with plasma lights that have high quality of light flux, energy efficiency and long service life, and are environmentally friendly.

- Annual consumption of electricity used for lighting was reduced by 60,700 kWh / year

Using "light tubes" for lighting of office buildings

This technology for lighting of office buildings by outdoor sunlight was used when the administrative building of MES Volga in Samara was refurbished; 14 "light tubes" were installed on the roof of a six-floor building.

- Calculated energy saving: 2,999.5 kWh / year

Introduction of an automated heating station

Automated control of water consumption was put in place when the heating system in the administrative building of MES Volga in Samara was refurbished. This technology helps to reduce excess energy consumption for heating and hot water supply, extend the life service and reduce the time between repairs of heat networks and boiler room equipment, keep record of heat consumption and make surplus heat for periods of the lowest temperatures.

- Thermal energy saving: 230 Gcal
- Expected cash effect of thermal energy saving: 437.04 RUB thousand

Improving energy efficiency of the lighting installations

Work was completed on raising energy efficiency of lighting installations in the administrative building of the Upper Don PMES: the existing lamps and lighting fixtures were replaced with energy efficient LED light bulbs and automated management of internal lighting in the building was installed.

- Electricity saving: at least 19,300 kWh / year
- Operational costs reduced by at least 430,500 RUB/year

INTELLECTUAL CAPITAL | Innovative Development | Innovative Development Programme

Meeting Key Performance Indicators of Federal Grid's Innovative Development Programme in 2015

	2014 actual	2015 target	2015 actual	Assessment of whether or not the KPI has been met
Trend of reducing the cost of repair of a unit of grid equipment relative to the cost level of 2010, %	2.5	3	4	Met
Share of the spending on equipment purchased from domestic manufacturers in the total spending on equipment purchasing, %	44.5	40	75	Met
Share of electricity lost in the total volume of electricity transmitted through the grid, %	4.13	4.46	4.47	Not met
Number of company staff per 100 km of power transmission lines (number of people)	14.56	14	13.52	Met
Area of land in metropolitan areas freed from the grid infrastructure, ha	0	700	0	Not met
Share of undersupply of electricity to consumers in the total volume of electricity transmitted through UNEG, %	0.0002	0.0024	0.0002	Met
Number of exclusive rights documents (patents and registration certificates) obtained through the R&D work for the year	56	20	30	Met
Number of technologies and products developed and introduced into production through the R&D work, pcs.	9	2	4	Met
The share of R&D expenditure at FGC's own expense relative to the revenue (from electricity transmission through UNEG), %	0.25	1.1	0.29	Not met
Share of funds secured from external sources in the total financing, %	0	-	0	Not met

	2014 actual	2015 target	2015 actual	Assessment of whether or not the KPI has been met
Share of expenditures on R&D performed by universities relative to the total R&D expenditure, %	6,7	1,0	2,94	Met

HUMAN CAPITAL | Social Responsibility | Health and Safety

Additional health and safety initiatives implemented by Federal Grid Company in 2015:

- A behavior-based safety programme was implemented aimed at changing attitude of employees to conscious observance of safety practices, which resulted in improving employee safety behaviour in terms of work performance without violations of Safety Regulations
- Mobile video recorders are used aimed at recording the most dangerous actions of employees working on electrical installations
- The structure has been changed of Labour Protection Days aimed at improving the efficiency and prevention of violations similar to those committed in accidents
- Road Traffic Safety Months were organised
- Efficient operation of 50 permanent and 17 mobile health and safety offices was organised to promote safe working conditions and to train personnel to use safe practices, taking account of up-to-date requirements
- Work was continued on ensuring effective operation of stress-release rooms for operating employees of substations
- A review competition was conducted for the best organisation of work in the area of health and safety among the Company's MES and PMES branches: MES East and Primorskoe PMES were recognised to be the best for 2015
- A scheduled assessment of working conditions was performed at 5,935 workplaces

FINANCIAL CAPITAL | Management's Discussion and Analysis | Tariff Regulation

The following is a list of basic legislative acts regulating the tariffs for electricity transmission over UNEG:

