



# 2012–2013 Sustainability Report by Generating Companies of Gazprom Energoholding

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## Report Profile

This represents the first sustainability report of Gazprom Group's Generating Companies (the "generating companies") for the calendar years 2012–2013.

### How did we prepare this sustainability report?

This sustainability report has been prepared in reference with the principles and guidance in the Global Reporting Initiative Guidelines (GRI 4), including the Electric Utility Sector Supplement, and is "in accordance" with the Core option in terms of disclosure.

Going forward, we plan to gradually expand the amount of information to be disclosed in our sustainability reports and move to the Comprehensive level. For this reason, this report provides wider disclosure on certain aspects than is required by the Core option.

For a full list of aspects covered by this report and the relevant page number in the report, please see the GRI Content Index section.

This sustainability report has undergone a "Materiality Matters" check by GRI experts. In preparing this report, we did not hold any public hearings involving representatives of relevant stakeholders, but we plan to consider this going forward.

### What scope and boundaries have we chosen for this sustainability report?

We have chosen a biennial reporting cycle, in line with the existing corporate practices of OAO Gazprom, our parent company. This report focuses mostly on the data for the last two calendar years (2012 and 2013). But since this is our first sustainability report, it also discloses our previous achievements that are most relevant to our stakeholders and to further sustainable development of our generating companies.

This report discusses the sustainable development of Gazprom Energoholding's three generating companies: OAO Mosenergo, OAO TGC-1<sup>1</sup>, and OAO OGK-2 [all listed on the Moscow Exchange]. The report does not disclose sustainability-related information about OAO MOEK's performance as the company only joined Gazprom Energoholding in late 2013. We intend to expand the scope of our next sustainability report by adding information on OAO MOEK's performance.

### What were the sources of information for this sustainability report?

We used management reports and most recent audited IFRS financial statements as of the date of this report as the key source of information on performance by the generating companies. The data reflecting the performance of our generating companies on aspects not covered by management reports or financial statements were obtained by sending information requests to relevant units of the companies in reference with G4 Sustainability Reporting Guidelines.

Unless indicated otherwise, data for Gazprom Energoholding provided in this report are consolidated data for the three companies, OAO Mosenergo, OAO TGC-1 and OAO OGK-2.

The report contains mid-term and long-term plans of Gazprom Energoholding's generating companies. Their implementation is subject to inherent risks and uncertainties including factors beyond the control of Gazprom Energoholding's generating companies.



Fig. 1. OOO Gazprom Energoholding, OAO Mosenergo, OAO OGK-2 headquarters, Moscow

G4-18  
G4-20  
G4-21  
G4-22  
G4-23  
G4-28  
G4-29  
G4-30  
G4-32  
G4-33

## CEO Statement

Dear colleagues and partners,  
Thank you for reading this first sustainability report by Gazprom Energoholding's generating companies.

### Why are sustainability issues important to our companies today?

- First of all, because uninterrupted electricity and heat supply to industrial consumers and households in many Russian regions, including such key cities as Moscow, Saint Petersburg and Sochi, relies on generating capacities of our companies. This means everyday responsibility for the quality and safety of lives and jobs of tens of millions of people!
- Given the high technological complexity and the scale of our operations, we have to look beyond simple economic efficiency. The unique character of our equipment requires us to continuously improve the safety of operations and provide continuous training and education to our employees.
- Another aspect of our development consists in increasing energy efficiency and minimising our environmental impact. To this end, we annually reduce the utilisation rates of worn-out or outdated assets replac-

ing them with new capacity. Many of our investment projects feature unique know-how solutions.

- We are committed to the openness and transparency of our business and maintain an open dialogue with all stakeholders, believing that the disclosure of non-financial information about our performance in the form of a sustainability report will become a good starting point for such dialogue.
- One of our objectives consists in increasing the shareholder value of our generating companies. Sustainability performance is an increasingly important driver of a business' market value, one that is considered by most major players in the stock market.

### How was Gazprom Energoholding established and what are its growth milestones?

In April 2007, OAO Gazprom's Board of Directors approved the Company's Power Generation Strategy. The Strategy defined growing OAO Gazprom's capitalisation by

improving ROE, optimising the fuel mix and achieving synergies through combining gas business and power generation as a key goal in developing the company's power generation business. To develop Gazprom Group's power generation business the Strategy provided for the acquisition of interests in generating companies, construction of new capacities and the establishment of a holding company to consolidate Gazprom Group's power generation assets. OOO Gazprom Energoholding [100% subsidiary of OAO Gazprom] became such a company, which started developing and introducing common corporate standards for management of the generating companies, OAO Mosenergo, OAO TGC-1 and OAO OGK-2.

Much has changed over these years. Significant private investments were attracted to the Russian power generation industry. The electricity market was liberalised, and a capacity market is in place. Since 2011, capacity has been marketed including under ca-

capacity supply agreements (CSA). CSA terms provide for investment in the construction of new generation facilities with guaranteed cost reimbursement as costs are reflected in the final price of capacity, resulting in an IRR rate of at least 14%. The heat supply segment is still regulated, although a phased reform process is underway. Power generation has become a rapidly growing, promising line of business for Gazprom Group.

### What are our strategic sustainability goals and priorities?

As reform continues in the Russian energy sector, with the initial goal of creating a competitive environment in the industry, we are encouraged to focus on improvements and modernisation. We seek to cut costs, optimise equipment utilisation and the fuel mix, reduce the operating hours of loss-making production facilities, and optimise the organisational structure. We are also aware of the immense responsibility of our generating companies to ensure uninterrupted heat and electricity supplies to industrial customers and households. For this reason, we are paying special attention to the reliability, safety and energy efficiency of our generating

companies in our efforts to make operations more competitive.

Today, our key strategic sustainability priorities include:

- 1) Ensuring reliable, safe and efficient operation of power plants and heat supply networks;
- 2) Increasing the operating efficiency and market capitalisation of Gazprom Energoholding's assets;
- 3) Improving our competitive edge in the utility market by unlocking our potential in operations and technology;
- 4) Building an optimal capacity mix by completing the implementation of CSA programmes, upgrading fixed assets and decommissioning inefficient facilities;
- 5) Optimising the fuel mix of generating companies, introducing energy saving technology solutions, developing and applying methods based on sustainable use of energy resources;
- 6) Ensuring sustainable use of natural resources, improving environmental safety standards, and minimising the environmental footprint of our power plants;
- 7) Becoming a preferred employer that attracts committed and highly efficient people;

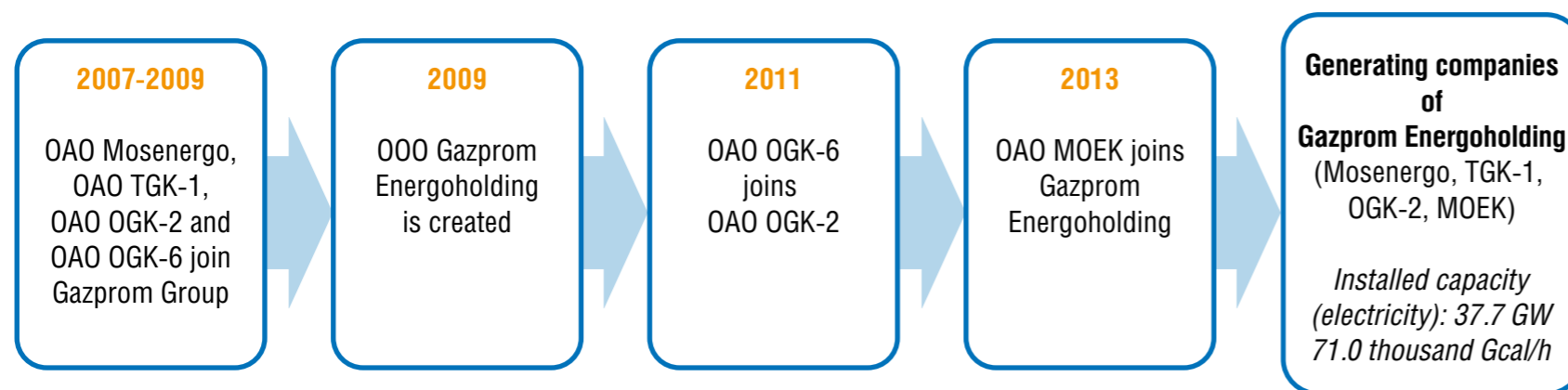


Fig. 2. Gazprom Energoholding's formation and growth

8) Contributing to the social development of the regions where our generating companies operate; and

9) Expanding the business of Gazprom Energoholding by acquiring strong assets and participating in attractive investment opportunities for construction of generating capacity in Russia (particularly in energy deficient regions) and abroad.

#### What we achieved in 2012–2013:

##### ● in increasing the efficiency of operating processes and management

The implementation of our cost optimisation programmes was our top priority in improving the performance of our generating companies in 2012–2013; They include: lean production<sup>2</sup>, shareholder value maximisation, personnel cost optimisation, and optimisation of upgrade and technical re-equipment initiatives. Cost reduction was not the only outcome of these measures. Most of them have had a comprehensive impact, providing the benefits of lower fuel consumption, higher energy efficiency, higher labour productivity and lower pollutant emissions.

The optimisation initiatives implemented by our generating companies in 2012–2013 resulted in lower fuel consumption. Our technical and organisational initiatives helped reduce unit fuel consumption by 1.0–2.5–g/kWh at Surgutskaya GRES-1, Troitskaya GRES, Novocherkasskaya GRES and Pskovskaya GRES,

even despite the underutilisation of these assets (i.e. under sub-optimal operating conditions). In 2012–2013, OAO Mosenergo cut its fuel consumption by more than 6.5% through growing the share of CCGT generation in the total electricity production from 14.8% to 18.9%.

Thanks to the previously implemented investment projects, in 2012–2013, we actively leveraged our technical capabilities to diversify our fuel mix towards cheaper types of fuel by switching some of our generating capacities both from coal to gas and from gas to coal, depending on the fuel price situation.

In 2013, the Company successfully completed the first stage of a project to introduce EIMSGC<sup>3</sup>, a specialised SAP-based business process management system. The project is being implemented as part of the general Information Technology Strategy of OAO Gazprom. This milestone means that we have brought the quality of economic planning, contracting and repair processes to a new level, with the processes becoming transparent, and decision-making faster. The project also lay the ground for further implementation of new, advanced business management tools.

##### ● implementation of investment projects

In 2012–2013, Gazprom Energoholding considerably strengthened its strategic leadership position in the Russian electricity sector.

Our generating companies are implementing a mandatory investment programme as part of our CSA effort in line with agreed timelines. Overall, Gazprom Energoholding committed to commission a total of 9 GW of generating capacity as a result of its construction and upgrade projects under the CSA programme (from 2007 to 2016). In 2007–2013, the aggregate new generating capacity commissioned across Gazprom Energoholding's companies exceeded 5 GW, including c. 2 GW commissioned in 2012 and 2013. By 2017, the Group expects to complete the remaining projects and thereby fully meet its construction obligations under CSA. In 2013, the total share of new capacity in the revenues of the Group's generating companies reached 15.9% (against 11.1% in 2012), and it keeps growing.

In 2012, we launched Russia's largest heat generation facility over the last 30 years: an 800 MW combined cycle gas turbine unit (CCGT-800 unit) at Kirishskaya GRES. It is currently the most powerful CCGT unit in Russia and already in 2013 it greatly contributed to improved economic and operating performance of OAO OGC-2. In 2013, Kirishskaya GRES recorded the largest power production growth across the Company: 24% year-on-year, with the significant part of this production attributable to the new, highly efficient CCGT-800. The Russian Government Prize in Science and Technology awarded to the project confirms the correctness of our deci-

sion to launch the project, acknowledging the project's innovative value and the importance of the resulting experience for the industry.

Adlerskaya TPP became a milestone in our investment activities in 2012–2013. The power plant's two CCGT units, 180 MW each, were completed in late 2012. The new capacity additions both addressed the electricity shortages in the areas around Sochi and ensured reliable heat and electricity supply to sports and infrastructure facilities at the 22nd Winter Olympics and the 11th Paralympic Winter Games.

In 2013, OAO TGC-1 completed its ambitious multi-year reconstruction of the Vuoksa HPP Cascade, the largest supplier of clean electricity on the Karelian Isthmus. Eight hydro power units were upgraded, while the Cascade's capacity was raised to 240 MW<sup>4</sup>, and the equipment's environmental safety was considerably improved.

In 2013, OAO TGC-1 already commissioned new CCGT units at Yuzhnaya, Pravoberezhnaya and Pervomayskaya CHPs in Saint Petersburg. They took the load off outdated and inefficient facilities and increased OAO TGC-1's revenue from capacity sales under CSA by 50% year-on-year.

##### ● reduction in the environmental impact of our operating facilities

2013 was the Year of Ecology at OAO Gazprom, and 2014 is the Year of Ecological Culture. Environmental protection has always been a priority for Gazprom Energoholding's

companies. We are guided by the principles of sustainable use of resources and are committed to minimising our environmental footprint.

Every year, we implement large-scale investment projects to replace outdated generating facilities with new high-performance equipment. Since the new and reconstructed facilities consume less fuel, the replacement of outdated facilities not only improves the economic performance of our generating companies but also greatly contributes to their improved environmental performance. As a result, in 2013 alone, the total amount of pollutant emissions per production unit at our power plants was down 8% year-on-year.

In addition, our generating companies implement special measures to reduce emissions and improve wastewater treatment. Among other things, they install low-toxicity boiler burners, roll-out the fuel staged combustion technology and a flue gas recirculation circuit, and construct new or reconstruct the existing treatment facilities. As a result of these measures, the amount of emissions by power plants of our companies were significantly below the Russian maximum levels throughout the reporting period (2012–2013).

##### ● labour and social relations

As Russia's competitive environment evolves in the electricity sector, the Company's ability to generate profit will greatly depend on the qualifications and skills of its

<sup>2</sup> The *Lean Production* programme has been run by OAO Mosenergo since 2009 and by OAO TGC-1 since 2011.

<sup>3</sup> The information management system for generating companies

<sup>4</sup> two hydropower units with a combined installed capacity of 60 MW were commissioned, providing for further capacity increases totaling 13.25 MW



Fig. 3. 2013 was the Year of Ecology at OAO Gazprom.

people.

In our labour practices, we pay specific attention to efficient motivation, training, professional development, occupational safety and promotion of Gazprom Group's common corporate culture across the generating companies. In 2012–2013, the key achievement in this area was the drafting of the Code of Corporate Ethics of OOO Gazprom Energoholding, which will serve as the basis for Codes of Corporate Ethics of OAO Mosenergo, OAO TGC-1, OAO OGK-2 and OAO MOEK.

In 2012–2013, our employees enrolled in various training, career enhancement and professional development programmes and won multiple industry contests held both by Gazprom Group and at the national level.

Gazprom Energoholding's generating

companies actively contribute to improvements in the quality of life in the regions where they operate through job creation and reliable supplies of heat and electricity to residential areas, social and industrial facilities, but also by consistently supporting sports, academic and cultural events and initiatives. Targeted aid to children, senior citizens and industry veterans is a priority in our social and charitable activities.

● **acquisition of assets**

In September 2013, Gazprom Energoholding was joined by Moscow Integrated Power Company (OAO MOEK). OAO MOEK is a major player in Moscow's heat supply market and the world's largest integrated company generating, transmitting, distributing, and retailing heat energy<sup>5</sup>, responsible for dispatch

schedules of heat supply facilities and networks, and connections to the heat supply system in Moscow and the Moscow Region. The company supplies heat to 13 million residents of Moscow.

As a result, Gazprom Energoholding became the largest company in the Russian market both in terms of installed electricity capacity (over 37 GW) and installed thermal capacity (c. 64 thousand Gcal). The acquisition of OAO MOEK is not only a strategic milestone in our business expansion plans but will also address the following issues:

- eliminate the risks of OAO Mosenergo losing its share of Moscow's heat supply market;
- increase Gazprom Group's share of Moscow's heat supply market and obtain the status of a "single heat supply company";
- improve capacity utilisation for OAO Mosenergo's power plants and reduce gas consumption in the region by taking the load off MOEK's boiler facilities and thus cutting back on pricier reserve fuel during peak loads.

For customers in Moscow and the Moscow Region this means higher reliability and efficiency of heat supplies due to improved coordination of operations across the Group's companies.

**What are our short-term (2014–2015) and mid-term (until 2016–2020) objectives?**

In the short term (2014–2015), our key objective is to strengthen the balance sheet of our companies by increasing the profitability of operations, streamlining costs and

improving production efficiency. In 2014–2015, OAO Mosenergo expects to complete the construction of CCGT-420 units at TPP-16 and TPP-20, and CCGT-220 unit at TPP-12. One of the priority objectives for OAO OGK-2 for these years is to complete the construction of, and launch, CSA facilities of Serovskaya, Troitskaya, Ryazanskaya and Novocherkasskaya GRESs<sup>6</sup>. The commissioning of these units will improve the Company's technical and economic performance.

To increase the operating reliability of equipment, reduce repair times and improve repair quality we reviewed our approach to repair management. In 2015, we are planning to shift to long-term contracting arrangements with contractors for maintenance and repair services for our power plants. The advantages of such contracting have already been tested during CCGT-800 equipment maintenance at Kirishskaya GRES.

We are working in parallel on establishing our own repair company within Gazprom Energoholding that will provide equipment maintenance services to all our generating companies including OAO Mosenergo, OAO TGC-1, OAO OGK-2 and OAO MOEK. This will reduce the dependence of our generating companies on third-party contractors and boost the quality of repair works, while cutting their costs.

We are currently developing a Plan of Heat Supply to Moscow until 2030, including individual plans for 2015, 2016, 2017, 2020 and 2025 subject to the development of Greater

Moscow. The Plan of Heat Supply is to become a basic document defining the strategy and the common technical policy for the future development of the city's heat supply systems, which will cover the existing and future heat loads in the most cost-efficient way and with a minimum environmental impact.

In the mid-term (2016–2020), we seek to increase profitability of our own generating assets and expand and streamline our business structure through efficient mergers and acquisitions and penetration of foreign markets.

Since early 2014, OAO OGK-2 has been building an additional element to its corporate structure – the Task Force for Strategic Initiatives that will cover a broad range of the Company's sustainability performance issues. They will include:

- the Company's economic impacts on society;
- long-term and mutually beneficial partnerships;
- R&D projects and the implementation of new technologies in heat and electricity generation;
- unlocking employees' professional and creative potential;
- protection of shareholders' interests
- compliance with the highest environmental standards; and
- improvements in the Company's profitability and market capitalisation; long-term growth of our business.

The first results of the Task Force for Strategic Initiatives at OAO OGK-2 will become visible as soon as 2014–2016, and

5 For heating and hot water supply

6 In November 2014 new PGU-420 unit was commissioned at Cherepovetskaya GRES.

we plan to discuss them in our second Sustainability Report. If the Task Force for Strategic Initiatives operating within OAO OGK-2 proves itself an efficient sustainability management tool, we will replicate this success across other companies of Gazprom Energoholding.

**What macroeconomic and political trends may influence our performance in the short (2014–2015) and medium (until 2016–2020) term?**

Over the last several years, Russia has enjoyed a steady economic growth. The country has a positive foreign trade balance, while its debt-to-GDP ratio is among the world's lowest. We are present in the most developed economic regions of the country, including Moscow and Saint Petersburg, where we capture sustained high demand for heat and electricity and enjoy a strong payment discipline both now and in the short to medium term. The electricity generation market, particularly in the European part of Russia, will come under pressure as new nuclear power generation capacity comes online, with the generation mix shifted towards nuclear power as a matter of priority.

We are constantly monitoring all risks caused by sanctions imposed on Russia by a number of countries due to the current international political situation and are devel-

oping potential safeguards to ensure further sustainable growth of our companies in the short and medium term. In particular, we estimate that a considerable portion of the equipment we purchase in Western Europe can be sourced in China, where equipment manufacturers provide similar products. Chinese equipment is already used by power plants of OAO Mosenergo. We take proactive steps to reduce the use of foreign power plant automation and control systems. Already today, most steam turbine units and the instrumentation and control systems of combined cycle gas turbine units at power plants of Gazprom Energoholding's generating companies are equipped with controllers by TECON Engineering, the leading Russian equipment manufacturer and provider of industrial automation engineering solutions that joined Gazprom Group in 2011.

Fuel is the key resource sourced by our generating companies to generate electricity and heat and changes in fuel prices are a material risk for our companies. We typically hedge this risk by entering into long-term contracts for the supply of key fuels and building sufficient stocks of reserve fuels taking guidance from the Russian Ministry of Energy. At the same time, unlike many other players in the market, we further mitigate this risk through high diversification of

our fuel mix, which includes gas, coal and fuel oil. Moreover, hydro generation accounts for more than 40% in OAO TGC-1's production.

The electricity and heat sectors of the energy industry are now in the active phase of reform. The reform is accompanied by regulatory changes within the industry, which carries significant risks around the forecasts for the industry's long-term development trends and is a curb on its investment appeal.

Non-payments are an industry-wide issue. The industry is developing targeted measures, supported by regulatory changes to minimise the issue (e.g. in 2013, the wholesale market introduced a system of financial guarantees, significantly improving the payment discipline among buyers). Nevertheless, our generating companies take vigorous efforts to address non-payments through customer channels and courts. Our non-payers include consumers in regions with historically low payment discipline such as the Republic of Tuva and the North Caucasus, and a number of industrial customers (in particular, in the chemical industry) that are legally exempted from any restrictions on electricity supply due to their specific operation profiles. As a result, they have been building up customer debts with virtually no consequences. In addition, Gazprom Energoholding and other energy companies have

pursued legal actions both in Russia and abroad on the debt by Energostream.

At the same time, our generating companies enjoy all sector-specific advantages inherent to the Russian electricity sector. They include a competitive environment, stable cash flows matching the steady demand with a high growth potential in the coming years, and guaranteed payback from investment projects under CSA. All this makes the sector attractive to a widely diversified range of high quality investors. Apart from Gazprom Group, companies operating in the Russian electricity sector include leading multi-nationals (Fortum, Enel and E.ON), major Russian companies (Onexim Group, Basic Element), and large state-owned companies.

The potential launch of an asset upgrade programme that offers returns on investment similar to those under CSA projects is among the most promising opportunities to drive the sector's future growth. We estimate our total upgrade requirements of generating capacities in Russia to be at least 20 GW until 2020. Capacity upgrade projects are on average c. 3,080% cheaper than CSA projects, while their lead times are 1.5–2 times shorter. Therefore, an upgrade programme would accelerate the capacity upgrade process and provide the benefit of much lower costs. At present, however, this

programme is only at the stage of discussions with regulators.

An increase in the share of co-generation, particularly in large cities, is expected to become an important trend in the development of the Russian electricity industry. All advantages of combined generation will come useful provided that the electricity and capacity markets are improved accordingly alongside the heat supply market, while the transition to Unified Heat Supply Organisations will provide a natural impetus for generating companies to replace their outdated capacity, resulting in higher profitability in the Russian heat generation market.

Chief Executive Officer  
OOO Gazprom Energoholding  
Denis V. Fedorov

## About Our Companies Business map

| Name and legal entity structure | Registered address   | Actual address   |
|---------------------------------|--|--|
| OAO Mosenergo                   | 119526, Moscow, Vernadskogo prospect, 101 bld. 3                         | 119526, Moscow, Vernadskogo prospect, 101 bld. 3   |
| OAO TGC-1                       | 198188, Russia, Saint Petersburg, Bronevaya Str. 6, Litera B             | 197198, Saint Petersburg, Dobroljubova pr., 16 Corp. 2, Litera A, Arena Hall Business Centre |
| OAO Murmanskaya CHP             | 183038, Murmansk, Shmidta Str., 14                                       | 183038, Murmansk, Shmidta Str., 14   |
| OAO OGK-2                       | Solnechnodolsk, Izobilnensky District, Stavropolsky Kraj, Russia, 356128 | 119526, Moscow, Vernadskogo prospect, 101 bld. 3   |
| OAO MOEK                        | 119048, Moscow, Yefremova Str., 10                                       | 119048, Moscow, Yefremova Str., 10   |

**OOO Gazprom Energoholding is a vertically integrated holding company (100% owned subsidiary of OAO Gazprom) that operates Gazprom Group's generating companies (OAO Mosenergo, OAO TGC-1, OAO OGK-2 and OAO MOEK) in line with unified corporate standards. The management processes are in line with the procedures set out by applicable laws, articles of association and other internal regulations of the companies. The key control mechanism to manage subsidiaries and affiliates is the participation of OOO Gazprom Energoholding's representatives in the Boards of Directors and Board Committees of relevant generating companies**

OOO Gazprom Energoholding's key areas of activity:

- Involvement in the development of Gazprom Group's strategy on the electricity sector; its implementation and control over its implementation by generating companies,
- Development and implementation of effective common strategies and policies across

generating companies (Technical Policy, Environmental Policy, HR Policy, etc.),

- Contributing to the vision of, and exercise of powers, by the controlling shareholder of Gazprom Group's generating companies.
- Development of a set of measures to improve the efficiency of the corporate governance system and cut costs of generating companies;

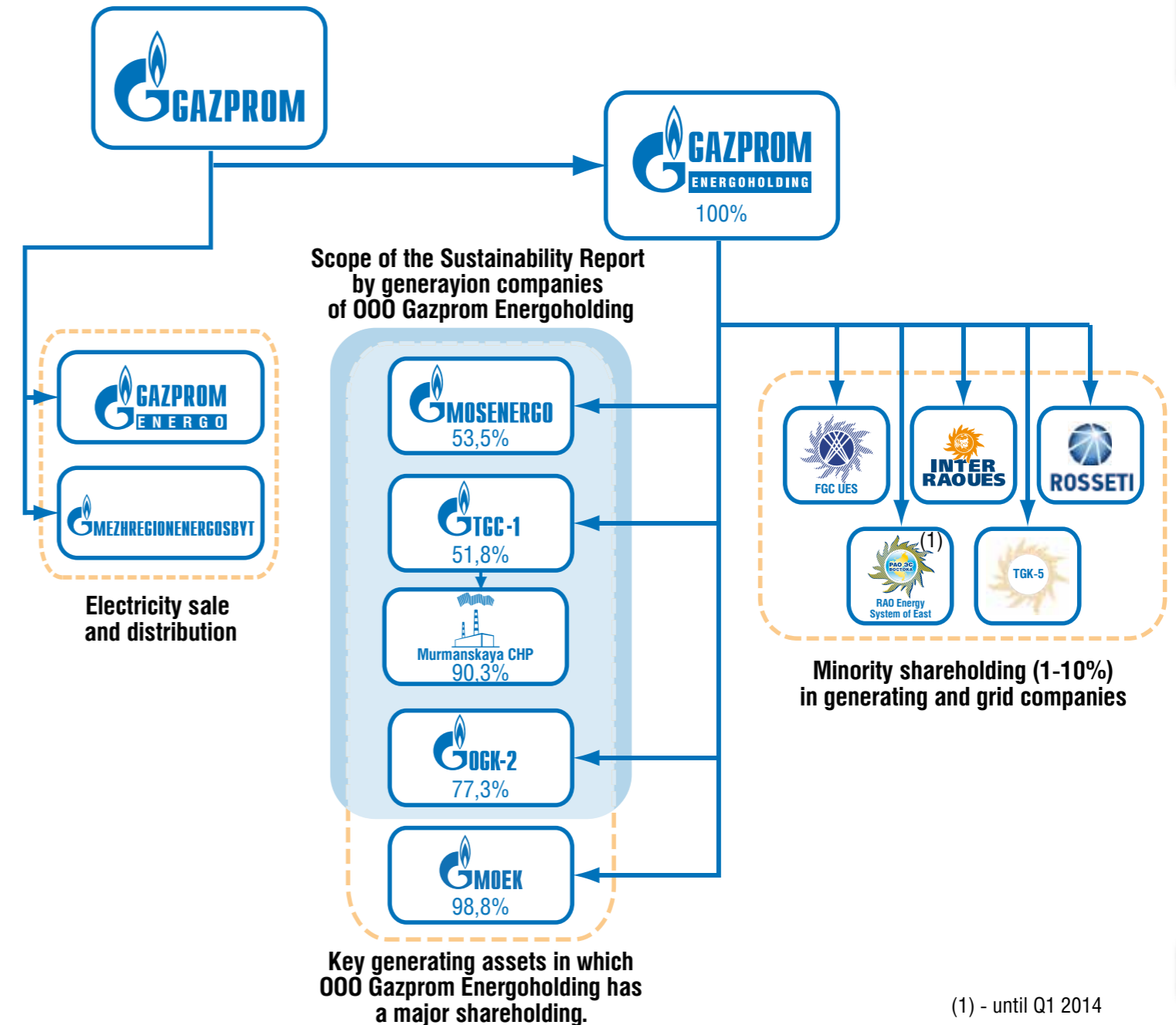


Fig. 4. Corporate organisational structure of Gazprom Energoholding

G4-3  
G4-5  
G4-7

G4-4

(1) - until Q1 2014



– Implementation of a common investment strategy and control over its implementation by generating companies.

- Projection of the Group’s single vision in government relations and relations with market regulators and major counterparties.

The core business of our generating companies (OAO Mosenergo, OAO TGC-1 and OAO OGK-2) is to produce and supply power and generation capacity to the wholesale market; and to generate and distribute heat to end consumers:

- OAO Mosenergo supplies 58% of electricity and c. 43% of heat consumed by the Moscow Metropolitan Area (Moscow and the Moscow Region). OAO Mosenergo’s share of Moscow’s heat supply market (excluding the newly added areas) is 69%. As at the end of 2013, OAO Mosenergo comprised 15 power plants with a combined installed electricity capacity of 12.3 thousand MW and a combined heat capacity of 35.1 thousand Gcal/h.

- As at the end of 2013, OAO TGC-1 included 55 power plants in Saint Petersburg, the Republic of Karelia, and the Leningrad and Murmansk Regions, with a combined installed electricity capacity of 7.2 thousand MW and a combined heat capacity of 14.2 thousand Gcal/h. Nineteen power plants of

the Company are located beyond the Arctic Circle. OAO TGC-1 has a unique structure of production assets, with hydro generation accounting for c. 40% of its combined installed capacity. OAO TGC-1 also operates a subsidiary generating company, OAO Murmanskaya CHP, which covers c. 70% of heat supply to Murmansk.

- OAO OGK-2 is Russia’s largest heat generation company. As of late 2013, its generation capacity comprised eleven power plant branches across Russia with a combined installed capacity of 18.0 GW, representing c. 7% of the total Russian electricity production.

- OAO MOEK: MOEK currently operates c. 15,700 km of heating grids (on a single-pipe basis) and 195 thermal power plants with a combined heat capacity of 16,692.6 Gcal/h, and eight electricity generation facilities with a combined electricity capacity of 193.3 MW and a combined heat capacity of 130.8 Gcal/h. The company services more than 70 thousand buildings, including 32.5 thousand residential buildings.

Our generating facilities are only present in Russia, which is also our key distribution market. Generation capacity locations and distribution markets of our generating companies across Russia:



Fig. 5. Sketch map of generating facilities of Gazprom Energoholding’s companies.



Fig. 6. Stavropolskaya GRES

G4-6  
G4-8  
G4-9

| Branches  | Distribution markets / Free power flow zones | Generating regions                    |
|---|--|---------------------------------------|
| <b>Mosenergo</b>  |  |                                       |
| P. G. Smidovich SPP-1<br>R. E. Klasson GRES-3<br>TPP-8<br>TPP-9<br>M. Ya. Ufayev TPP-11<br>TPP-12<br>TPP-16<br>TPP-17<br>TPP-20<br>TPP-21<br>TPP-22<br>TPP-23<br>TPP-25<br>TPP-26<br>TPP-27   | Moscow                                       | Moscow and Moscow Region              |
| <b>TGC-1</b>  |  |                                       |
| <b>Nevsky Branch:</b><br>Centralnaya CHP<br>Pravoberezhnaya CHP<br>Severnaya CHP<br>Pervomayskaya CHP<br>Avtovskaya CHP<br>Narvskaya HPP<br>Vyborgskaya CHP<br>Vasileostrovskaya CHP<br>Ladoga HPP Cascade<br>Yuzhnaya CHP<br>Dubrovskaya CHP<br>Vuoksa HPP Cascade | West   | Saint Petersburg and Leningrad Region |
| <b>Kolsky Branch</b><br>Apatitskaya CHP<br>Niva HPP Cascade<br>Serebryansky HPP Cascade<br>Tuloma HPP Cascade<br>Paz HPP Cascade  | Kolskaya                                     | Murmansk Region                       |
| <b>Karelsky Branch</b><br>Petrozavodskaya CHP<br>Kem HPP Cascade<br>Vyg HPP Cascade<br>Suna HPP Cascade   | West   | Republic of Karelia                   |

| Branches                  | Distribution markets / Free power flow zones | Generating regions    |
|---------------------------|--|-----------------------|
| <b>ОАО Мурманская СРР</b> | Murmansk                                     | Murmansk              |
| <b>ОГК-2</b>              |  |                       |
| Surgutskaya GRES-1        | Tyumen                                       | Tyumen Region         |
| Ryazanskaya GRES          | Centre                                       | Ryazan Region         |
| Cherepovetskaya GRES      |  | Vologda Region        |
| Stavropolskaya GRES       | Kuban  | Stavropol Territory   |
| Adlerskaya TPP            |  | Krasnodar Territory   |
| Kirishskaya GRES          | West   | Leningrad Region      |
| Pskovskaya GRES           |  | Pskov Region          |
| Troitskaya GRES           | Urals  | Chelyabinsk Region    |
| Serovskaya GRES           |  | Sverdlovsk Region     |
| Novocherkasskaya GRES     | Rostov                                       | Rostov Region         |
| Krasnoyarskaya GRES-2     | Siberia                                      | Krasnoyarsk Territory |

**Categories of consumers serviced by our companies in the Russian Federation:**

We mainly sell electricity and capacity in the Wholesale Electricity and Capacity Market (WECM), where buyers are large-scale consumers, energy distribution (energy supply) organisations and guaranteeing suppliers who buy electricity (capacity) to sell it to end consumers, including retail consumers. We divide heat energy consumers into the following groups:

- Industrial and equivalent consumers;
- Wholesale buyers / resellers;
- Public sector consumers;
- Utilities (including managing companies, condominiums / housing cooperatives);
- Other consumers.

### Exports



Fig. 7. Lesogorskaya HPP



Fig. 8. Svetogorskaya HPP



Fig. 9. Location of the Vuoksa HPP Cascade

Some power plants of OAO TGC-1 are uniquely located to export part of their electricity to Finland and Norway. Estonia is another possible destination. In 2012–2013, electricity was exported to Finland and Norway<sup>7</sup>:

| Supply destination | Supply source   | Electricity exports, million kWh |            |            |
|--------------------|---|----------------------------------|------------|------------|
|                    |   | 2012                             | 2013       | 2014F      |
| Finland            | <ul style="list-style-type: none"> <li>from the trunk lines of Svetogorskaya HPP of Vuoksa HPP Cascade in the Leningrad Region via the 110 kV Imatra-1 line;</li> <li>from the trunk lines of Kaitakoski HPP of Paz HPP Cascade in the Murmansk Region via the 110 kV L-82 line. The maximum supply capacity reaches 70 MW during spring floods.</li> </ul> | 580                              | 554        | 422        |
| Norway             | <ul style="list-style-type: none"> <li>from the trunk lines of Borisoglebskaya HPP of Paz HPP Cascade in the Murmansk Region via the 154 kV L-225 line. The maximum supply capacity may reach 56 MW, while the normal operating capacity is 28 MW.</li> </ul>   | 152                              | 138        | 178        |
| <b>Total</b>       |   | <b>732</b>                       | <b>692</b> | <b>600</b> |

We make wholesale exports under existing agreements with major electric utilities in Norway and Finland.

| List of export contracts | Counterparty          | Country | Date             |
|--------------------------|-----------------------|---------|------------------|
| 2013                     | Fortum Power and Heat | Finland | 20 December 2012 |
| 01 November 2012–2014    | RAO Nordic Oy*        | Norway  | 31 October 2012  |
| 01 November 2012–2014    | RAO Nordic Oy*        | Finland | 31 October 2012  |

Note: Contracts with Scaent Europower Ltd and RAO Nordic Oy were signed through Inter RAO UES acting as an agent on its own behalf, but for the account of OAO TGC-1 as a principal.

11 7 The exports were made via a single export agent: Inter RAO UES

## Company overview

In 2013, electricity output by our generating companies decreased year-on-year. On the one hand, the decline was in line with the industry-wide trends and was due to increased production at nuclear power plants. On the other hand, a number of factors inherent to our companies were at play here. They include the companies' policies, which are aimed at minimising utilisation of inefficient equipment; and higher outdoor air temperatures in Moscow (the area covered by OAO Mosenergo) and in the Russian Northwest (covered by OAO TGC-1) in Q4 2013 as compared to Q4 2012. OAO Mosenergo's output was also affected by a higher net power flow into the Moskva free power flow zone; production at OAO TGC-1's hydro power plants was down due to low water levels in Q3 and Q4 2013, and the output declines at OAO OGK-2 were due to the instructions of the System Operator and the overall decline in electricity consumption.

## Share capital structure

| Shareholders                       | As of 31 December 2012    |        | As of 31 December 2013    |        |
|------------------------------------|---------------------------|--------|---------------------------|--------|
|                                    | Number of shares          | %      | Number of shares          | %      |
| <b>Mosenergo</b>                   |                           |        |                           |        |
| OOO Gazprom Energoholding          | 21,265,104,840            | 53.50  | 21,265,104,840            | 53.50  |
| Moscow Department of City Property | 10,512,012,316            | 26.45  | 10,512,012,316            | 26.45  |
| JSC INTER RAO Capital              | 2,007,375,795             | 5.05   | 2,007,375,795             | 5.05   |
| Other                              | 5,964,866,749             | 15.00  | 5,964,866,749             | 15.00  |
| Total                              | 39,749,359,700            | 100.00 | 39,749,359,700            | 100.00 |
| <b>TGC-1</b>                       |                           |        |                           |        |
| OOO Gazprom Energoholding          | 1,996,046,978,490         | 51.79  | 1,996,046,978,490         | 51.79  |
| Fortum                             | 989,152,846,571           | 25.66  | 989,152,846,571           | 25.66  |
| Other                              | 869,141,591,510 and 3/7   | 22.55  | 869,141,591,510 and 3/7   | 22.55  |
| Total                              | 3,854,341,416,571 and 3/7 | 100.00 | 3,854,341,416,571 and 3/7 | 100.00 |
| <b>OGK-2</b>                       |                           |        |                           |        |
| OOO Tsentrenergoholding            | 29,970,066,506            | 50.52  | 81,081,177,617            | 73.42  |
| OOO Gazprom Energoholding          | 4,026,935,977             | 6.73   | 4,026,935,977             | 3.65   |
| JSC INTER RAO Capital              | 3,382,211,029             | 5.70   | 3,382,211,029             | 3.06   |
| Other                              | 21,948,713,448            | 37.05  | 21,950,836,247            | 19.87  |
| Total                              | 59,327,926,960            | 100.00 | 110,441,160,870           | 100.00 |

Debt to equity split, RUB bn<sup>9</sup>

|           | 2012 |        |       | 2013 |        |       |
|-----------|------|--------|-------|------|--------|-------|
|           | Debt | Equity | Total | Debt | Equity | Total |
| Mosenergo | 18.5 | 205.0  | 223.5 | 26.5 | 258.4  | 284.9 |
| TGC-1     | 36.7 | 90.8   | 127.5 | 32.7 | 97.1   | 129.8 |
| OGK-2     | 23.6 | 84.8   | 108.2 | 34.7 | 78.3   | 113.0 |

|   | 2012    | 2013    |
|---|---------|---------|
| <b>Headcount<sup>8</sup>, employees (at the year-end)</b> |         |         |
| Mosenergo   | 7,556   | 7,584   |
| TGC-1   | 7,857   | 7,648   |
| including Murmanskaya CHP                                 | 677     | 698     |
| OGK-2   | 9,857   | 9,040   |
| Total   | 25,270  | 24,272  |
| <b>Net sales, RUB mm</b>                                  |         |         |
| Mosenergo   | 157,139 | 156,663 |
| TGC-1   | 62,168  | 69,853  |
| including Murmanskaya CHP                                 | 4,103   | 4,628   |
| OGK-2   | 104,213 | 111,976 |
| Total   | 323,520 | 338,492 |
| <b>Electricity output, kWh bn</b>                         |         |         |
| Mosenergo   | 61.3    | 58.6    |
| TGC-1   | 30.4    | 29.3    |
| including Murmanskaya CHP                                 | 0.017   | 0.016   |
| OGK-2   | 75.2    | 70.7    |
| Total   | 166.9   | 158.6   |
| <b>Effective heat output, Gcal mm</b>                     |         |         |
| Mosenergo   | 68,7    | 67,6    |
| TGC-1   | 26,7    | 25,7    |
| including Murmanskaya CHP                                 | 2,1     | 2,0     |
| OGK-2   | 6,1     | 6,5     |
| Total   | 101,4   | 100,1   |
| <b>Total asset value, RUB bn</b>                          |         |         |
| Mosenergo   | 265.2   | 338.9   |
| TGC-1   | 147.9   | 150.6   |
| including Murmanskaya CHP                                 | 3.1     | 3.2     |
| OGK-2   | 149.9   | 167.3   |
| Total   | 563.0   | 656.8   |

8 Including employees working under civil law contracts and part-time employees.

9 Consolidated IFRS statements for OAO Mosenergo, OAO TGC-1 and OAO OGK-2

Installed capacity broken down by primary energy source and regulation mechanism

Pricing for the capacity offered by our companies is determined by the distribution mechanisms and the overall framework of contracts on the wholesale market:

● Free market pricing:

– Competitive Capacity Outtake (CCO) means trading in capacity at free (unregulated) prices determined through competitive bidding process.