- Federal Law "On electric energy" No. 35-FL dated March 26, 2003
- RF Government Resolution "On pricing in regulated areas (tariffs) in the electric energy sector" No. 1178 dated December 29, 2011
- RF Government Resolution "On defining the applicable indicators of reliability and quality of goods and services provided in establishing long-term tariffs" No. 1220 dated December 31, 2009
- RF Government Resolution "On ratification of the Rules for the Wholesale Electric Energy and Power Market and amendment of certain acts of the RF Government related to organising the functioning of the wholesale market for electric energy and power" No. 1172 dated December 27, 2010
- RF Government Resolution «On ratification of the Rules for non-discriminatory access to electricity transmission services and provision thereof, the Rules for non-discriminatory access to services

on operational dispatch management in electric power industry and provision thereof, the Rules for non-discriminatory access to services of wholesale market administrator and provision thereof, the Rules for technological connection of power receivers of electricity consumers, power generating facilities, and electric grid facilities owned by grid organisations and other entities, to electric grids» No. 861 dated 27 December 2004

- RF Government Resolution «On investment programmes of subjects of electricity industry» No. 977 dated 01 December 2009
- FTS (Federal Tariff Service) of Russia Decree “On ratification of the guidelines for calculation of tariffs for electricity transmission through the Unified

National (All-Russia) Electric Grid” No. 56-e/1 dated March 21, 2006

- FTS of Russia Decree “On ratification of the Guidelines on tariff regulation using the method of return on invested capital” No. 228-e dated March 30, 2012
- FTS of Russia Decree «On ratification of the Procedure for preparing consolidated balance forecast for electricity (capacity) generation and sales within the Unified Energy System of Russia by constituent units of the Russian Federation» No. 53-e/1 dated 12 April 2012

8

FINANCIAL CAPITAL | Borrowed Capital | Debt Portfolio

Information on outstanding bonds issued by PJSC FGC UES

Series	6	7	8	9
Type of securities	Non-convertible interest-bearing certificated bearer bonds with mandatory centralised custody and the option of early redemption at the request of the bondholders or at the discretion of the issuer			
Registration number	4-06-65018-D dated 05.11.2009	4-07-65018-D dated 05.11.2009	4-08-65018-D dated 05.11.2009	4-09-65018-D dated 05.11.2009
Issuance volume, RUB	10 billion	5 billion	10 billion	5 billion
Face value, RUB	1,000	1,000	1,000	1,000
Term	10 years	10 years	10 years	10 years
Issue date	28.09.2010	29.10.2010	28.09.2010	29.10.2010
Rate	8.25%	7.5%	8.25%	7.99%
Date of tender/maturity	- / 15.09.2020	- / 16.10.2020	- / 15.09.2020	24.10.2017 / 16.10.2020
Exchange	MICEX	MICEX	MICEX	MICEX
Quotation List	Second Level	Second Level	Second Level	Second Level
Lombard list of the Bank of Russia	Obligations are included	Obligations are included	Obligations are included	Obligations are included
Volume outstanding as of December 31, 2015, RUB	7.535 billion	1.76 billion	7.315 billion	5 billion

Series	10	11	12	13
Type of securities	Non-convertible interest-bearing certificated bearer bonds with mandatory centralised custody and the option of early redemption at the request of the bondholders or at the discretion of the issuer			
Registration number	4-10-65018-D dated 05.11.2009	4-11-65018-D dated 05.11.2009	4-12-65018-D dated 07.06.2011	4-13-65018-D dated 07.06.2011
Issuance volume, RUB	10 billion	10 billion	10 billion	10 billion
Face value, RUB	1,000	1,000	1,000	1,000
Term	10 years	10 years	7 years	10 years
Issue date	28.09.2010	29.10.2010	27.04.2012	05.07.2011
Rate	7.75%	7.99%	8.1%	8.5%
Date of tender/maturity	- / 15.09.2020	24.10.2017 / 16.10.2020	28.04.2016 / 19.04.2019	- / 22.06.2021
Exchange	MICEX	MICEX	MICEX	MICEX
Quotation List	Second Level	Second Level	Second Level	Second Level
Lombard list of the Bank of Russia	Obligations are included	Obligations are included	Obligations are included	Obligations are included
Volume outstanding as of December 31, 2015, RUB	0.0029 billion	10 billion	10 billion	10 billion