● Regulated pricing:

– Capacity Supply Agreements (CSA) are contracts between suppliers and generating facilities that are included in the list of CSA generating facilities approved by the Russian Government. On the one hand, CSA secure suppliers' obligations to implement their approved investment programmes and, on the other, guarantee payments for capacity of new (upgraded) generating facilities. The capacity supply period under CSA is ten years. CSA capacity price is set in agreements based on the parameters approved by the relevant Resolution of the Russian Government,

– Sale and purchase agreements for capacity of generating facilities that supply capacity in a forced mode are signed by suppliers who have not been selected during the CCO procedure but are essential for normal operation of the power grid and heat supplies to retail consumers. Under the existing rules, such generating facilities get the status of a “forced generator” and supply capacity in a forced mode. The capacity of “forced generators” is allocated among buyers pro rata to their consumption peaks. Prices for capacity of generating facilities that supply capacity in a forced mode are set by the Federal Tariff Service of the Russian Federation.



Fig. 10. Pravoberezhnaya CHP. Nevsky Branch

10 Includes the capacities at TPP-17 and TPP-22 that can use coal as reserve and start-up fuel.

11 In the reporting period (2012–2013), Novocherkasskaya GRES, Cherepovetskaya GRES and Serovskaya GRES of OAO OGK-2 used both gas and coal for heat and electricity generation to adjust their fuel mixes to fluctuations in prices for these fuels.

Installed capacity of generating facilities (MW), with market sales regulated by various mechanisms, as of 31 December 2013 (broken down by primary energy source)

EU-1

| Primary energy source  | Capacity regulation mechanisms   |        |        |               |
|--|--|--------|--------|---------------|
|  | CSA  | CCO    | Forced | Total         |
| <b>Mosenergo</b>   |  |        |        |               |
| Gas <sup>10</sup>  | 1,745  | 10,164 | 232    | 12,141        |
| Other facilities (failed to pass the CCO procedure; did not apply for CCO; to be decommissioned, etc.) | –  | –      | –      | 121           |
| <b>Total</b>   |  |        |        | <b>12,262</b> |
| <b>TGC-1</b>   |  |        |        |               |
| Gas  | 1,280  | 2,581  | 74     | 3,935         |
| Coal   | –  | 266    | –      | 266           |
| Hydro  | 60   | 2,859  | –      | 2,919         |
| Fuel oil (Murmanskaya CHP)   | All electricity generated by Murmanskaya CHP is used to meet the local needs |        |        | 12            |
| Other facilities (failed to pass the CCO procedure; did not apply for CCO; to be decommissioned, etc.) | –  | –      | –      | 119           |
| <b>Total</b>   |  |        |        | <b>7,251</b>  |
| <b>OGK-2</b>   |  |        |        |               |
| Gas  | 9,498  | 1,571  | –      | 11,069        |
| Coal   | 3,874  | –      | –      | 3,874         |
| Combined <sup>11</sup>   | 2,602  | 300    | 150    | 3,052         |
| <b>Total</b>   |  |        |        | <b>17,995</b> |

## Electricity and heat output broken down by primary energy source

|                                | 2012                             |                            | 2013                             |                            |
|--------------------------------|----------------------------------|----------------------------|----------------------------------|----------------------------|
|                                | Electricity output, thousand MWh | Heat output, thousand Gcal | Electricity output, thousand MWh | Heat output, thousand Gcal |
| <b>Mosenergo</b>               |                                  |                            |                                  |                            |
| Gas                            | 54,030                           | 58,911                     | 51,224                           | 58,165                     |
| Combined fuels (gas/coal)      | 7,304                            | 9,516                      | 7,418                            | 9,431                      |
| Total                          | 61,334                           | 68,427                     | 58,642                           | 67,596                     |
| <b>TGC-1</b>                   |                                  |                            |                                  |                            |
| Gas                            | 16,485                           | 23,107                     | 16,924                           | 22,096                     |
| Coal                           | 388                              | 1,171                      | 373                              | 1,170                      |
| Hydro                          | 13,499                           | –                          | 11,990                           | –                          |
| Electricity                    | –                                | 3                          | –                                | 2                          |
| Fuel oil (OAO Murmanskaya CHP) | 17                               | 2,157                      | 16                               | 2,047                      |
| Total                          | 30,389                           | 26,438                     | 29,303                           | 25,315                     |
| <b>OGK-2</b>                   |                                  |                            |                                  |                            |
| Gas                            | 41,119                           | 4,302                      | 40,113                           | 4,889                      |
| Coal                           | 11,318                           | 1,509                      | 8,611                            | 1,422                      |
| Combined fuels (gas/coal)      | 22,765                           | 503                        | 21,935                           | 501                        |
| Total                          | 75,202                           | 6,314                      | 70,659                           | 6,812                      |

## Electricity sales broken down by regulating mechanism

| Electricity sales in the wholesale market broken down by regulating mechanism, thousand MWh | Mosenergo |        | TGC-1 <sup>12</sup> |        | OGK-2  |        |
|---|-----------|--------|---------------------|--------|--------|--------|
|   | 2012      | 2013   | 2012                | 2013   | 2012   | 2013   |
| Regulated contracts (RC)  | 12,012    | 11,439 | 5,176               | 5,421  | 12,547 | 12,974 |
| Day-ahead market (DAM)  | 51,129    | 48,499 | 25,903              | 24,775 | 62,413 | 57,394 |
| Balancing market (BM)   | 1,711     | 1,748  | 1,062               | 1,105  | 3,847  | 3,639  |
| Free bilateral contracts (FBC)  | 945       | 24     | 2,056               | 1,601  | –      | –      |
| Exports   | –         | –      | 732                 | 692    | –      | –      |
| Retail market <sup>13</sup>   | –         | –      | 89                  | 66     | 1,106  | 1,213  |
| Total   | 65,797    | 61,710 | 35,018              | 33,660 | 79,913 | 75,220 |

<sup>12</sup> Murmanskaya CHP does not sell electricity in the wholesale market.

<sup>13</sup> Under paragraph 32 of Resolution No. 1172 of 27 December 2010 by the Russian Government, generating companies (including generating companies of Gazprom Energoholding) must sell all electricity generated by them in the wholesale market. To sell electricity in the retail market we first purchase it in the wholesale market and then resell it to retail customers.

TPP-17 and TPP-22 of OAO Mosenergo, as well as Novochoerkasskaya GRES, Cherepovetskaya GRES and Serovskaya GRES of OAO OGK-2 can use both gas and coal for heat and electricity generation, enabling adjustments of the fuel mix to fluctuations in prices for these fuels. Given the above, for

OAO Mosenergo and OAO OGK-2, along with electricity and heat generation statistics for gas- and coal-fired plants, we keep similar records for facilities that use combined fuels.

EU-2

Our generating companies trade in electricity in the Russian wholesale market according to the rules set for the Wholesale Electricity and Capacity Market and approved by Resolution No. 1172 of 27 December 2010 by the Russian Government, and using the following regulating mechanisms:

- **Regulated price:** trading in electricity at regulated prices (tariffs) under Regulated Contracts (RC) for sale and purchase of electricity and capacity. RCs are used only for electricity supplies earmarked for delivery to retail and equivalent consumers, and to guaranteeing suppliers operating in North Caucasus republics, in the Republic of Tuva and in the Republic of Buryatia.

- **Unregulated price is determined within the following markets:**

- **Day-Ahead Market (DAM):** trading in electricity at free (unregulated) prices determined through competitive selection of price bids from suppliers one day before actual delivery.

- **Balancing Market (BM):** trading in electricity at free (unregulated) prices determined through competitive selection of price bids from suppliers and market players with regulated consumption at least one hour before the actual electricity supply so as to balance the electricity generation and consumption.

- **Free Bilateral Contracts (FBC):** trading in electricity at unregulated prices under free bilateral sale and purchase agreements

Pricing of thermal energy supplied by our companies, their cost structure, and the economic rationale for heat tariffs are guided by Federal Law No. 190-FZ On Heat Supply of 27 July 2010, the Heat Supply Pricing Framework, and the Rules for Regulation of Prices (Tariffs) in the Heat Supply Market as approved by Resolution No. 1075 On Pricing in the Heat Supply Market of 22 October 2012, Recommended Practices for Calculation of Regulated Prices (Tariffs) in the Heat Supply Market as approved by Order No. 760-e of 13 June 2013 of the Federal Tariff Service of Russia, and Chapter No. 25 of the Russian Tax Code.

Applicable laws provide for potential preferential heat tariffs for certain categories of consumers. The preferential heat tariffs are granted subject to the existence of relevant law in the relevant constituent region of the Russian Federation. The relevant law of the region of the Russian Federation specifies consumer groups entitled to the benefits, grounds for providing such benefits and the compensation procedure for lost income payable to heat supply companies.

We believe the most practical way would be to present the structure of effective heat output by our companies broken down by regulation type and consumer group.

| OHeat supply by regulation type / consumer group, thousand Gcal   | Mosenergo |                    | TGC-1                                |          |                 |         | OGK-2    |          |
|---|-----------|--------------------|--------------------------------------|----------|-----------------|---------|----------|----------|
|   | 2012      | 2013 <sup>14</sup> | Nevsky, Kolsky and Karelsky Branches |          | Murmanskaya CHP |         | 2012     | 2013     |
| Wholesale buyers / resellers (including heat suppliers)   | 16,420.0  | 46,860.9           | 6,204.5                              | 6,189.2  | –               | –       | 2,870.00 | 3,064.44 |
| Public sector consumers   | 7,342.4   | 3,907.4            | 1,824.5                              | 1,793.3  | 185.0           | 158.0   | 31.22    | 35.55    |
| Industrial and equivalent consumers   | 2,705.7   | 2,552.5            | 1,097.7                              | 1,017.0  | 63.0            | 45.0    | 2,224.78 | 2,659.96 |
| Utilities (including housing administrations (UZhKh), municipal housing administrations (GZhU), condominiums (TSZh) / housing cooperatives (ZhSK) | 25,932.0  | 4,266.1            | 11,721.0                             | 10,937.8 | 1,570.0         | 1,532.0 | 748.10   | 607.46   |
| Retail consumers (households)   | –         | –                  | –                                    | –        | –               | –       | 9.15     | 8.93     |
| Other consumers   | 13,420.6  | 9,883.2            | 3,468.5                              | 3,472.5  | 163.0           | 230.0   | 148.76   | 104.03   |
| Heat energy for loss compensation   | 2,842.0   | 108.3              | 1,947.0                              | 2,038.0  | 120.0           | 115.0   | –        | –        |
| Total   | 68,662.7  | 67,578.4           | 26,263.2                             | 25,447.8 | 2,101.0         | 2,080.0 | 6,032.01 | 6,480.37 |

## Corporate supply chain

Fuel is the key resource purchased by our companies to generate electricity and heat. According to data from IFRS statements, fuel costs also dominate the variable cost structure of each of our generating companies.

|           | 2012               |                        |  | 2013               |                        |  |
|-----------|--------------------|------------------------|--|--------------------|------------------------|--|
|           | Fuel costs, RUB mm | Variable costs, RUB mm | Share of fuel costs in variable costs, % | Fuel costs, RUB mm | Variable costs, RUB mm | Share of fuel costs in variable costs, % |
| Mosenergo | 83,339             | 115,189                | 72.3                                     | 89,443             | 108,411                | 82.5                                     |
| TGC-1     | 27,214             | 35,464                 | 76.7                                     | 29,537             | 38,585                 | 76.6                                     |
| OGK-2     | 62,108             | 71,305                 | 87.1                                     | 64,307             | 73,973                 | 86.9                                     |

The structure of fixed costs at our generating companies is dominated by personnel, repair and tax costs.

Diversification of supplies by our gener-

ating companies depends on fuel mix and the distances between their generating facilities. In particular, the high regional concentration of operating facilities and gas be-

ing the main fuel for most power plants of OAO Mosenergo and OAO TGC-1 provides for their low supply diversification.

In 2012–2013, OOO Gazprom mezhregiongaz Moscow was the key gas supplier to OAO Mosenergo's power plants. In December 2012, OAO Mosenergo also entered into an agreement for the supply of natural gas with OAO NOVATEK. The agreement provides for the supply of 9,050 mmcm of natural gas per year in 2013–2015. The total amount to be supplied by OAO NOVATEK over three years will thus exceed 27 bcm of natural gas, with the total amount of gas supplies in 2013–2015 expected to be c. 40 bcm. The gas supply agreement was signed with OAO NOVATEK as a result of our efforts to optimise fuel sourcing, since under the agreement, the gas is priced according to an order by the Federal Tariff Service of Russia that sets the minimum wholesale gas price for the region's industrial consumers.

OAO TGC-1 also announced an auction with a view to diversify its gas supplies, initiated by Fortum Power and Heat, its minority shareholder. However, no bids were submitted by alternative suppliers.

15 14 Changes in the breakdown of effective heat output by Mosenergo in 2013 are due to a changed delivery point.

Coal has the same share as gas in the fuel mix of OAO OGK-2, with the company's generating facilities spread across eleven Russian regions. For this reason, OAO OGK-2

actively cooperates with regional coal suppliers to optimise its fuel costs by sourcing gas and various types of coal to supply its power plants. Various branches of OAO OGK-2 are

supplied with coal from Kansko-Achinsky, Podmoskovny, Borodinsky, Pereyaslovsky, Rostovsky and Ekibastuzsky coal basins, mainly under long-term supply agreements.

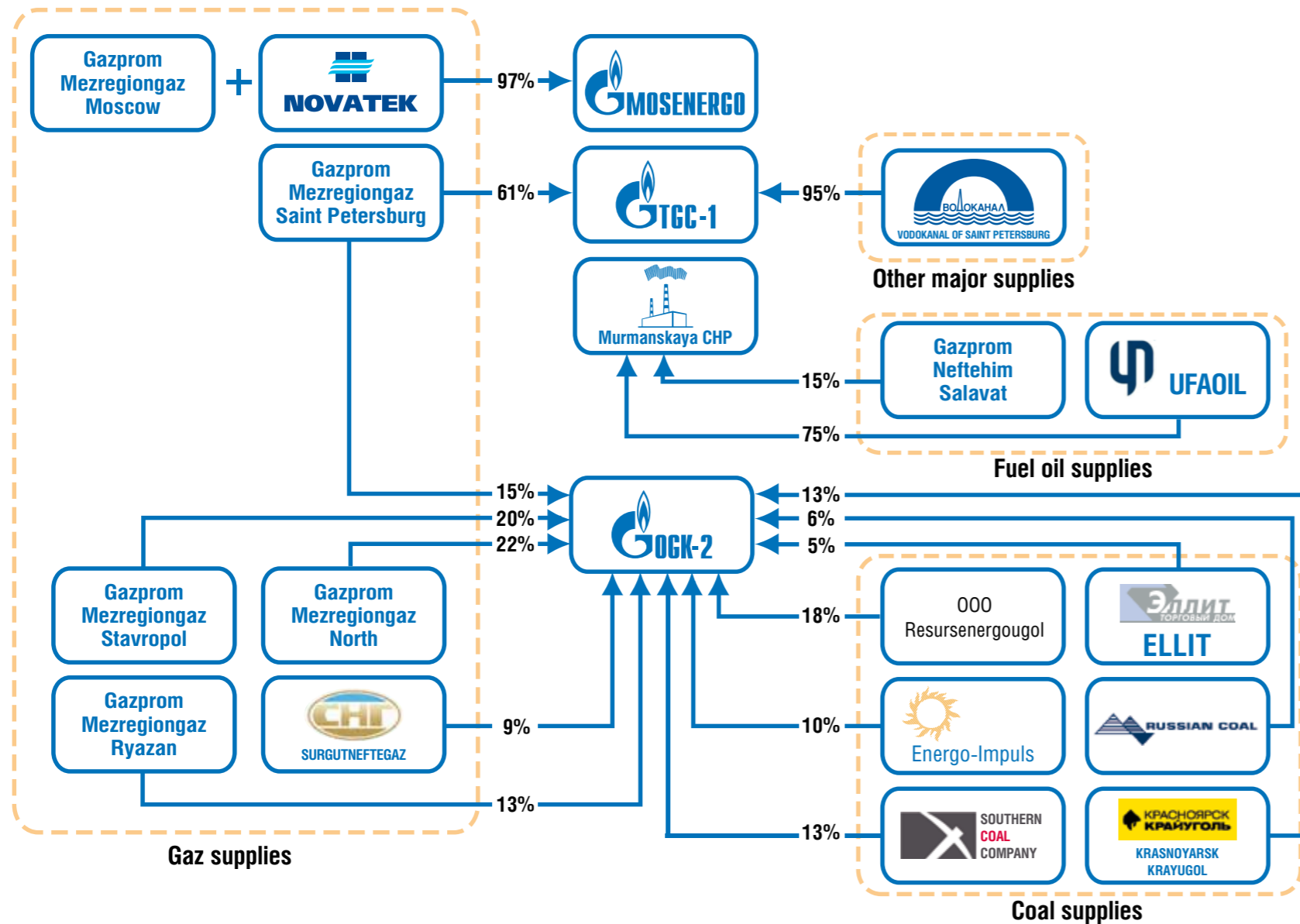


Fig. 11. Supply chain indicating major suppliers and their shares in the Company's relevant raw materials costs

In the supply chain diagram above, we have shown our major suppliers and their shares in the company's costs of purchasing relevant fuels: natural gas and coal.

For OAO TGC-1, we also indicated water withdrawal sources due to their noticeable share in the company's variable costs and the high level of supplies concentration. To

identify major suppliers we used a materiality threshold: the diagram shows suppliers whose share in the Company's costs for a given fuel exceeds 5%.



Fig. 12. Delivery of a new gas turbine to the CCGT-420 unit at TPP-20

We build our relations with all suppliers on the principles of responsible partnership, regardless of their share in the supply chain structure. We are committed to maintaining long-term, stable and mutually beneficial relations with our suppliers. To this end, all our companies continuously work to make supplies more stable and pricing more transparent. In selecting our suppliers and contractors we use mostly bidding procedures. However, we seek to make sure that our counterparties have an impeccable business reputation and ensure compliance with laws and corporate and business ethics.