Series	15	18	19	21
Type of securities	Non-convertible interest-bearing certificated bearer bonds with mandatory centralised custody and the option of early redemption at the request of the bondholders or at the discretion of the issuer			
Registration number	4-15-65018-D dated 07.06.2011	4-18-65018-D dated 07.06.2011	4-19-65018-D dated 07.06.2011	4-21-65018-D dated 21.06.2012
Issuance volume, RUB	10 billion	15 billion	20 billion	10 billion
Face value, RUB	1,000	1,000	1,000	1,000
Term	12 years	12 years	12 years	15 years
Issue date	27.10.2011	12.12.2011	21.07.2011	24.10.2012
Rate	8.75%	8.5%	7.95%	8.75%
Date of tender/maturity	26.10.2018 / 12.10.2023	07.06.2019 / 27.11.2023	18.07.2018 / 06.07.2023	26.04.2017 / 06.10.2027
Exchange	MICEX	MICEX	MICEX	MICEX
Quotation List	Second Level	Second Level	Second Level	Second Level
Lombard list of the Bank of Russia	Obligations are included	Obligations are included	Obligations are included	Obligations are included
Volume outstanding as of December 31, 2015, RUB	0.312 billion	0.11 billion	20 billion	10 billion

9

Series	22	24	25
Type of securities	Non-convertible interest-bearing certificated bearer bonds with mandatory centralised custody and the option of early redemption at the request of the bondholders or at the discretion of the issuer		
Registration number	4-22-65018-D dated 21.06.2012	4-24-65018-D dated 21.06.2012	4-25-65018-D dated 21.06.2012
Issuance volume, RUB	10 billion	10 billion	15 billion
Face value, RUB	1,000	1,000	1,000
Term	15 years	15 years	15 years
Issue date	08.08.2012	25.01.2013	02.10.2012
Rate	1-2 coupons at 9%, coupons 2-20 calculated based on a formula: $K_i = (CPI - 100\%) + 2.5\%$	8%	8,6%
Date of tender/maturity	03.08.2022 / 21.07.2027	24.01.2020 / 07.01.2028	04.10.2016 / 14.09.2027
Exchange	MICEX	MICEX	MICEX
Quotation List	Second Level	Second Level	Second Level
Lombard list of the Bank of Russia	Obligations are included	Obligations are included	Obligations are included
Volume outstanding as of December 31, 2015, RUB	10 billion	10 billion	15 billion

Series	29	30	34	37	38
Type of securities	Non-convertible interest-bearing certificated bearer bonds with mandatory centralised custody and the option of early redemption at the request of the bondholders or at the discretion of the issuer				
Registration number	4-29-65018-D dated 21.06.2012	4-30-65018-D dated 14.11.2013	4-34-65018-D dated 14.11.2013	4-37-65018-D dated 14.11.2013	4-38-65018-D dated 14.11.2013
Issuance volume, RUB	20 billion	10 billion	15 billion	20 billion	20 billion
Face value, RUB	1,000	1,000	1,000	1,000	1,000
Term	35 years	35 years	35 years	35 years	35 years
Issue date	21.10.2013	13.12.2013	13.12.2013	06.05.2015	06.05.2015
Rate	1st coupon – 7.1%, coupons 2-132 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$	1st coupon – 7.1%, coupons 2-132 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$	1st coupon – 7.1%, coupons 2-132 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$	1st coupon – 7.1%, coupons 2-132 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$	1st coupon – 7.1%, coupons 2-132 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$
Date of tender/maturity	17.09.2046 / 07.09.2048	08.11.2046 / 30.10.2048	07.11.2047 / 30.10.2048	05.04.2045 / 23.03.2050	05.04.2045 / 23.03.2050
Exchange	MICEX	MICEX	MICEX	MICEX	MICEX
Unlisted securities register	Third Level	Third Level	Third Level	Third Level	Third Level
Volume outstanding as of December 31, 2015, RUB	20 billion	10 billion	14 billion	20 billion	20 billion

► Information on the outstanding infrastructure bonds issued by PJSC FGC UES

Series	23	26	27	28
Type of securities	Non-convertible interest-bearing certificated bearer bonds with mandatory centralised custody and the option of early redemption at the request of the bondholders or at the discretion of the issuer			
Registration number	4-23-65018-D dated 21.06.2012	4-26-65018-D dated 21.06.2012	4-27-65018-D dated 21.06.2012	4-28-65018-D dated 21.06.2012
Issuance volume, RUB	10 billion	15 billion	15 billion	20 billion
Face value, RUB	1,000	1,000	1,000	1,000
Term	35 years	35 years	35 years	35 years
Issue date	10.06.2013	13.08.2013	13.08.2013	10.06.2013
Rate	1st coupon – 8.4%, coupons 2-140 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$	1st coupon – 7.5%, coupons 2-136 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$	1st coupon – 7.5%, coupons 2-136 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$	1st coupon – 8.4%, coupons 2-140 calculated based on a formula: $K_i = (CPI - 100\%) + 1\%$
Date of tender/maturity	- / 27.04.2048	09.07.2047 / 30.06.2048	09.07.2047 / 30.06.2048	- / 27.04.2048
Exchange	MICEX	MICEX	MICEX	MICEX
Unlisted securities register	Third Level	Third Level	Third Level	Third Level
Volume outstanding as of December 31, 2015, RUB	10 billion	15 billion	11 billion	20 billion