Procurement practices of our companies are governed by the Procurement Regulations of OAO Mosenergo, OAO TGC-1 and OAO OGK-2. All our procurement procedures are compliant with the Constitution of the Russian Federation, the Civil Code of the Russian Federation, Federal Law No. 223-FZ On Procurement of Goods, Works and Services by Certain Types of Legal Entities of 18 July 2011, other federal laws or regulatory acts of the Russian Federation, as well as with the generally accepted principles of the global procurement practices, and other regulations, including local, that are binding on our companies.



### Business units included in the consolidated financial statements

The consolidated financial statements of OAO Mosenergo, OAO TGC-1 and OAO OGK-2 include data for the following subsidiaries:

| Subsidiary                                      | Interest         |                  |
|---|------------------|------------------|
|   | 31 December 2012 | 31 December 2013 |
| <b>Mosenergo</b>                                |                  |                  |
| OOO TSK Mosenergo                               | 100%             | 100%             |
| OOO Centralniy remontno-mekhanicheskiy zavod    | 100%             | 100%             |
| OOO OGK-Investprojekt                           | 51%              | 90.5%            |
| OOO Teploenergoremont                           |                  | 65%              |
| OOO Teploenergoremont-Moscow                    |                  | 72%              |
| OAO Remont inzhenernykh kommunikaciy            |                  | 65%              |
| OOO Energo-Kran                                 |                  | 51%              |
| Autonomous Non-Commercial Organisation KvaliTEK | –                | 65%              |
| <b>TGC-1</b>                                    |                  |                  |
| OAO Murmanskaya CHP                             | 90.34%           | 90.34%           |
| OAO St. Petersburg Heating Grid                 | 74.99%           | 74.99%           |
| <b>OGK-2</b>                                    |                  |                  |
| OOO OGK-Investprojekt                           | 49%              | –                |
| OOO OGK-2 Finance                               | 100%             | 100%             |
| OOO Center 112                                  | 100%             | 100%             |

The current sustainability report includes only some data for subsidiaries and affiliates of generating companies OAO Mosenergo, OAO TGC-1 and OAO OGK-2: all performance data, except financials, are provided net of subsidiaries. All financials are given as per consolidated IFRS financial statements. We did not include non-

financial information for subsidiaries of Gazprom Energoholding’s generating companies as we need to improve our internal corporate data collection systems. We, however, are planning to gradually cover all subsidiaries of OAO Mosenergo, OAO TGC-1 and OAO OGK-2 with non-financial reporting.

### Corporate governance structure

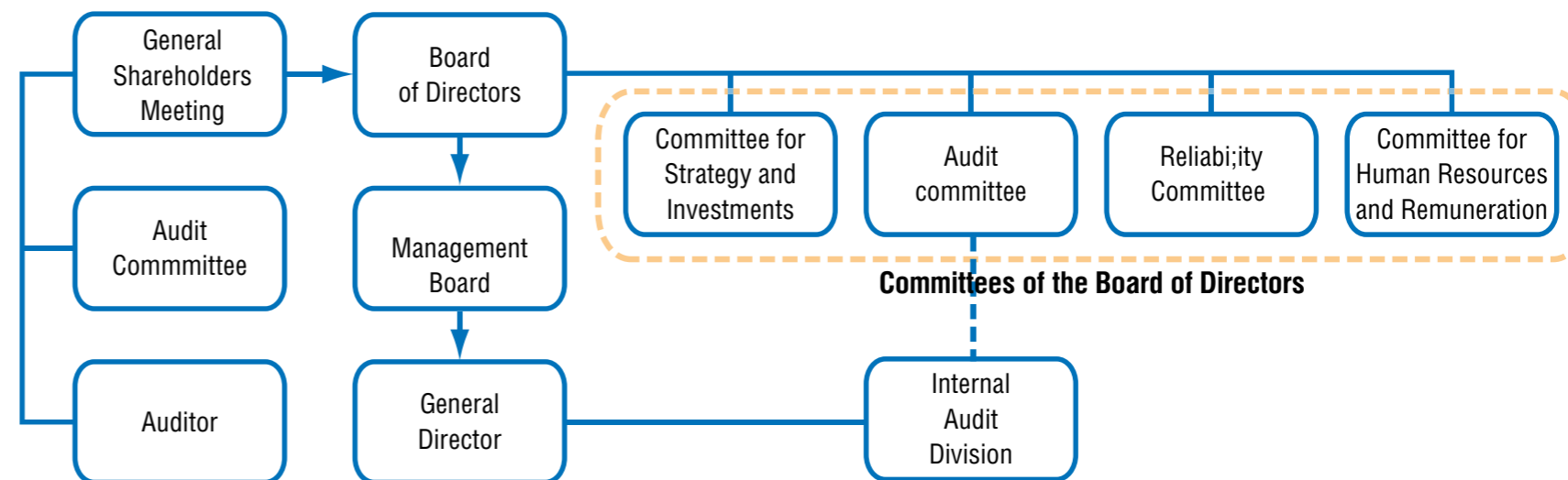


Fig. 13. Corporate governance structure in generating companies of Gazprom Energoholding Group

The corporate governance structure in our generating companies, OAO Mosenergo, OAO TGC-1 and OAO OGK-2 follows unified standards. Corporate governance bodies in each of our generating companies include the General Shareholders Meeting, Board of Directors, Management Board and General Director. The Management Board and General Director are executive bodies. The Board of Directors and the management run the companies in strict compliance with the principles of rigorous protection of shareholders’ and investors’ rights, transparency and information openness.

**The General Shareholders Meeting** is the supreme governance body in each generating company. It enables shareholders to obtain information on the company’s activities, its performance and plans, and exercise their rights to participate in the management of the company. The General Shareholders Meeting makes decisions on the most important matters related to the company’s operations within the competence of the General Shareholders Meeting. The Board of Directors, all executive bodies of the company and the Audit Commission are accountable to the General Shareholders Meeting.

The competence and procedures for convening, preparing, holding and summarising the results of the General Shareholders Meeting in each of our generating companies are compliant with the laws of the Russian Federation<sup>15</sup> and are set out in internal regulations of the companies, i.e. their Articles of

Association and the Regulations on the General Shareholders Meeting. The extraordinary General Shareholders Meeting may be convened by the company’s Board of Directors at its own discretion, or as requested by the Audit Commission, the auditor, or shareholders (shareholder) who own at least 10% of the voting shares in the company as of the date of such request. Items to the agenda of the extraordinary General Shareholders Meetings are proposed by the initiator of the Meeting. The existing procedure ensures equal treatment of all shareholders in our companies.

The General Shareholders Meeting of each of our companies elects an Audit Commission to oversee their respective financial and business operations, monitor compliance of the existing accounting and financial reporting procedures with the laws and corporate regulations, and help assure more efficient asset management.

**The Boards of Directors** in all of our generating companies provide the overall governance of the companies, make decisions on significant matters, oversee the implementation of decisions taken by the General Shareholders Meeting, and monitor the protection of rights and legitimate interests of the company according with statutory requirements. The competence of, and the procedures, for the Board of Directors in our companies are governed by internal regulations (Articles of Association and Regulations on the Board of Directors). The Board of Director is a collective governance body elected by the General Shareholders Meeting for a term until the next annual General Shareholders Meeting. The General Shareholders Meeting may decide to terminate the offices of all members of the Board of Directors before their terms expire. Persons elected to the Board of Directors may be re-elected any number of times. Candidates for the Board of Directors may be nominated by shareholders who own at least 2% of the voting shares in the company, or by the Board of Directors if the number of shareholders' nominees is insufficient.

#### *Committees of the Board*

The Board of Directors in any of our generating companies has four committees in place: Committee for Business Strategy and Investments; Audit Committee; Committee for Human Resources and Remuneration; and Reliability Committee. These Committees are advisory and deliberative bodies that ensure effective performance by the Board of Directors of its duties for the overall governance of the company's operations.

#### *Committee for Strategy and Investments:*

- determines overall strategic priorities and goals and general principles of corporate development,
- assesses the company's performance in the medium and longer term,
- reviews the progress in the implementation of approved strategic development programmes and projects,
- make adjustments to the adopted development strategy,
- determines the Key Performance Indicators (KPIs) subject to approval by the Board of Directors,
- monitors progress against strategic goals and Key Performance Indicators (KPI) approved by the Board of Directors,
- determines and improves the business planning and budgeting policies,
- provides financial planning and determines the credit and dividend policies,
- considers debt financing options, including placement of bonds and issuance of other debt securities,
- makes investment decisions, and
- organises reviews of investment projects and programmes submitted to the Board of Directors for consideration.

#### *Audit Committee:*

- prepares and submits recommendations on audit and internal control to the Board of Directors,
- evaluates and nominates candidates to act as the company's auditors,
- examines the auditor's report, and
- assesses the performance of internal control procedures and drafts proposals as to their improvement.

#### *Reliability Committee:*

- reviews strategic priorities, goals and principles of corporate development for compliance with comprehensive reliability requirements,
- reviews technical re-equipment and reconstruction programmes and generation facility repair plans and oversees their implementation,
- prepares proposals for the Committee for Human Resources and Remuneration for appraisal of the management's performance in ensuring compliance with comprehensive reliability requirements,
- assesses measures taken to address emergencies and major process breakdowns for completeness and adequacy,
- examines and approves the Technical Policy of the company and the annual report by the company's General Director on its implementation, and
- assesses the performance of the company's technical services in ensuring operating reliability of grid and generation equipment, facilities and other process infrastructures.

#### *Committee for Human Resources and Remuneration:*

- prepares and submits recommendations on HR, remuneration and social / employment policies of the company to the Board of Directors.

**Management Board** is a collective executive body that manages day-to-day operations in each of our generating companies. The Management Board reports to the General Shareholders Meeting and the

Board of Directors of the company. Members of the Management Board are elected and appointed by the Board of Directors. The Management Board is responsible for the implementation of the corporate goals, strategies and policies. The General Director acts as the Chairman of the company's Management Board. Activities of the Management Board are governed by the Articles of Association and the Regulations on the Management Board.

The Management Board develops forward-looking plans for key business lines of the company and submits them to the Board of Directors for consideration; examines reports by Deputy General Directors; makes decisions on transactions whose value exceeds 5% of the book value of the company's assets (except for transactions falling within the Board of Directors' mandate).

**The General Director** of each generating company presides over the Management Board and manages day-to-day operations of the company as a chief executive officer. He or she is appointed by the Board of Directors and reports to the Board of Directors and the General Shareholders Meeting.

**The Audit Committee** in each generating company is a collective body elected by the General Shareholders Meeting to monitor financial and business activities.

**The auditor's nomination** is approved by the General Shareholders Meeting of each generating company on an annual basis. The auditor is responsible for auditing financial and business performance of the company according with the legal regulations of the Russian Federation under a relevant agreement signed with the auditor.

**The corporate secretary** in OAO Mosenergo ensures the operation of mechanisms put in place for shareholders to exercise their rights and protect their interests, including compliance with the procedure for holding the General Shareholders Meeting; performs the functions of the Secretary of the General Meeting and the Board of Directors; makes arrangements for activities of governance and control bodies and interaction between the company's Board of Directors and its management; ensures storage, disclosure and provision of information about the company; takes measures to maintain corporate traditions and settle disputes and conflicts; and monitors that the company's interests are observed, including in relations with the Regulator and government authorities.

OAO TGC-1 and OAO OGK-2 have no permanent corporate secretary position in place. In OAO TGC-1, these functions are performed by the Secretary of the Board of Directors and the Head of Shareholder Relations, and in OAO OGK-2, they are assigned between OOO Gazprom Energoholding acting as the Secretary of the Board of Directors and its committees and the company's General Shareholders Meeting, and the Corporate and Property Relations Unit of the Corporate and Legal Matters Directorate.

Some functions may be partially delegated and responsibilities for addressing day-to-day economic, environmental and social issues may be re-distributed within the corporate structure of our generating companies.

| Economic  | Social <sup>16</sup>  | Environmental  |
|---|---|--|
| <b>Mosenergo</b>  |   |  |
| <ul style="list-style-type: none"> <li>• Marketing</li> <li>• Finance</li> <li>• Production</li> <li>• Budgeting management within Efficiency and Control Function</li> </ul> | <ul style="list-style-type: none"> <li>• Personnel Management</li> </ul>          | <ul style="list-style-type: none"> <li>• Ecological Service within the Occupational Health, Safety and Environment Division</li> <li>• Branches have officers responsible for all environmental protection areas.</li> </ul> |
| <b>TGC-1</b>  |   |  |
| <ul style="list-style-type: none"> <li>• Economic and Finance</li> </ul>  | <ul style="list-style-type: none"> <li>• Personnel Management</li> </ul>          | <ul style="list-style-type: none"> <li>• Ecological Service of the Power Plant Operation Department</li> <li>• Karelsky and Kolsky Branches have environmental sectors in place</li> </ul>                                   |
| <b>OGK-2</b>  |   |  |
| <ul style="list-style-type: none"> <li>• Economics Division</li> <li>• Financial Division</li> </ul>  | <ul style="list-style-type: none"> <li>• Personnel Management Division</li> </ul> | <ul style="list-style-type: none"> <li>• Operating Expenses Planning and Analysis Section</li> <li>• Branches also have in place Environmental Protection Sections</li> </ul>  |

### Corporate values, principles, standards and rules of conduct

OOO Gazprom Energoholding's Code of Corporate Ethics, approved on 15 November 2013 is the core document laying out values, principles, standards and rules of conduct within Gazprom Energoholding Group. Its provisions contain basic guidance for all subsidiaries and affiliates, including its generating companies OAO Mosenergo, OAO TGC-1, and OAO OGK-2. Currently, it serves as basis for developing and approving similar Codes of Corporate Ethics by our generating companies (as of the date of publication of this Report, OAO OGK-2 approved its Code of Corporate Ethics).

In accordance with OOO Gazprom Energoholding's Code of Corporate Ethics, our core values include:

- Professionalism, meaning a deep understanding of one's own job, completion of tasks in time and with proper quality, and continuous development of professional knowledge and skills
- Proactiveness, meaning proactive and independent approach taken by employees towards streamlining the production process
- Leanness, meaning a responsible and lean approach to using corporate assets, one's own and other employees' work time
- Mutual respect, meaning a team spirit in performing work, confidence, benevolence, and cooperation in addressing the tasks set
- Openness to dialogue, meaning open and fair information sharing and readiness to develop the best solution collectively

- Succession, meaning respect for the work and experience of older generations, interaction between the beginners and highly experienced workers, and professional training and mentoring
- Image, meaning the use of techniques and strategies to build a positive corporate image.

All employees of OOO Gazprom Energoholding and Gazprom Energoholding Group's generating companies are to read its Code of Corporate Ethics against signature. Orientations are arranged for newcomers.

The responsibility to ensure compliance with OOO Gazprom Energoholding's Code of Corporate Ethics is vested in the Corporate Ethics Commission that can be approached through memos, e-mail or hotline.

### Membership in organisations

#### Membership in Non-Profit Partnership Market Council

NP Market Council unites, on a membership basis, wholesale electricity and capacity sellers and buyers, wholesale electricity market players, operators of commercial and technological infrastructure in the wholesale market, as well as other organisations active in the electric energy sector in Russia. Our generating companies, OAO Mosenergo, OAO TGC-1, and OAO OGK-2, are also members of NP Market Council, as required by clause 1 of Article 35 of the Federal Law On Electric Energy Sector. All of them are on List B of the Chamber of Electric Power Sellers. This list includes partnership members that meet the following criteria:

- are electricity suppliers,
- sell, in the wholesale market, electricity generated using generating equipment that is beneficially owned or otherwise lawfully held by them,
- their sales in the wholesale electricity market, with natural gas used as the main fuel, exceeds sales of electricity generated using any other fuel.

In accordance with part 6 of clause 1 of Article 33 of the Federal Law On Electric Energy Sector, core objectives of NP Market Council, in the attainment of which we are actively involved, are to:

- support the operation of commercial market infrastructure,
- ensure efficient interconnection between the wholesale and retail markets,
- foster favourable conditions to attract investments in the electric energy sector,
- develop a common position among the wholesale and retail market players when drafting regulatory documents governing the electric energy sector,
- organise, based on self-regulation, an efficient system for wholesale and retail trade in electricity, capacity, and other goods and services that may be offered in the wholesale and retail markets to ensure energy security of the Russian Federation, unity of the economic space, freedom of economic activity and competition in the wholesale and retail markets, a balance of interests of electricity and power producers and buyers, and satisfaction of the public needs for reliable and sustainable electricity supply.

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19 16 Responsibility for social issues may be partially delegated to other business units.



**We believe that, although NP Market Council plays a key role in ensuring operation of the electricity market in Russia, its work could be organised in a more efficient way. First of all, its clear pitfalls include a disproportionate distribution of votes among its members, irrespectively of their available capacity and actual role in the market. In addition, many significant players of the Russian electricity and capacity market, including OOO Gazprom Energoholding, are represented at NP Market Council only through their subsidiary generating companies. As a result, a considerable portion of issues that could have been discussed within NP Market Council in an efficient and rational way are addressed through negotiations between major electricity and power producers and the Government of the Russian Federation, the Ministry of Energy and other key sectoral regulatory authorities. (Please confirm the wording of the management's position since it caused additional questions upon approval at Gazprom Energoholding).**

#### Membership in Noncommercial Partnership Council of Power Producers

NCP Council of Power Producers (hereinafter, the Partnership) unites Russian generating companies controls about 70% of generating capacity and over 90% of installed heat capacity at all power plants throughout the country. Apart from OOO Gazprom Energoholding, Partnership members include OAO Generating Company, OAO EuroSibEnergo., OAO Inter RAO Electric Power Plants, OAO Quadra, IES Holding, OAO LUKOIL, OOO Siberian Generating Company, OAO SIBECO, OAO TGC-2, OAO Fortum, OAO E.ON Russia, and OAO ENEL OGK-5.

The Partnership's strategic objective is to promote a favourable investment climate in the energy sector. To achieve this objective, the generating companies develop, within the Partnership forum, a common position on draft statutory regu-

lations, projects and programmes aimed to promote the development of the electric energy sector and on interaction with the public authorities at all levels, as well as with infrastructure, non-profit and public organisations in Russia and abroad. The Partnership promotes economic, production, research, and technical contacts between its member companies, represents and protects their interests and rights before legislative and executive authorities, and also provides information and analytical support to them.

However, it also has pitfalls, such as a disproportionate distribution of votes among its members, irrespectively of their available capacity and actual role in the market.

The Partnership is a member of advisory bodies, task forces, and expert councils which affect development and operation of the electric energy sector, including those

under the Government of the Russian Federation, State Duma of the Russian Federation, Ministry of Energy of Russia, Ministry of Industry and Trade of Russia, Ministry of Economic Development of Russia, Federal Antimonopoly Service of Russia, NP Market Council, Federal Tariff Service of Russia, Russian Union of Industrialists and Entrepreneurs, Chamber of Commerce and Industry of Russia, etc.

#### Membership in the Interregional Sectoral Association of Employers in the Energy Industry (RaPE)

The Interregional Sectoral Association of Employers in the Energy Industry (RaPE Association) represents the interests of sectoral employers in their relations with trade unions, public, and local authorities. The RaPE Association includes energy companies operating in 43 regions of Russia, such as OAO Integrated Energy Systems, OAO Fortum, OAO OGK-2, OAO TGC-1, OAO Mosen-ergo, OAO Tsentrenergoholding, OAO Quadra, OAO Irkutskenergo, and OAO Irkutsk Electric Grid Company.

Representation in the RaPE Association helps our generating companies effectively protect their interests in social and labour relations in the electric energy sector and be actively involved in improvement of legal framework.

In particular, representatives of employers in the energy sector, the Ministry of Energy of the Russian Federation, and Public Association All-Russian Electric Trade Union prepared and discussed the first professional standard in the electric

energy sector Thermal Power Plant Facilities Operator within the RaPE Association forum in 2013. It was recommended for approval by the Ministry of Labour and Social Protection of the Russian Federation on 25 March 2014, following a meeting of the Ministry's Expert Council on Professional Standards. This professional standard provides a framework to develop training and retraining programmes for shift supervisors at thermal power plants. Moreover, the RaPE Association will develop another 17 professional standards covering heat generation.

#### Membership in Non-Profit Partnership Scientific-Technical Council of the Unified Energy System (NP STC UES)

Although Gazprom Energoholding Group's generating companies are not members of NP STC UES as such, their interests there are represented by OAO Tsentrenergoholding, an affiliate of Gazprom Energoholding Group.

NP STC UES unites sectoral organisations to analyse the most important projects and goals in the electric energy sector and develop related solutions. Activities of NP STC UES include all stages of development of the national energy sector, including wartime and post-war recovery, hydropower development, DC and AC grid hydropower, establishment of the USSR united energy system, the post-war transition of thermal power generation to high and supercritical steam parameters, and, during the post-war years, implementation of modern gas turbine and steam and gas technologies, as well as many other matters.

The Partnership structure also includes the Scientific-Technical Board comprised of renowned scientists and highly qualified energy experts, including academicians, corresponding members of the Russian Academy of Sciences, candidates and doctors of sciences. At its meeting, the Scientific-Technical Board of NP STC UES reviews energy facility construction, re-equipment, and renovation projects; regulatory and technical documents; feasibility studies on deployment of new technologies, and other projects and work affecting Russia's united energy system, which require highly qualified expertise and support. Over the past decade, it addressed and developed recommendations for over 500 important projects in the electric energy sector.

Gazprom Energoholding Group's generating companies cooperate with the Partnership within innovative projects in the national energy sector, such as a project to develop a 520 MW and higher power CCGT and a project to modernise the GTE-160 turbines for the CCGT-450 unit.

## Material changes in the organisation during the reporting period

During the reporting period (2012–2013), no changes in terms of locations, types of activities, opening or dissolution of enterprises took place at Gazprom Energoholding Group's generating companies.

However, the following material changes in the size, organisational structure, supply chains, business expansion, equity structure, locations of major suppliers, and terms of supply contracts occurred during the said period.

### Generating capacity increase

In 2012, OAO OGK-2 commissioned a CCGT-800 unit at Kirishskaya GRES (tested

capacity is 775 MW, a 540 MW increase). On 1 February 2013, the Adlerskaya TPP was certified and started supplying capacity under a capacity supply agreement (installed capacity is 351 MW). Moreover, renovation of Unit No. 7 at Novocherkasskaya GRES was completed in 2012, with its installed capacity up by 36 MW.

Since January 2012, Pervomayskaya CHP at OAO TGC-1 started to supply capacity from two CCGT-180 units to the wholesale market, driving a 180 MW capacity increase. Also in 2012, the construction of CCGT-450 was completed successfully at the Pravoberezhnaya CHP site (tested ca-

capacity is 463 MW). In 2013, OAO TGC-1 commissioned two hydroelectric generating sets at the Vuoksa HPP Cascade (total installed capacity is 60 MW, a 13.25 MW increase). After commissioning of Hydro-power Unit No. 5 at the Lesogorskaya HPP, the complex renovation of the Vuoksa HPP Cascade was completed.

### Organisational structure

On 29 February 2012, the Board of Directors of OAO Mosenergo approved memberships of the Company in a number of entities. It was resolved to set up four 100% subsidiaries of OAO Mosenergo: OOO GRES-3 Elektrogorsk, OOO TPP-6 Orekhovo-Zuyevo, OOO TPP-17 Stupino, and OOO TPP-29 Elektrostal

OAO OGK-2 introduced a standard structure for branches with effect from 1 April 2013 and a new structure for its executive bodies with effect from 1 May 2013.

No significant changes occurred in the organisational structure of OAO TGC-1.

### Business expansion

Expansion of OAO Mosenergo's business in 2012–2013:

- To implement the project Construction of Unit No. 4 at Cherepovetskaya GRES Based on Steam and Gas Technology, Unit No. 4 (CCGT-420) of OAO Mosenergo purchased a 51% share in the authorised capital of OOO OGK – Invest Project (project inves-

tor) on 12 October 2012. Commissioning of Unit No. 4 at CCGT-420 of Cherepovetskaya GRES will increase the power plant's capacity and competitiveness in the electricity market, improve its performance by reducing its specific fuel consumption and increasing energy output, and will also diversify fuels used by the power plant. Later, OAO Mosenergo decided to increase its share in the authorised capital of OOO OGK – Invest Project to 95% (minutes of the meeting of the Board of Directors No. 8 dated 29 November 2012).

- On 30 October 2013, OAO Mosenergo acquired a 65% share in the authorised capital of OOO Teploenergoemont under a sale and purchase agreement.

- On 30 October 2013, OAO Mosenergo acquired a 72% share in the authorised capital of OOO Teploenergoemont Moscow under a sale and purchase agreement<sup>17</sup>.

In January 2013 OAO OGK-2 expanded its business by commissioning the Adlerskaya TPP that successfully supplied electricity and heat to the sports and tourist infrastructure facilities in Sochi. The commissioning of the Adlerskaya TPP increased electricity and heat generation by OAO OGK-2, resulting in expansion of its business. However, OAO OGK-2 is an operator (lessee), with OOO Gazprom Investproject being the owner (lessor) of the Adlerskaya TPP.

No significant business expansion took place at OAO TGC-1 in 2012–2013.



Fig. 14. Adlerskaya TPP



Fig. 15. Denis Fedorov, CEO of Gazprom Energoholding, takes part in the Olympic Torch Relay

21 17 As per the Resolution of the Board of Directors dated 7 November 2014, OAO Mosenergo will sell its share in the authorised capital of OOO Teploenergoemont Moscow.

OOO Gazprom Energoholding also contributed to the expansion of Gazprom Group's electric energy business in 2012–2013:

- In September 2013, OOO Gazprom Energoholding completed acquisition of 89.98% in OAO MOEK and the assets serving to the Moscow heat energy infrastructure and leased from the Government of Moscow by OAO MOEK. The tendered asset value was RUB 98.6 billion. Acquisition of shares and assets of OAO MOEK would give the Group synergies in reduction of fuel consumption by the Moscow heating system by redirecting loads from OAO MOEK's boilers to OAO Mosenergo's power plants and more efficient heating system management. OAO MOEK and OAO Mosenergo jointly account for 90% of heat energy generated and distributed in Moscow.



Fig. 16. TPP-21

#### Capital structure

To finance a large-scale investment programme, OAO OGK-2 arranged an additional issue of shares, completed on 26 April 2013. Within the additional issue, OAO OGK-2 placed 51.1 billion or 46.47% of additional shares, worth RUB 23 billion. As a result, the shares held by the shareholders in the authorised capital of OAO OGK-2 changed as follows:

- the share held by OOO Gazprom Energoholding (including through its subsidiary OAO Tsentrenergoholding) increased from 57.25% to 77.07%,
- the share held by ZAO Inter RAO Capital, decreased from 5.7% to 3.06%.

No significant changes occurred in the capital structure of OAO Mosenergo and OAO TGC-1.

#### Locations of major suppliers and terms of supply agreements

To streamline fuel sourcing, OAO Mosenergo entered into a natural gas supply agreement with OAO NOVATEK on 5 December 2012. The agreement provides for annual supply of 9,050 mmcm of gas to OAO Mosenergo's power plants in 2013–2015. The total amount to be supplied over three years will thus exceed 27 bcm. Under the agreement, the gas is priced according to an order by the Federal Tariff Service

of Russia that sets the minimum wholesale gas price for the region's industrial consumers. The estimated agreement price until 2015 does not exceed RUB 121 billion.

In 2013, Kirishskaya GRES, a branch of OAO OGK-2, acquired a valuable experience in maintaining CCGT-800 steam and gas equipment comprised of two SGT5-4000F gas turbines and two Sgen5-1000A generators. In March 2013, lengthy negotiations finally led to a long-term contract for maintenance of that equipment until 2025. It is an innovative unit comprising cutting-edge equipment including that of foreign manufacturers, which required

new flexible approaches to its maintenance and repair. The experience gained during contract execution and equipment maintenance provided a solid framework to make similar contracts at Cherepovetskaya GRES and Serovskaya GRES, branches of OAO OGK-2.

A key task in 2013 was to arrange maintenance of the Adlerskaya TPP, a cutting-edge steam and gas cycle power plant. The power plant is fitted with the most advanced equipment and consists of two autonomous CCGT-180 units, each comprising two gas turbines manufactured by Ansaldo Energia (Italy) and a steam turbine manufactured by OAO Kaluga Turbine Works (Russia).

Timely executed maintenance agreements and a number of operating decisions enabled reliable and seamless operation of the Adlerskaya TPP during the Winter Olympic and Paralympic Games and, thus, successful supply of electricity and heat to Sochi, sports and tourist facilities, and at the same time maintain warranties for the equipment at the Adlerskaya TPP.

No significant changes in terms of supply agreements or locations of major suppliers occurred at OAO TGC-1.

## Stakeholder Relations

### Key stakeholder groups



Fig. 17. Meeting during Gazprom Energoholding Investor and Analyst Day, Saint-Petersburg, May 2012

nesses of our companies into the following groups:

- Investment community (shareholders, investors, and analysts),
- Capital suppliers (lenders and rating agencies),
- Local communities (local population, civil society organisations and local authorities),
- Customers (wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers),
- Government of the Russian Federation and sectoral regulatory authorities and organisations, as well as ministries, agencies and regional executive authorities,
- Environmental organisations,
- Goods and service suppliers,
- Employees and trade unions.

Key principles we were guided by when determining these groups were:

- their shared interests and expectations from our companies,
- the nature of their impact on the achievement of our companies' strategic goals,
- tools that we use to interact with them.

Sustainability of generating companies directly depends on the quality of stakeholder relations. We strive to maintain open dialogue with all stakeholders, as we believe that our companies have influence on are influenced by them to the same extent. We believe that

responsibility, openness, and due respect for the interests of all stakeholders during the decision-making process are a prerequisite for efficient interaction between us.

We unite representatives of stakeholders that are most closely connected with busi-



Fig. 18. Meeting during Gazprom Power Generation Day, November 2012

Ways of stakeholder interaction

| Stakeholders and topics of interest   | Forms of interaction  | Frequency of interaction   |
|---|---|--|
| <b>Investment community (shareholders and investors)</b><br>Topics of interest:<br>• financial and performance indicators,<br>• investment programmes,<br>• dividend policy,<br>• shareholder value increase;<br>• production efficiency increase and cost reduction,<br>• business development strategy,<br>• M&A.           | General shareholders meetings of OAO Mosenergo, OAO TGC-1 and OAO OGK-2, where all most important matters related to the companies' businesses are discussed.   | Annual meetings of shareholders of OAO Mosenergo, OAO TGC-1 and OAO OGK-2 are held once a year. In addition, one extraordinary meeting of shareholders of OAO Mosenergo and two extraordinary meetings of shareholders of OAO TGC-1 were held in 2012–2013.  |
|   | The Boards of Directors and committees of the Boards of Directors of OAO Mosenergo, OAO TGC-1, and OAO OGK-2 as a forum for ongoing interaction with major represented shareholders in the form of consultations, search for compromises, and finding common grounds for the most topical issues, | On a regular basis subject to the established corporate procedures.  |
|   | Task forces on individual matters related to the Group's strategic development (M&A), involving representatives of minority shareholders.   | We have a practice of setting up ad hoc task forces involving minority shareholders to draft resolutions on such matters (e.g. merger of OAO OGK-2 and OAO OGK-6).   |
|   | Regular IR campaigns, including meetings between the management of OOO Gazprom Energoholding, OAO Mosenergo, OAO TGC-1 and OAO OGK-2 and representatives of shareholders, investors and analysts.   | On a regular basis, we hold annual:<br>• Gazprom Investor Day,<br>• Gazprom Energy Day,<br>• Gazprom Energoholding Investor and Analyst Day.   |
|   | Regular conferences calls are held to discuss IFRS results of OAO Mosenergo, OAO OGK-2 and OAO TGC-1.   | In 2012–2013, the following activities were held:<br>• 7 conference calls to discuss the financial results of OAO Mosenergo,<br>• 6 conference calls to discuss the financial results of OAO TGC-1,<br>• 5 conferences calls to discuss the financial results of OAO OGK-2.  |
|   | One-off meetings, both one-on-one and in small groups, held with shareholders, analysts, and investors of OOO Gazprom Energoholding, OAO Mosenergo, OAO TGC-1 and OAO OGK-2 at events organised by investment funds and banks.  | In 2012, meetings were held:<br>• with 18 shareholders, analysts, and investors during the Russia Forum on 30 January–1 February 2012;<br>• with 8 shareholders, analysts and investors during Morgan Stanley Utility Trip on 22 March 2012,<br>• with 23 shareholders, analysts, and investors during Morgan Stanley Utility Trip on 22 March 2012;<br>In 2013, meetings were held:<br>• with 23 shareholders, analysts, and investors during the Russia Forum on 16–17 April 2013,<br>• with 6 shareholders, analysts and investors during the Renaissance Capital's 17th Annual Investor Conference on 24 June 2013,<br>• with 18 shareholders, analysts and investors during the RUSSIA CALLING! VTB Investment Forum on 1–3 October 2013. |
|   | Disclosures on the websites of OOO Gazprom Energoholding, OAO Mosenergo, OAO TGC-1, and OAO OGK-2 and personalized circulation of information in accordance with Russian laws, and submission of all information required by foreign laws to the depository banks of our companies.               | Website disclosures are updated with new data subject to mandatory disclosure in accordance with Russian laws, as they appear.<br>Information is transferred to foreign depository banks on a regular basis and upon request.  |
| Disclosures of presentations and information materials not subject to mandatory publication under the laws but providing clarifications or reference on websites of OOO Gazprom Energoholding, OAO Mosenergo, OAO TGC-1, and OAO OGK-2 and personalized circulation for convenience of shareholders, analysts, and investors. | IR campaigns, preparation of all reports, and other corporate events which we believe could be of interest to shareholders, analysts, and investors, are covered on websites of our companies by publication of presentations and information materials, including press-releases.                |  |

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| Stakeholders and topics of interest  | Forms of interaction  | Frequency of interaction  |
|--|---|---|
|  | Calls, management meetings and disclosure of information.   | Upon request of shareholders, analysts or investors – upon request of shareholders (up to several times a week).<br>Companies additionally interact with major shareholders when preparing for the meetings of the Board of Directors or committees of the Board of Directors, or General Shareholders Meeting, including discussion and submission of proposals by shareholders to be introduced in the agenda of such meetings, as well as nomination of candidates to the governing bodies and their committees.   |
| <b>Capital suppliers (lenders and rating agencies)</b><br>Topics of interest:<br>• financial and performance indicators,<br>• investment programmes,<br>• debt indicators and debt portfolio structure,<br>• borrowing policy,<br>• business development strategy,<br>• M&A.   | Meetings between the management of OAO Mosenergo and OAO TGC-1 and representatives of rating agencies, and disclosure of all requested information.   | For OAO Mosenergo: annually, when ratings assigned by Standard & Poor's and Fitch Ratings are changed or confirmed.<br>For OAO TGC-1: one-off interaction during the reporting period (2012–2013) when the ratings assigned by RusRating were changed or confirmed. Since 27 March 2014, RusRating no longer assigns its credit rating to OAO TGC-1.  |
|  | Negotiations at offering bonds or making bank loans.  | One-off basis.  |
|  | Negotiations within Gazprom Group regarding intragroup loans.   | One-off basis.  |
|  | Regular publication of reports on the Group companies' performance.   | Reports published by OAO Mosenergo, OAO TGC-1, and OAO OGK-2 on an annual and quarterly basis include information on their financial condition, liabilities and potential risks.  |
| <b>Local communities (local population, civil society organisations, and local authorities)</b><br>Topics of interest:<br>• uninterrupted heat and electricity supply,<br>• compliance with environmental norms and standards,<br>• energy saving and energy efficiency,<br>• compliance with safety standards and rules,<br>• new jobs and salary levels,<br>• taxes,<br>• charity,<br>• joint activities with public organisations and local authorities,<br>• contribution to the development of local infrastructure,<br>• business development. | Involvement in expert consultations, meetings, and task forces on regional development, established by municipal authorities.<br>Regular information meetings with the public authorities in the regions where the Group companies are present.<br>Public consultations.<br>Regular publication of reports on the Group companies' performance.<br>Cultural and awareness raising events to increase local awareness of:<br>• heat and electricity production,<br>• operations of our companies in relevant regions,<br>• ways to improve energy efficiency and safety,<br>• emergency procedures connected with operation of our facilities. | On a regular basis.<br>On a regular basis.<br>At the inception of each construction of new industrial facilities.<br>Reports published by OAO Mosenergo, OAO TGC-1 and OAO OGK-2 on an annual and quarterly basis include information on the investment and social projects implemented by our companies, including projects aimed to promote development of the regions where our production facilities are located.<br>Our generating companies, i.e. OAO Mosenergo, OAO TGC-1 and OAO OGK-2, organise (each in the region where it operates) such events on a monthly basis and also participate in events held by local authorities and public organisations. |
|  | Publication and circulation through the media of information affecting interests of the local population, other companies, and local authorities in the regions where the Group companies operate on websites of OOO Gazprom Energoholding, OAO Mosenergo, OAO TGC-1, and OAO OGK-2.  | All decisions and all events which as we believe can be of interest to local communities in the regions where the Group companies operate are covered by publication of information materials, including press releases.  |

| Stakeholders and topics of interest  | Forms of interaction  | Frequency of interaction   |
|--|---|--|
| <p><b>Customers (wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers)</b></p> <p>Topics of interest:</p> <ul style="list-style-type: none"> <li>• uninterrupted heat and electricity supply,</li> <li>• performance indicators,</li> <li>• investment programmes,</li> <li>• connection terms,</li> <li>• efficiency improvement,</li> <li>• business development strategy.</li> </ul> | <p>Interaction with wholesale buyers on matters related to connection, sale, and purchase of heat, electricity, and capacity under standard agreements or under free bilateral contracts through the intermediary Trading System Administrator and System Operator.</p>   | <p>On a regular basis in accordance with the existing contracts.</p>   |
| <p><b>Government of the Russian Federation, sectoral ministries and agencies, and regional executive authorities</b></p> <p>Topics of interest:</p> <ul style="list-style-type: none"> <li>• uninterrupted heat and electricity supply,</li> <li>• performance and financial indicators,</li> <li>• investment programmes,</li> <li>• efficiency improvement,</li> <li>• business development strategy,</li> <li>• M&amp;A.</li> </ul>               | <p>Participation in the meetings of the Government Commission on the Fuel and Energy Complex and the Conciliation Committee under the Ministry of Energy.</p> <p>Interaction with organisations that determine the rules of operation of the Russian heat and electricity market (Federal Antimonopoly Service, Federal Tariff Service, Ministry of Economic Development, etc.), as well as with the Trading System Administrator and System Operator.</p> <p>Cooperation with the Supervisory Board of NP Market Council and with the Supervisory Council of NCP Council of Power Producers.</p> | <p>Gazprom Group’s management jointly with regulatory authorities carry out ongoing work to streamline the existing regulation and develop a deregulated electricity market.</p> <p>In its relations with the Government of the Russian Federation and sectoral regulatory authorities at different levels, Gazprom Group’s management is guided by the commercial interests of the Group, and seeks to negotiate the most economically beneficial conditions for our generating companies in terms of tariff, tax, and other regulations.</p> |
| <p><b>Environmental organisations</b></p> <p>Topics of interest:</p> <ul style="list-style-type: none"> <li>• compliance with environmental norms and standards,</li> <li>• mitigation/increase of all types of environmental impact,</li> <li>• environmental programmes and campaigns,</li> <li>• investment programmes,</li> <li>• energy efficiency improvement,</li> <li>• business development strategy.</li> </ul>                            | <p>Environmental management system (EMS) certification at the production sites of OAO Mosenergo, OAO TGC-1, and OAO OGK-2.</p> <p>Public consultations involving environmental organisations.</p> <p>Environmental audits and publication of environmental reports.</p>   | <p>Extension of EMS standards (ISO 14001:2004) to all generating capacities of our companies is ongoing. Several power plants pass certification every year.</p> <p>At the inception of each construction of a new facility at our company’s sites we hold public consultations involving environmental organisations.</p> <p>Independent audit reports on compliance with the international environmental management standards are published annually on the web-sites of OAO Mosenergo, OAO TGC-1 and OAO OGK-2.</p>                         |

G4-15

| Stakeholders and topics of interest  | Forms of interaction   | Frequency of interaction   |
|--|--|--|
| <b>Goods and service suppliers</b><br>Topics of interest:<br>• creditworthiness,<br>• procurement regulations and transparency,<br>• environmental, technical, and other sourcing rules and standards,<br>• investment programmes,<br>• business development strategy.   | Disclosure of a complete set of information on procurement and the sourcing procedure simultaneously and equally for all potential suppliers.  | Each time any of our companies holds a tender we post invitations to bid at <a href="http://zakupki.gov.ru/">http://zakupki.gov.ru/</a> and in GazNefitetorg.ru trading system ( <a href="http://www.gazneftetorg.ru/">http://www.gazneftetorg.ru/</a> ), as well as on the website of the relevant company.                                     |
|  | Application of universal sourcing requirements and criteria in accordance with the relevant international standard, which ensures a fair selection process and equal opportunities for all potential suppliers.  | We use ISO 9001:2008 as a universal criterion to assess reliability and good faith of potential suppliers.<br>When any of our companies organises procurements in sensitive areas of business, the procurement committee of the relevant company is involved in the decision making process to select a supplier.                                |
|  | Disclosure of information on the total number and value of contracts made through the procurement process.   | All information about previous procurements of goods and services is stored in the relevant sections on our companies' websites  |
| <b>Employees and trade unions</b><br>Topics of interest:<br>• uninterrupted heat and electricity supply,<br>• compliance with environmental norms and standards,<br>• compliance with safety standards and rules,<br>• new jobs and salary levels,<br>• social security and healthcare,<br>• professional growth and development opportunities,<br>• corporate culture,<br>• business development, | collective bargaining agreements,<br>employee incentive schemes,<br>professional training and skill development,<br>occupational safety, mandatory medical examinations, work place certification, on-the-job safety briefings,<br>sporting and cultural events,<br>Employee social security: voluntary medical insurance, recreation for employees and their family members, accident insurance, non-state pension schemes. | We are consistently interacting with trade unions, maintain employee training and skill development programmes, and use all employee social security engines.<br>Sporting and cultural events are held from time to time to reinforce the Group's corporate culture.<br>Occupational safety activities are held in accordance with Russian laws. |

G4-15

We did not take any additional measures to reinforce stakeholder relations, whether internal or external for our companies, specifically for the purposes of this Sustainability Report. We believe in consis-

tent building of stakeholder relations and, therefore, use all interaction tools which we believe to be relevant and efficient on a regular basis.