FINANCIAL CAPITAL | Borrowed Capital | Credit Ratings

► **Information on Credit Ratings of Federal Grid for the period 2012-2015**

2012	2013
<p>23 November / Moody's</p> <p>Federal Grid's rating on the international scale downgraded from Baa2 to Baa3 (outlook: Stable) due to changes in the ownership structure relating to contribution to the share capital of a newly created company, JSC Rosseti, of the state-held share in Federal Grid; assessment of Federal Grid's financial position did not change.</p> <p>On the national scale the Company's rating was confirmed at the level of Aaa.ru.</p>	<p>25 October / Fitch Ratings</p> <p>Long-term default rating of Federal Grid was established at the level of BBB (outlook: Stable), on the national scale, at the level of AAA(rus).</p> <p>17 October / Standard & Poor's</p> <p>Long-term credit rating of Federal Grid on the international scale has been confirmed at BBB (outlook: Stable), on the national scale, at the level of ruAAA.</p> <p>Assessment of Federal Grid's credit by both agencies is based on similar factors. Long-term default BBB ratings are two notches higher than Federal Grid's stand-alone credit taking into account moderately strong connections with the Company's indirect shareholder, the Russian Federation (BBB / outlook: Stable) via JSC Rosseti. Assessment of Federal Grid's stand-alone credit at the level of BB+ as a positive factor takes into account the Company's position as the owner and monopoly operator of the national electricity transmission grid and its high level of profitability and liquidity. At the same time, the rating agencies point to the following factors as negatives: instability of the regulatory environment and financial risks that may relate to the implementation of a large-scale investment programme.</p>

2014	2015
<p>30 December / Standard & Poor's</p> <p>Federal Grid's ratings have been put under review for downgrade following the downgrade of the Russian Federation, which is due to a rapid decline in the country's flexibility in terms of its lending and monetary policy and with the impact of the weakening of the economy on the financial system.</p> <p>23 December / Moody's</p> <p>Federal Grid's ratings have been placed for review for downgrade due to similar actions in respect of Russia's sovereign rating.</p> <p>21 October / Moody's</p> <p>Long-term Federal Grid's rating under the global scale was confirmed at Baa3: by credit quality the company belongs to the investment category, which attests to the stability of its key areas of operations and high financial stability as macro-economic factors and market environment deteriorate.</p> <p>1 July / Moody's</p> <p>Rating agency Moody's confirmed Federal Grid's rating, Baa3 on the global scale and Aaa.ru on the national scale.</p> <p>28 April / Standard & Poor's</p> <p>Federal Grid's long-term rating in foreign currency has been decreased by one notch from BBB to BBB- (outlook: Negative) due to the decrease of the sovereign rating of the Russian Federation in foreign currency from BBB to BBB- (outlook: Negative), in the national currency, from BBB+ to BBB.</p> <p>3 April / Moody's</p> <p>Placed ratings of Federal Grid under review for downgrade due to the potential downgrade of the sovereign. 1 July 2014 the Company's credit rating on the global scale was confirmed at the previous level of Baa3 (so called investment category) with a negative outlook.</p> <p>27 March / Standard & Poor's</p> <p>26 March / Fitch Ratings</p> <p>Outlook for Federal Grid was changed from stable to negative, at the same time the Company's long-term ratings in foreign and national currencies – BBB – were confirmed.</p>	<p>26 February / Moody's</p> <p>Upon completion of the review period initiated by the rating agency due to deterioration in the macroeconomic and financial climate in Russia, Federal Grid Company's credit rating was affirmed at Ba1 (outlook: Negative).</p> <p>4 February / Standard & Poor's</p> <p>Following the change of the sovereign rating of the Russian Federation, Federal Grid was downgraded to BB+ (outlook: Negative).</p> <p>20 January / Moody's</p> <p>Federal Grid's credit rating downgraded from Baa3 (outlook: Negative) to Ba1 (under review for downgrade) due to the change of the sovereign rating of the Russian Federation.</p> <p>13 January / Fitch Ratings</p> <p>Due to the review of the sovereign rating of the Russian Federation, long-term Federal Grid default ratings in foreign and national currencies have been decreased from BBB to BBB- (outlook: Negative).</p>