G4-26

### Organisation’s approach to risk management

At our companies, risk management includes regular risk identification, analysis and prevention, as well as mitigation of possible negative consequences.

In making decisions related to risk man-

agement, activity planning or business development, we are guided by internationally recognised Principle 15 of the Rio Declaration on Environment and Development, United Nations, 1992: “Where there are

threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

We understand that our generating companies are not only exposed to internal and external risks, but also may expose our stakeholders. Therefore, we undertake similar steps with respect to

similar exposures of key stakeholders which may arise out of operations of our companies.

G4-2  
G4-14

| Risks   | Affected stakeholders   | Measures taken   |
|---|---|--|
| <b>Risks related to the electricity and capacity market operation and heat supply to consumers</b>  |   |  |
| Decreased electricity and heat demand due to a decline in production in Russia caused by the economic crisis and energy saving measures.  | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• local population,</li> <li>• goods and service suppliers,</li> <li>• employees.</li> </ul>   | Implementation of programmes to improve operating efficiency; Long-term electricity and heat supply contracts.   |
| Change in electricity prices in the unregulated market, accompanied by an uncertainty and heat tariff restrictions in connection with the dependence on the decisions of tariff regulation authorities. | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• local population,</li> <li>• wholesale heat, electricity, and capacity buyers,</li> </ul>  | Long-term electricity and heat supply contracts. Active work within NP Market Council and NP Trading System Administrator.   |
| Change in prices for energy carriers, services (including repair), materials and equipment.   | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• local population,</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• goods and service suppliers.</li> </ul>   | Timely optimisation of fuel balance structure and proactive enabling measures. Implementation of production cost reduction and fuel saving programmes (including commissioning of CCGT units). Medium-term agreements with suppliers at fixed prices stated in business plans. Maintenance of reserve fuel stock (coal and fuel oil) at power plants to support extra fuel consumption, if necessary, and avoid large-scale one-off purchases. Optimisation of repair & operation and capital construction costs. Tender-based supplier selection. |
| Risk of non-payments for electricity and heat.  | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• local population, civil society organisations and local authorities,</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• sectoral regulatory authorities.</li> </ul>                                      | Work in the Commission for Payments in the Wholesale Electricity and Capacity Market, preparation of proposals on improvement of payment discipline in the wholesale electricity and capacity market. For regular non-payers – heat supply limitations (it is possible only in retail markets; Gazprom Energoholding may not be involved; it can be done only after a number of notices and only with respect to facilities other than socially significant facilities or facilities that can not be disconnected by virtue of law).               |
| <b>Specific production and technical risks</b>  |   |  |
| Accidents due to wear and tear of fixed assets.   | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• local population, civil society organisations and local authorities,</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• sectoral regulatory authorities,</li> <li>• environmental organisations,</li> <li>• employees and trade unions.</li> </ul> | Timely repair and modernisation, upgrading, and retrofitting. Implementation of an investment programme providing for construction of new facilities at the existing power plant sites. Gradual decommissioning of old facilities.   |

G4-27

EU27

| Risks  | Affected stakeholders   | Measures taken  |
|--|---|---|
| Failure to meet contractual obligations by contractors and partners in terms of deliver periods and quality of raw materials and components or services.   | <ul style="list-style-type: none"> <li>• local population, civil society organisations and local authorities,</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• environmental organisations,</li> <li>• employees and trade unions,</li> </ul>   | <p>Reinforcement of the preliminary counterparty risk analysis system.</p> <p>Control of fulfilment of obligations by counterparties.</p>   |
| Risks of weather conditions, seasonal water content changes.   | <ul style="list-style-type: none"> <li>• shareholders, investors, and analysts,</li> <li>• creditors,</li> <li>• wholesale heat, electricity, and capacity buyers,</li> <li>• goods and service suppliers,</li> <li>• employees and trade unions.</li> </ul>  | Our companies are not in full control of this risk. Nevertheless, we take it into account during planning and strategic decision making.  |
| Competition with more efficient electricity producers, including those using innovative technologies, in the context of a liberalised market.  | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• wholesale heat, electricity, and capacity buyers,</li> <li>• sectoral regulatory authorities,</li> <li>• environmental organisations,</li> <li>• goods and service suppliers,</li> <li>• employees and trade unions.</li> </ul>  | <p>Implementation of programmes to improve operating efficiency.</p> <p>Timely repair and modernisation, upgrading and retrofitting.</p> <p>Additional employee training and development.</p>   |
| Increased future competition after all energy companies complete their investment programmes, including the risk of distribution grid expansion, which will make “locked” capacities of energy systems in the Murmansk Region (Kola Nuclear Power Plant) and Siberia accessible by a wider range of consumers in the first pricing zone. | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• wholesale heat, electricity, and capacity buyers,</li> <li>• sectoral regulatory authorities,</li> <li>• goods and service suppliers,</li> <li>• employees and trade unions.</li> </ul>  | <p>Implementation of programmes to improve operating efficiency.</p> <p>Timely repair and modernisation, upgrading and retrofitting.</p> <p>Long-term electricity and heat supply agreements.</p>   |
| <b>Government regulation risks</b>   |   |   |
| Decisions by the government authorities to freeze or limit electricity and heat tariff growth or approve tariffs below the costs incurred by our companies.  | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• wholesale heat, electricity, and capacity buyers,</li> <li>• Government of the Russian Federation and sectoral regulatory authorities.</li> </ul>  | Active interaction with the Federal Tariff Service of Russia, regional energy commissions, and fuel and energy committees in regions and cities, where our companies have generating facilities, to ensure approval of reasonable tariffs   |
| Amendments to regulations governing activities of energy sector players, including the rules governing the wholesale electricity and capacity market, as well as regulations on heat supply and utilities.   | <ul style="list-style-type: none"> <li>• shareholders, investors, and analysts,</li> <li>• creditors and rating agencies,</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• Government of the Russian Federation and sectoral regulatory authorities.</li> </ul>   | Involvement in drafting of regulations and regulatory impact assessment of draft regulations; development of a consolidated position of generating companies on amendments to wholesale market rules within NCP Council of Power Producers, and communication of this position to the authors of draft regulations. |
| Risks of changes in the requirements to licensing of our companies’ core activities or rights to use items with limited circulation (including natural resources).   | <ul style="list-style-type: none"> <li>• shareholders, investors, and analysts,</li> <li>• creditors and rating agencies,</li> <li>• local communities (local population, civil society organisations and local authorities),</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• Government of the Russian Federation and sectoral regulatory authorities,</li> <li>• environmental organisations,</li> <li>• goods and service suppliers,</li> <li>• employees and trade unions</li> </ul> | Upon expiration of licenses or in case of changes in licensing requirements, OAO OGK-2 will take all possible steps to maintain current or obtain new licenses and will also perform all actions necessary to align its activity with the new licensing requirements.   |

G4-EC2

| Risks  | Affected stakeholders  | Measures taken  |
|--|--|---|
| Risks of changes in Russian legislation, specifically in tax and civil laws.   | <ul style="list-style-type: none"> <li>• shareholders, investors, and analysts,</li> <li>• creditors and rating agencies,</li> <li>• local communities (local population, civil society organisations and local authorities),</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• Government of the Russian Federation and sectoral regulatory authorities,</li> <li>• environmental organisations,</li> <li>• goods and service suppliers,</li> <li>• employees and trade unions.</li> </ul> | Timely review of changes in taxation and legislation, and respective adjustment of corporate procedures and processes.  |
| <b>Risks during implementation of investment projects</b>  |  |   |
| Risks of financial and reputational losses during investment project implementation: <ul style="list-style-type: none"> <li>• shortage of funds to ensure full project financing,</li> <li>• project implementation delays and related sanctions imposed on the companies in accordance with the CSA terms and conditions,</li> <li>• unexpected increase in costs and deterioration of the approved project parameters,</li> <li>• compliance of the projects implemented with the standards and requirements of regulatory authorities.</li> </ul> | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors,</li> <li>• local population and local authorities,</li> <li>• wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers,</li> <li>• Government of the Russian Federation and sectoral regulators,</li> <li>• environmental organisations,</li> <li>• goods and service suppliers,</li> <li>• employees and trade unions.</li> </ul>  | Selection of sources of finance for investment programmes.<br>Improvement of organisation and supervision of work by everyone engaged in investment project implementation.<br>Tough penalties for a failure to meet critical investment project milestones incorporated in agreements with suppliers and contractors.<br>Detailed designing of technical solutions to be used. |
| <b>Risks related to financial markets</b>  |  |   |
| Interest risk.   | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors,</li> <li>• goods and service suppliers.</li> </ul>   | Raising of short- and long-term loans subject to optimal loan portfolio structure and value.<br>Issue of bonds subject to a favourable market situation.  |
| Inflation: <ul style="list-style-type: none"> <li>• decreased real value of receivables in case of deferred or delayed payments,</li> <li>• increased interest payable,</li> <li>• increased cost of goods and services purchased,</li> <li>• decreased real value of funds raised to implement an investment programme.</li> </ul>  | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• goods and service suppliers,</li> <li>• Government of the Russian Federation and sectoral regulatory authorities,</li> <li>• employees and trade unions.</li> </ul>   | Efforts to ensure approval of reasonable tariffs for the companies, subject to government limitations.<br>Internal cost reduction.  |
| Foreign exchange risk.   | <ul style="list-style-type: none"> <li>• creditors and rating agencies,</li> <li>• goods and service suppliers.</li> </ul>   | Maintaining an open currency position as minimized as possible.<br>Revision of plans for purchasing imported goods in foreign currencies.   |
| Risk of outflow of foreign speculative capital in case of an unstable political and economic situation, market downturns or economic development deceleration.   | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies.</li> </ul>   | Our companies are not in full control of this risk. However, we take proactive steps to increase shareholder value of our companies and ensure stable share prices.   |

| Risks  | Affected stakeholders  | Measures taken   |
|--|--|--|
| <b>Environmental risks</b>   |  |  |
| Risk of environmental damage or pollution with subsequent civil liability and the need to take steps to rectify such damage. | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors and rating agencies,</li> <li>• local communities (local population, civil society organisations and local authorities),</li> <li>• sectoral regulatory authorities,</li> <li>• environmental organisations.</li> </ul>   | <p>Control of activities to ensure compliance with Russian and international environmental standards.</p> <p>Employee training to respond to any emergency that can cause environmental damage at generating facility sites, including joint exercises with the Federal Fire Service of EMERCOM of Russia, ambulance service, and special rescue teams.</p> <p>Asset upgrading and retrofitting, and production process adjustment to reduce environmental impact during normal operation.</p> <p>Environmental liability insurance.</p> |
| <b>Social risks</b>  |  |  |
| Risk of terrorist attacks at our generating facilities.  | <ul style="list-style-type: none"> <li>• shareholders, investors,</li> <li>• creditors,</li> <li>• local communities (local population, civil society organisations and local authorities),</li> <li>• Government of the Russian Federation,</li> <li>• environmental organisations,</li> <li>• employees and trade unions.</li> </ul>   | <p>Counter-terrorism activities in accordance with Russian statutory requirements.</p> <p>Property and personnel insurance.</p>  |
| Risks connected with production failures and accidents caused by human error.  | <ul style="list-style-type: none"> <li>• shareholders, investors, and analysts,</li> <li>• creditors and rating agencies,</li> <li>• local communities (local population, civil society organisations and local authorities),</li> <li>• customers (wholesale heat, electricity, and capacity buyers, including guaranteeing suppliers and major industrial consumers),</li> <li>• Government of the Russian Federation and sectoral regulatory authorities,</li> <li>• environmental organisations,</li> <li>• employees and trade unions.</li> </ul> | <p>Commercial insurance of property, civil liability of owners of hazardous production and hydraulic facilities, vehicles, etc.</p> <p>Careful personnel selection against the required set of qualifications.</p> <p>Personnel briefing, training, and development (including special simulator training).</p> <p>Control of compliance with safety rules and work discipline.</p>  |
| Corruption risks and risks of conflict of interests.   | <ul style="list-style-type: none"> <li>• Goods and service suppliers,</li> <li>• Employees and trade unions.</li> </ul>  | <p>Internal control to ensure no conflict of interests arises during procurement, contracting, and recruitment.</p> <p>Implementation of the Code of Corporate Ethics by OOO Gazprom Energoholding, and its roll-out across all companies of Gazprom Energoholding Group.</p> <p>Establishment and operation of the Corporate Ethics Commission by OOO Gazprom Energoholding.</p>  |

## Economic Sustainability

### Management's approach to ensure economic sustainability within the organisation and investment decision-making

Since our generating companies are main heat and electricity suppliers to both households and industrial enterprises in the regions where they operate, their economic sustainability affects not only their shareholders, investors, creditors, suppliers and employees. Economic sustainability of our companies has an important social effect on all heat and electricity consumers.

To ensure economic sustainability of our generating companies, we implement programmes aimed at streamlining costs and improving financial performance:

- Lean Production programme,
- Personnel cost optimisation,
- Relatively fixed costs optimisation,
- Upgrading and retrofitting programme optimisation,
- Repair and capex programmes optimisation,
- Shareholder value increase programme.

Our key objectives include optimisation of all cost items (variable, relatively fixed, capex) and improvement of asset performance. The cumulative effect of such programmes on EBITDA of the generating companies totalled RUB 4.5 billion in 2012 and RUB 4.1 billion in 2013.

For the first time ever, we tested the globally recognized lean production scheme at OAO Mosenergo. To adapt foreign experience to the specifics of our companies and incorporate it locally, we developed the Lean Production programme in cooperation with McKinsey & Company's consultants. The programme covered various aspects of the Company's operation, from the organisational structure of its production divisions and HR policy to procurement, and we continue its deployment and development. Currently, OAO TGC-1 is implementing such programme at its generating sites.

#### Economic effect of cost optimisation and financial performance improvement programmes on EBITDA of our generating companies

|               | EBITDA increase, RUB billion | The key effect was driven by the following activities   |
|---------------|------------------------------|---|
| <b>2012.</b>  |                              |   |
| OAO Mosenergo | 0.7                          | <ul style="list-style-type: none"> <li>• Lean Production programme;</li> <li>• Headcount optimisation;</li> <li>• SAP deployment;</li> <li>• Reduction of prices through tenders.</li> </ul>  |
| OAO TGC-1     | 1.3                          | <ul style="list-style-type: none"> <li>• Shareholder value increase programme (cost optimisation, lean production, disposal of non-core assets);</li> <li>• CSA investment programme optimisation;</li> <li>• Automatic commercial electricity metering system;</li> <li>• Retrofitting programme curtailment.</li> </ul>   |
| OAO OGK-2     | 2.5                          | <ul style="list-style-type: none"> <li>• Synergy through consolidation of OGK-2 and OGK-6;</li> <li>• Cost reduction plan;</li> <li>• Centralised coal procurement, service outsourcing;</li> <li>• Headcount and transportation cost reduction.</li> </ul>   |
| <b>2013</b>   |                              |   |
| OAO Mosenergo | 1.5                          | <ul style="list-style-type: none"> <li>• TPP-28 shut-down (savings on salaries, contributions to extra-budgetary funds, repair costs and fuel consumption due to cost reduction after load shift to TPP-21);</li> <li>• Road transportation and vehicle-related cost optimisation;</li> <li>• Reduction of costs related to materials, repair and operation, security, fire safety (abandonment of fire stations), and insurance;</li> <li>• Activities to improve investment efficiency;</li> <li>• Disposal of non-core assets.</li> </ul>  |
| OAO TGC-1     | 1.8                          | <ul style="list-style-type: none"> <li>• Reduction of excessive downtime during overhaul, intermediate or current repair;</li> <li>• Procurement system optimisation;</li> <li>• Reduction of production costs connected with repair of equipment, buildings and structures, as well as expenses for water supply, consumables, etc.,</li> <li>• Non-production cost reduction (travel expenses, subscription expenses, cleaning, IT services, rent, insurance, advertising and marketing);</li> <li>• Sales efficiency improvement;</li> <li>• Inventory stock reduction at the warehouses of OAO TGC-1 and centralisation of warehousing facilities at the structural divisions;</li> <li>• Disposal of non-core assets.</li> </ul>   |
| OAO OGK-2     | 0.8                          | <ul style="list-style-type: none"> <li>• Organisational structure unification and headcount optimisation, variable salary reduction;</li> <li>• Reduction of insurance contributions to extra-budgetary funds;</li> <li>• Fuel balance optimisation and improvement of process fuel procurement efficiency;</li> <li>• Savings during procurements;</li> <li>• Non-production cost reduction (travel expenses, telephone expenses, IT services);</li> <li>• Improvement of efficiency of sales and implementation of energy security enhancement plans (inter alia, through controlling power range adjustment, including lower limit reduction to 105 MW and upper limit increase to 220 MW for the power generating units of Pskovskaya GRES);</li> <li>• Disposal of non-core assets.</li> </ul> |



## Financial and economic performance

According to GRI 4.0 methodology, economic value distributed includes the following components:

- operating costs – amounts paid to counterparties for materials, product components, equipment and services, or as lease fees, license fees, commission, royalty or payments made to contract workers, etc;
- payroll and other payments and benefits – payroll, payments to the government authorities on behalf of employees (taxes, charges, contributions to the unemployment insurance fund), as well as pension and insurance contributions, employee healthcare costs, severance payments, and other forms of employee support;
- payments to providers of capital – dividends to shareholders of all classes and interest paid to creditors. Since our companies' shareholders include federal territories and municipalities, the amount payable to them was reflected in the "budget payments" item;
- budget payments – all taxes payable by the organisation, except for deferred taxes. Since our companies' shareholders include federal territories and municipalities, this amount also includes dividends payable to them;
- community investments – donations to charities and non-governmental organisations or research institutions, costs incurred to maintain public infrastructure, and direct financing of social programmes, cultural and awareness raising events.

Financial performance of our generating companies is disclosed in the Sustainability Report in accordance with the GRI 4.0 methodology. All financials presented in this report are based on the audited consolidated financial statements of OAO Mosenergo, OAO TGC-1 and OAO OGK-2 prepared in accordance with the International Financial Reporting Standards (IFRS). Our financial and

accounting statements are further disclosed on the official websites of our generating companies:

- OAO Mosenergo – <http://www.mosenergo.ru/catalog/281.aspx>
- OAO TGC-1 – <http://www.tgc1.ru/ir/reports/>
- OAO OGK-2 – <http://www.ogk2.ru/rus/si/finances/>

| RUB million                            | Mosenergo      |                | TGC-1         |               | OGK-2          |                |
|--|----------------|----------------|---------------|---------------|----------------|----------------|
|  | 2012           | 2013           | 2012          | 2013          | 2012           | 2013           |
| Net sales                              | 157,139        | 156,663        | 62,168        | 69,853        | 104,213        | 111,976        |
| Income from financial investments      | 1,608          | 614            | 191           | 188           | 122            | 339            |
| Income from asset disposals            | 1,249          | 554            | 672           | 10            | 13             | 22             |
| <b>Direct economic value generated</b> | <b>159,996</b> | <b>157,831</b> | <b>63,031</b> | <b>70,051</b> | <b>104,348</b> | <b>112,337</b> |

| RUB million                             | Mosenergo      |                | TGC-1         |               | OGK-2         |               |
|---|----------------|----------------|---------------|---------------|---------------|---------------|
|   | 2012           | 2013           | 2012          | 2013          | 2012          | 2013          |
| operating expenses                      | 101,499        | 107,449        | 40,762        | 43,879        | 78,831        | 85,902        |
| payroll and other payments and benefits | 8,594          | 9,902          | 6,544         | 6,794         | 7,012         | 7,371         |
| payments to providers of capital        | 1,931          | 3,591          | 2,014         | 2,552         | 2,220         | 1,823         |
| budget payments                         | 3,668          | 2,609          | 992           | 1,042         | 3,311         | 3,079         |
| community investments                   | –              | –              | 20            | 18            | 5             | 9             |
| <b>Economic value distributed</b>       | <b>115,692</b> | <b>123,551</b> | <b>50,332</b> | <b>54,285</b> | <b>91,379</b> | <b>98,184</b> |

| RUB million                     | Mosenergo     |               | TGC-1         |               | OGK-2         |               |
|---------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                 | 2012          | 2013          | 2012          | 2013          | 2012          | 2013          |
| Direct economic value generated | 159,996       | 157,831       | 63,031        | 70,051        | 104,348       | 112,337       |
| Economic value distributed      | 115,692       | 123,551       | 50,332        | 54,285        | 91,379        | 98,184        |
| <b>Economic value retained</b>  | <b>44,304</b> | <b>34,280</b> | <b>12,699</b> | <b>15,766</b> | <b>12,969</b> | <b>14,153</b> |

According to GRI 4.0 methodology, direct economic value generated includes the following components:

- net sales, i.e. gross sales less returns, discounts and write-offs;
- income from direct investments, i.e. proceeds in the form of interest on financial loans, dividends on shares, royalty or direct income from the use of organisation's assets (e.g., property lease);
- income from disposal of assets, i.e. proceeds from disposal of tangible or intangible assets.

Based on GRI 4.0 methodology, economic value retained is calculated as the difference between direct economic value generated and economic value distributed.

In addition to external audit, the financial performance of our generating companies is also subject to internal controls of OAO

Gazprom. Internal controls are essential to protect the interests of shareholders and investors.

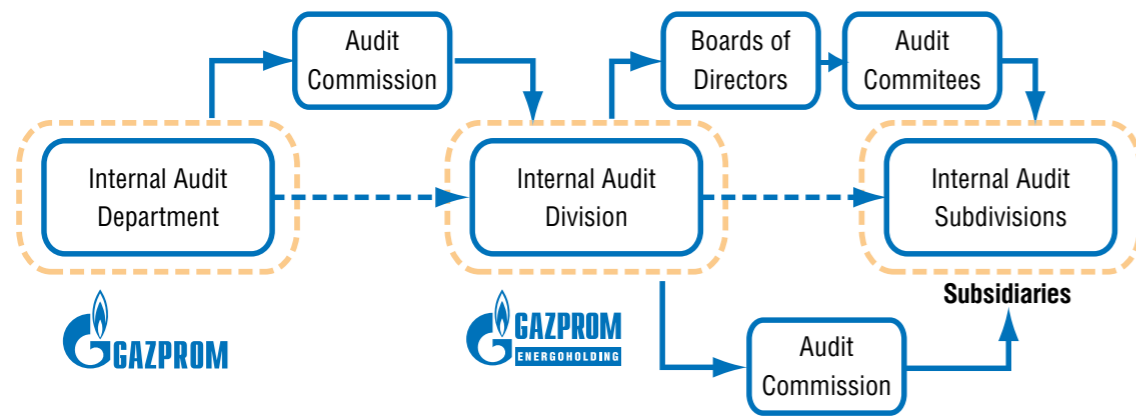


Fig. 19. Internal controls for financial performance of Gazprom Energoholding Group's generating companies

In their work, the employees of internal audit divisions at Gazprom Energoholding Group's companies are guided by the Code of Professional Ethics of the Internal Auditor. Although the internal audit rules and mechanisms used at our companies are rather efficient, we improve them continuously. New revisions of the core documents were developed in 2013, based on OAO Gazprom's

common internal control and audit standards, to improve efficiency of the internal audit departments at Gazprom Energoholding Group's companies.

Audit commissions were set up at Gazprom Energoholding Group's generating companies to oversee preparation of accurate financial and accounting statements.

### Increased demand from private, commercial, institutional, and industrial consumers

The demand for electricity in Russia is driven by economic growth and development of regional energy saving programmes. Upon request of the System Operator, our generating companies can supply electricity and capacity to addi-

tional consumers within their operating capacity.

The demand for heat mainly depends on weather conditions, efficiency of energy saving measures, as well as on the scale of construction of apartment buildings, commercial

real estate, and industrial facilities. Currently, new residential quarters are actively developed in the regions where our generating facilities operate. Subject to their installed capacity, our companies are also ready to satisfy the demand for heat from such consumers.

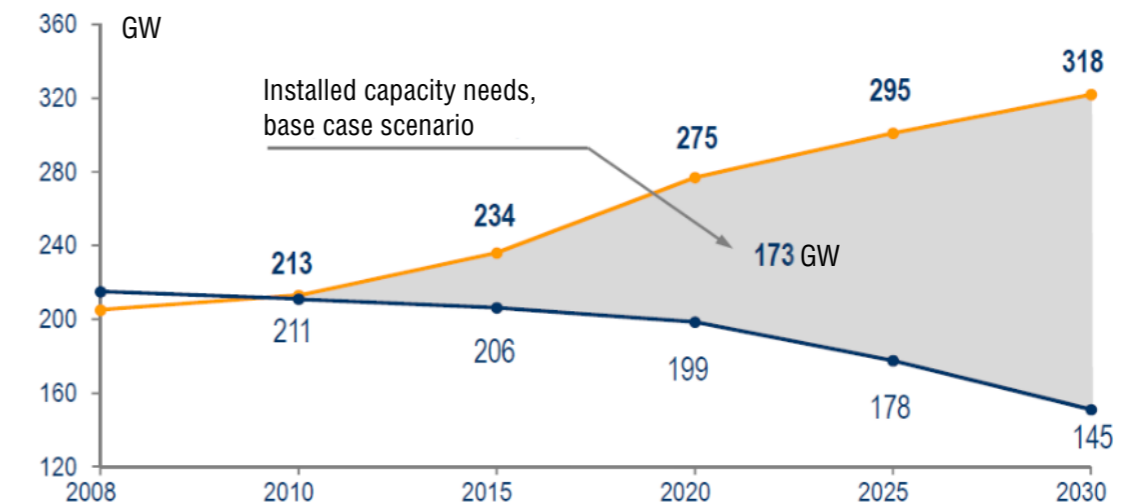
**OAO Mosenergo considers penetration to new markets in new cities being built close to Moscow and within the New Moscow area as a way to increase its heat sales.**

In January 2013, an agreement was made to lease the heat supply infrastructure in the Khimki city district until 2038. This will make it possible to ensure uninterrupted heat supply to the city district consumers from Mosenergo's TPP-21 located in the north of the capital and increase heat output in the combined operation mode. Heat load of 405 Gcal/h in Khimki and 200 Gcal/h in Mytishchi is expected to be transferred to Mosenergo's TPP-21 and TPP-27 by 2025.

Medium- and low-capacity co-generation is to be launched in the New Moscow area. Facilities can be joined with power substations, thus creating unified energy supply facilities, the so-called "energy complexes" that will also be able to generate cold (trigeneration), if necessary. 10 energy complexes are expected to be developed with a total output of 1,446 MW of electricity and 2,318 Gcal/h of heat. These energy complexes are: Kommunarka, Vatutinki, Kokoshkino, Moskovsky, Mosrentgen, Novofedorovskoye, Pervomayskoye, Troitsk, Voronovo, and Rublevo-Arkhangelskoye.

Estimated total electricity demand in the unified energy system (UES) of Russia is expected to reach 1,151.0 billion kWh by 2019, which is 13.2% higher than electricity consumption in 2012 (absolute growth of 134.5 billion kWh), with average annual growth over the period of 1.79%. The highest electricity demand growth rates across the UES of Russia are expected in 2014–2017 driven by the planned extension and retrofitting of production facilities at the existing sites and expected commissioning of new production facilities at major processing enterprises. Lower electricity consumption growth rates after 2017 are due to the expected upgrade of industrial production, mostly energy-intensive metallurgical industry, and due to accelerated development of energy-saving technology.

#### Master plan of electric energy facilities in the Russian Federation until 2030



To implement the general plan, CHPPs will need RUB 10 trillion of investments in the development of electric energy sector until 2030.

Fig. 20. Master plan of electric energy facilities location in the Russian Federation until 2030

EU10  
G4-DMA  
(ранее  
EU47)

In our assessment of the future structure, heat generation and consumption until 2030, we were guided by the Energy Strategy of Russia for the period up to 2030. It takes into account deurbanisation that has already started, including relocation of industrial production sites outside of cities and rapid development of detached houses (52–55% of all housing commissioned), where heat will be supplied mainly from autonomous sources. The main growth of heat generation in the

centralised heat supply systems at combined heat power plants can be achieved by shifting heat loads of boiler houses (generation by CHPs will increase from 44% to 49–50%). In addition, it will increase the use of waste-heat utilization plants and renewable heat sources using geothermal and solar energy, and biomass. As a result, the share of heat generated by some boiler houses in the centralised heat supply system will decrease from 49% to 40%.

## Decommissioning of inefficient facilities

### Decommissioning of inefficient generation equipment, MW

| Power plant           | Equipment   | Decommissioned |         | To be decommissioned  |
|-----------------------|---|----------------|---------|---|
|                       |   | 2012           | 2013    | 2014-2017   |
| <b>Mosenergo</b>      |   |                |         |   |
| HPP-1                 | Turbine Generator (TG) of Unit No. 26, 27, 28, 29, 30, 31 | –              | –       | 76 MW   |
|                       | TG of Unit No. 7F   | –              | –       | 10 MW   |
| TPP-12                | TG of Unit No. 1F   | –              | 6 MW    | –   |
|                       | TG of Unit No. 2F   | –              | 6 MW    | –   |
| TPP-16                | TG of Unit No. 1, 2, 3, 4                                 | –              | –       | 130 MW  |
| TPP-20                | TG of Unit No. 1, 2, 3                                    | –              | –       | 90 MW   |
| TPP-28                | TG of Unit No. 1  | –              | 25 MW   | –   |
| <b>TGC-1</b>          |   |                |         |   |
| Dubrovskaya CHP       | TG-1  | 50 MW          | –       | –   |
|                       | TG-2  | –              | 50 MW   | –   |
| Pervomayskaya CHP     | TG-1, 2, 7  | 110 MW         | –       | –   |
|                       | TG-3, 4, 5  | –              | –       | 164 MW  |
| Avtovskaya CHP        | TG-1, 2, 3, 4, 5  | –              | –       | 124 MW (provided that the capacity delivery system is retrofitted and replacement heat generation capacity is commissioned) |
| Vyborgskaya CHP       | TG-1  | –              | 27.5 MW | –   |
|                       | TG-2  | –              | –       | 27.5 MW (provided that 1st stage 35/6 kW substation is retrofitted)   |
| Apatitskaya CHP       | TG-2, 5   | –              | 57 MW   | –   |
| Tsentralnaya CHP      | TG-1 of ES-2  | –              | –       | 20.5 MW   |
|                       | TG-1 of ES-3  | –              | –       | 2 MW  |
|                       | TG-2, 5 of ES-2   | –              | –       | 53 MW (provided that replacement heat generation capacity is commissioned)  |
| <b>OGK-2</b>          |   |                |         |   |
| Novocherkasskaya GRES | TG No. 8  | 264 MW         | –       | –   |
| Troitskaya GRES       | TG No. 9  | –              | 485 MW  | –   |
|                       | TG No. 1, 2, 3.   | –              | –       | 255 MW (after retrofitting of the thermal power facilities at Troitskaya GRES, from 01 January 2017)                        |
|                       | TG No. 7  | –              | –       | 278 MW (documents submitted for decommissioning from 01 January 2015)   |
| Kirishskaya GRES      | TG No. 6  | –              | 40 MW   | Decommissioned for mothballing  |
| Serovskaya GRES       | TG No. 1–8  | –              | –       | 538 MW (provided that replacement heat generation capacity is commissioned)   |
| Krasnoyarskaya GRES-2 | TG No. 5  | –              | –       | 50 MW (from 01 January 2016)  |

In line with resolution of Gazprom's Board of Directors, in 2012–2013 we analysed European and Asian electricity markets. In cooperation with external advisers from Booz & Company and Boston Consulting Group we surveyed key countries in this region in terms of prospects of development of their electricity markets and their appeal for Gazprom Group. Detailed analysis captured European and Asian countries including the markets of China, Japan, South Korea, India, Vietnam, Indonesia, and Thailand. Based on the findings, four most promising countries in the Asian region were identified for further research by Gazprom Group: Japan, China, India and Vietnam.

Based on the study and modelling of the markets in the selected countries, conclusions were made that, notwithstanding currently low margins and lack of transparent mechanisms to encourage gas generation in the target countries, gas-fuelled electricity generation has a huge potential in the future. Therefore, Gazprom Group will continue the ongoing monitoring of Asian electricity markets to find promising projects.

General analysis of all European electricity markets showed that a small growth of gas generation is expected over the next 20 years in a difficult market environment. Based on the study, four most promising countries were identified for consideration by Gazprom Group, including Germany, United Kingdom, Turkey and Serbia.

Based on that work, a conclusion can be made that additional monitoring of the situation around gas generation in Europe is needed to see whether conditions will arise to ensure payback of such projects. At the same time there are certain individual projects that may potentially be of interest for Gazprom Group to create additional synergy.



Fig. 21. TPP-16: Disassembly of Cooling Tower No. 2

Not all generation facilities that are inefficient in the owner's view can be approved by the System Operator for decommissioning due to the risk of shortages in electricity or heat supply to retail consumers. The owner must file an application with the System Operator to decommission the facility under its dispatch control. The System Operator considers the application, decides whether to approve or reject it, notifies the applicant about its decision, and then submits its opinion to the Russian Ministry of Energy. Where the System Operator decides to reject a decommissioning application, the relevant generation facility should operate in the capacity market as a "forced generator" and should be treated on special terms in the CCO procedure.

Our generating companies implement a large-scale investment programme that provides for greenfield construction of new facilities and retrofitting or technical re-equipment of existing generation and auxiliary facilities. Our investment efforts primarily focus on increasing the shareholder value and enhancing the equity stories of Gazprom Energoholding's generating companies; ensuring reliable uninterrupted electricity and heat supply to consumers, and mitigating the adverse environmental impacts by our power plants. The investment programme of Gazprom Energoholding's generating companies provides for five core project categories:

- Mandatory investment projects (e.g. projects under Capacity Supply Agreements (CSA) that are mandatory for implementation according to statutory requirements or requirements of supervisory authorities;
- Other strategic projects: related to the overall business growth of generating companies, e.g. construction of new units (initiated by the company's top management and assessed based on a business plan).
- Efficiency enhancement projects: designed to additionally increase income or reduce operating expenses and unrelated to capacity

additions (assessed against a business plan and technical criteria).

- Reliability enhancement projects: aimed at ensuring a smooth operating process by replacing worn-out equipment (triggered by the breakdown risk level and assessed against specific criteria depending on the equipment type).
- Social and administrative projects: unrelated to core operations (triggered by and assessed against qualitative criteria).

Investment projects for the construction of generation facilities under Capacity Supply Agreements (CSA) are implemented by Gazprom Group's generating companies pursuant to Instruction No. 1334-r On Approval of the List of Generating Facilities That Will Be Used to Supply Capacity under Capacity Supply Agreements of 11 August 2010. The responsibility for implementing these projects is assigned to the following generating companies of Gazprom Group: OAO OGK-2, OAO Mosenergo, OAO TGC-1.

On 01 January 2010, Gazprom Group's generating companies signed Agency Agreements that, on the one hand, guarantee payback from CSA investment projects, and, on the other, impose fines on the generating companies for delays in commissioning generating facilities (up to 25% of the investment project costs).

## Infrastructure investment projects

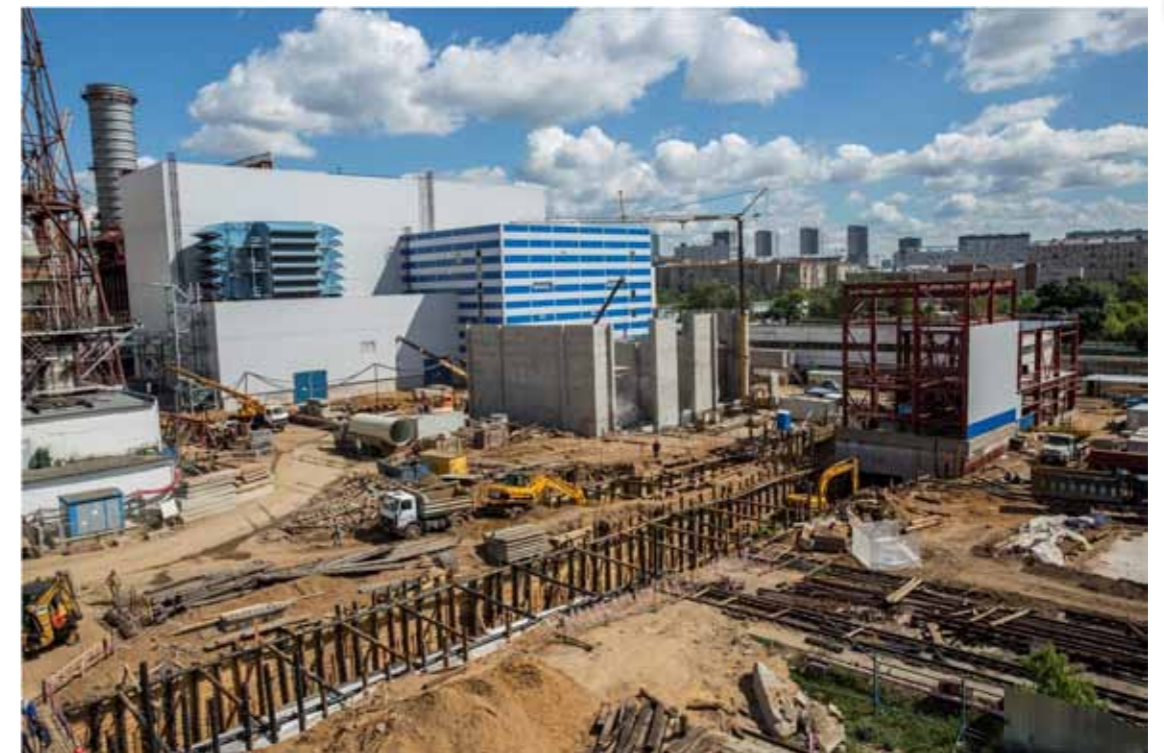


Fig. 22. TPP-16

The total commitment by Gazprom Energoholding's generating companies to commission generating facilities under their obligations to supply capacity to the wholesale market (the "CSA") between 2008 and 2017 is 8.9 GW, or 29.7% of the combined CSA commitments nation-wide. This implies that Gazprom Energoholding is the largest investor in the Russian electricity sector.

OOO Lukoil – Stavropolenergo, OAO E.ON –Russia and OAO Mosenergo made it to the top three generating companies of Q1 2012 in the quarterly rating by Nonprofit Partnership Market Council. The rating is built based on companies' achievements in financing their mandatory investment programmes under CSA. Apart from quarterly data, it also factors in targets through 2017.

## Capacity commissioning in the wholesale electricity and capacity market, MW (CSA capacity growth).

| Power plant                                 | Equipment                           | Commissioned |      | To be decommissioned |
|---|-------------------------------------|--------------|------|----------------------|
|   |                                     | 2012         | 2013 | 2014-2017            |
| <b>Mosenergo</b>                            |                                     |              |      |                      |
| TPP-9                                       | GTE-65 of Unit No. 1                | –            | –    | 64.8                 |
| TPP-12                                      | CCGT-220 of Unit No. 1              | –            | –    | 220                  |
| TPP-16                                      | CCGT-420 of Unit No. 8              | –            | –    | 420                  |
| TPP-20                                      | CCGT-420 of Unit No. 11             | –            | –    | 420                  |
| <b>TGC-1</b>                                |                                     |              |      |                      |
| Pervomayskaya CHP                           | Unit No. 2                          | 180          | –    | –                    |
| Svetogorskaya HPP of the Vuoksa HPP Cascade | Unit No. 4                          | 30.5         | –    | –                    |
|   | Unit No. 2                          | –            | 30.5 | –                    |
| Pravoberezhnaya CHP                         |                                     | –            | 463  | –                    |
| Lesogorskaya HPP of the Vuoksa HPP Cascade  | Unit No. 3                          | –            | 29.5 | –                    |
| Tsentralnaya CHP                            | Facility No. 13, 14 (GTU-CHP, ES-1) | –            | –    | 100                  |
| <b>OGK-2</b>                                |                                     |              |      |                      |
| Kirishskaya GRES                            | CCGT-800                            | 540          | –    | –                    |
| Adlerskaya TPP                              | 2*CCGT-180                          | 360          | –    | –                    |
| Troitskaya GRES                             | STU-660                             | –            | –    | 660                  |
| Serovskaya GRES                             | 2*CCGT-420                          | –            | –    | 840                  |
| Novocherkasskaya GRES                       | STU-330                             | –            | –    | 330                  |
|   | Retrofitting of Unit No. 7          | 36           | –    | –                    |
| Ryazanskaya GRES                            | CCGT-330                            | –            | –    | 60                   |
| Cherepovetskaya GRES                        | CCGT-420                            | –            | –    | 420                  |

Most generating facilities are built using Combined Cycle Gas Turbine (CCGT) technology solutions. CCGT units offer a higher efficiency ratio (c. 58% on average) as compared to gas turbine units (c. 35% on average), resulting in lower specific operating expenses. CCGT is one of the greenest technologies to date. This is mostly due to a higher efficiency ratio, which reduces emissions, and to the use of natural gas as fuel,

which results in fewer emissions than fuel oil or coal.

The total cost to implement all CSA projects of Gazprom Energoholding Group's generating companies is c. RUB 405 billion, including RUB 314,734.6 million (or 78% of the total cost of the facilities including VAT) already used as of 31 December 2013, including:

- For OAO OGK-2: RUB 131,148.0 million or 70% financed;

- For OAO TGC-1: RUB 71,625.1 million or 85% financed; and

- For OAO Mosenergo: RUB 111,961.43 million or 84% financed.

The budgeted allocations to finance Gazprom Group's investment programme for 2014–2016 amount to RUB 150.5 billion. For the above period, capex is expected to reach RUB 142 billion.



Fig. 23. Concreting of a cooling tower building at Troitskaya GRES

We are closely following the situation in regional energy markets across Russia. After we meet our obligations under the mandatory investment programme, we intend to continue the construction of new facilities, primarily in regions with low electricity supply. For us, the key criterion for making a decision to launch an investment project will be achieving returns at the level not lower than our returns on CSA projects. In particular, one of such projects is a boiler facility to be commissioned in Saint Petersburg as outdated facilities at Pervomayskaya CHP are shut down. The internal rate of return for the project is expected to be 24%.

Facility upgrade projects are another promising investment area for us. We see these projects as a good alternative to greenfield projects in terms of both cost and efficiency. On average, generation upgrade projects, including advanced upgrade projects where power plants switch from surface condensers to CCGT units, lead to

an increase in capacity comparable to that offered by greenfield construction, while offering 30% to 80% lower costs and 1.5-2 times shorter timelines, depending on the upgrade level. Their large-scale implementation, however, requires incentives from the Government, e.g. introduction of a facility similar to CSA.



Fig. 25. Installation of Hydropower Unit No. 3 at Lesogorskaya HPP

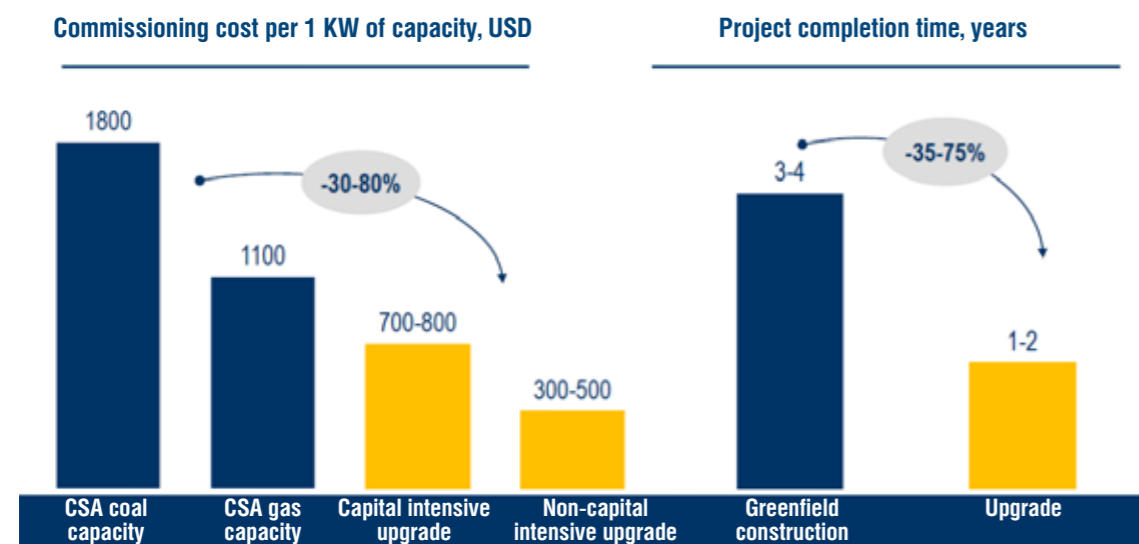


Fig. 24. Comparative cost of implementation of investment projects in the electricity sector

In addition to construction projects and advanced upgrades to its facilities, Gazprom Energoholding pays much attention to maintaining the quality and technologies of facilities it operates at advanced level. Our generating companies carry out repair, technical re-equipment and upgrade projects for their facilities on a regular basis

ties it operates at advanced level. Our generating companies carry out repair, technical re-equipment and upgrade projects for their facilities on a regular basis

When assessing the condition of equipment or making decisions to launch or prioritise certain activities, we are guided by such principles as safety, reliability and achievability of technical and efficiency performance targets. Despite the programmes run by our companies to achieve overall cost reduction, the total amount of funds allocated annually by our generating companies for repair, technical re-equipment and upgrade projects stays unchanged. We seek to increase the efficiency of these investments by redistributing the funds towards the projects that offer the greatest benefits in terms of efficiency and technology at the lowest cost.



Fig. 26. Installation of a rotor of a Hydropower Unit at Lesogorskaya HPP

Repairs are carried out at our power plants in line with the Equipment Repair Schedule that is subject to sign-off by the System Operator and annual approvals. Technical re-equipment and retrofitting are carried according to the Rules for Implementation of the Programme for Technical Re-equipment and Retrofitting.

**Mosenergo and OGC-2 operate an automated system for management, monitoring and control of the technical condition of facilities, and of all activities related to the implementation of greenfield construction, technical re-equipment, retrofitting or repair projects using a SAP-based EIMSGC<sup>18</sup> system. This system operates from three specialised modules: Investment Management (IM), Project System (PS) and Plant Maintenance (PM)<sup>19</sup>. The modules use a monthly updated corporate data warehouse and allow our generating companies to track and analyse progress in the implementation of greenfield construction investment projects (IM and PS), and plant maintenance projects (PM). The system facilitates prompt on-line management decision making.**

## R&D for more reliable energy supply and sustainable business growth

The electricity sector is a hi-tech intensive, rapidly growing industry. To stay competitive we, like other major players in the electricity sector, need to constantly enhance our operating efficiency and introduce innovative equipment.

Our innovation policy is aligned with the national policy on innovations that seeks to accelerate the transition of the Russian econ-

omy to innovation-driven development. We are also guided by the standards and requirements set out in the following documents:

- The General Location Scheme of Electric Utility Facilities in Russia until 2020 including outlook until 2030 (approved by the Government of the Russian Federation, Minutes of Meeting of the Government of the Russia No. 24 of 03 June 2010).

- Power Engineering Development Strategy of the Russian Federation for 2010–2020 including outlook until 2030 (draft).
- Russia’s Energy Strategy to 2030.
- Key Provisions (Concept) of the Technical Policy in the Electricity Sector of Russia until 2030 (RAO UES of Russia, 2008).

In July 2009, OOO Gazprom Energoholding set up a Research and Develop-

ment Council (RSC). Today, it operates as a deliberative body seeking to increase the efficiency of research, development and operating activities of the Company and energy assets of Gazprom Energoholding’s generating companies.



Fig. 27. Process equipment TPP-26



The RSC determines priority and high potential areas in R&D and innovation policies of Gazprom Energoholding’s generating companies to increase their operating efficiency and upgrade their process capacities. Key functions of the RSC are as follows:

- review strategic decisions on technical and innovative development before they are taken;
- prepare a list of developed solutions recommended for roll-out across generating companies of Gazprom Energoholding;

- evaluate research and development (R&D) projects, plans and programmes and the results of their implementation in generating companies of Gazprom Energoholding;
- examine invitations to participate in federal, intergovernmental and sectoral R&D programmes;

The Concept of Technical Policy and Development of Gazprom Energoholding’s Generating Companies serves as the key guidance for drafting and implementing R&D policies by our companies. The

document sets out the key objective of our technical policy, i.e. make our companies more competitive in the energy market by optimising the operating and process capabilities of our power plants. To achieve this goal, our R&D efforts are focused on the following areas:

- minimise specific fuel consumption for electricity and heat generation by implementing leading-edge technologies and advanced high performance equipment;
- streamline plant repair and maintenance at power plants;

- ensure compliance with environmental requirements in line with the international commitments and national standards; and
- increase the level of electricity and heat generation automation to reduce process management costs and production costs.

These activities in Gazprom Energoholding's generating companies are led by the Technical Expert Council (TEC), a specialised coordinating and deliberative body. We closely cooperate on innovative technologies in the electricity sector and production of advanced energy equipment with National Research University Moscow Power Engineering Institute, Bauman Moscow State Technical University, Lomonosov Moscow State University Urals Turbine Works and All-Russia Thermal Engineering Institute (VTI).

The project for an upgrade of K-300 unit at Kirishskaya GRES based on CCGT-800 technology is one example of large-scale innovation projects that we have implemented. Though still unique, this project can be rolled out as a ready-made solution across all Russian power plants. Apart from the large scale of CCGT-800 unit at Kirishskaya GRES (800 MW, the largest heat generation plant commissioned in Russia over 30 years), this investment project is also unique from the process perspective. In fact, it was a brownfield project for an upgrade of Generation Unit No. 6 commissioned back in 1975. Two state-of-the-art gas turbines were added to the existing steam turbine to boost the unit's efficiency ratio from 38% to 55%. This project was also the first to use unique three-circuit waste-heat boilers with reheating and natural circulation functions. Another important element of the project is that the legacy equipment used in the steam turbine unit as well as the existing power plant operation system and infrastructure were kept for cost efficiency reasons, which considerably cut costs as no innovative CCGT unit was needed. Such a large-scale upgrade of a generation unit was the first in the history of the Russian elec-

tricity sector, with many unique engineering solutions employed. Their analysis will allow us to develop unified requirements and standards for similar units.

The project for the construction of the CCGT-800 unit at Kirishskaya GRES was assigned the status of "innovative" by a joint meeting of the Scientific and Technical Board of Nonprofit Partnership Scientific and Technical Council of the Unified Energy System and the Scientific Council of the Russian Academy of Sciences for Reliability and Safety of Large Energy Systems. This status implies further testing of engineering solutions designed to improve the cycle arrangement and operating conditions of the generation unit, with relevant preferences granted by Nonprofit Partnership Trading System Administrator and Nonprofit Partnership Market Council for the operation in the Wholesale Electricity and Capacity Market. The Scientific and Technical Council of the Unified Energy System and the Scientific Council of the Russian Academy of Sciences for Reliability and Safety of Large Energy Systems recommended that the Russian Ministry of Energy, Ministry of Industry and Trade, and the Ministry of Economic Development include the construction of the 800 MW CCGT based on the existing K-300 gas turbine at Kirishskaya GRES, a branch of OAO OGK-2, in the list of innovative projects with government support.

Another example of an innovative solution successfully implemented at our power plants is the construction of Russia's first 330 MW carbon block with a circulating fluidized-bed (CFB) at Novocherkasskaya GRES. The project at Novocherkasskaya GRES is the most powerful unit in Russia that uses this technology.

We also consider as innovative the project for an upgrade of electric grid equipment and construction of new CCGT units with a combined capacity of 100 MW at Tsentralnaya CHP in Saint Petersburg. This project is unique in that this Russia's oldest power plant will be upgraded without interrupting its operation, since it is critical for uninterrupted energy supply to central districts of Saint Petersburg. The implementation of this project is further complicated not only by Tsentralnaya CHP being surrounded by historical buildings, but also by the fact that it marked its 115th anniversary in 2012, and, accordingly, required restoration as part of the upgrade project.

In pursuing our innovation policy, we are constantly facing a number of challenges and obstacles that are beyond our control. In particular, Russia does not produce enough gas turbine equipment to meet the needs of our companies in building new and upgrading existing facilities. Moreover, Russia-made equipment is significantly inferior to the best foreign equipment in its class in terms of energy efficiency and reliability. On the other hand, where foreign equipment is used, its certification to outdated Russian standards takes much time and significantly impedes the process.

Introduction and adaptation of innovative technologies and equipment at power plants requires thorough preparation and carries considerable inherent risks. The initial operation period of the first newly commissioned commercial equipment units reveals design errors and structural drawbacks. We have repeatedly encountered such situations. As a rule, we ensure prompt resolution of discovered problems. In some cases, however, the outcome of



Fig. 28. Kirishskaya GRES



Fig. 29. CCGT-800 at Kirishskaya GRES

innovations may fall short of our expectations. For example, in 2010, we added a GTE-110 (110 MW) gas turbine at Ryazanskaya GRES to an existing 310 MW generation unit operating on a waste heat recovery basis. In this project, we were unable to offset all upgrade costs with the ca-

capacity tariff. The situation was aggravated by frequent failures of the new equipment (58 shutdowns in 2010) and a marginal decrease in fuel rate – by just 1.6%.



## Government support received by the Company over the reporting period

The government directly holds a stake in the share capital of each generating company of Gazprom Energoholding (including via federal and municipal entities).

### Government's direct interest in the company's share capital, %

|           | 2012         | 2013                   |
|-----------|--------------|------------------------|
| Mosenergo | 26.45        | 26.45                  |
| TGC-1     | 0.0036664371 | 0.0036664371           |
| OGK-2     | 0.006148     | 0.003302 <sup>20</sup> |

### The total amount of government support received by our companies over the reporting period (2012–2013) in millions of roubles was as follows:

|  | 2012   | 2013 |
|--|--|------|
| Mosenergo                                | 644  | 614  |
| TGC-1 (subsidies to OAO Murmanskaya CHP) | 316  | 437  |
| OGK-2                                    | OAO OGK-2 did not receive any government support in 2012–2013. |      |

Government support to OAO Mosenergo mostly includes subsidies resulting from reimbursement for the difference in tariffs for the heat supplied to the city's residents. The Government of Moscow pays OAO Mosenergo to cover the difference between the tariff for heat consumption by the city's residents and the company's tariffs. Thus,

in fact, this subsidy is redistributed government support to Moscow residents rather than to OAO Mosenergo.

OAO TGC-2 does not receive any government subsidies. Subsidies, however, are granted to its subsidiary, OAO Murmanskaya CHP. Under Murmansk Region Law No. 919-01 On the Budgeting Process in the

Murmansk Region of 11 December 2007, OAO Murmanskaya CHP receives subsidies from the budget of the Murmansk Region to compensate for lost income due to supply of heat at tariffs that do not cover costs.

OAO OGK-2 does not receive any government subsidies.



Fig. 30. TPP-27

## Environmental Sustainability

### Management's approach to environmental aspects of the Company's activities

**Year 2013 was officially announced the Environment Year in Russia.**

As the largest holding company combining Russian generating companies, Gazprom Energoholding fully understands its environmental responsibility towards present and future generations and views environmental sustainability and measures minimising the environmental impacts of its power plants as its top priority.

The main impacts of our generation facilities that can affect the environment and health of our employees and local residents living in the immediate vicinity include:

- emissions of greenhouse gases (GHG) and other pollutants,
- water discharge into water bodies, including bottom ash,
- waste disposal,
- use of natural resources (fuel, water and land resources),
- acoustic noise, and
- vibration.

Both in making all strategic decisions and in our day-to-day operations we are guided by Russian environmental laws and regulations. In fact, we go beyond simply maintaining our environmental performance within the requirements of the limits prescribed by environmental authorities. We constantly seek to reduce the man-made impact on the environment caused by the operation of our

generating companies. We are also confident that by using natural resources as sustainably as possible and by implementing energy saving technologies we greatly contribute to our operating efficiency and competitiveness in the energy sector, and in the longer run these factors may become essential for dynamic and sustainable development of our companies.

While developing and improving measures to protect the environment against the negative impacts of our operations, we proactively cooperate with environmental regulators, with research and educational institutions working on environmental safety, and with specialised NGOs and local communities in the areas where our power plants are located.

The environmental policy of Gazprom Energoholding's generating companies is in line with OAO Gazprom's environmental policy and the concept of its technical policy and was approved by the Board of Directors of each generating company. Our environmental policy is a priority for us and is communicated to every employee across our generating companies. The key principles of the environmental policy of Gazprom Energoholding's generating companies are as follows:

- recognise the constitutional human right to a healthy environment,
- prioritise environmental safety as an element of national security,
- assume responsibility for environmental

protection in developing electric utilities in the regions where our companies' generating facilities operate,

- using natural and energy resources in a sustainable way in generating and transmitting electricity and heat,
- support research on environmental protection in the electricity sector,
- implement only science-based measures and prioritise the best existing technologies to minimise environmental impacts of our generation facilities,
- factor in potential environmental risks when taking strategic, management or investment decisions,
- operate in the territories and water bodies of high environmental importance only in exceptional cases subject to specific decisions by government authorities,
- minimise waste and comply with environmental standards for storage and disposal,
- prioritising preventive measures over response to adverse environmental impact,
- maintain open access to environmental information and in case of emergencies immediately inform all stakeholders on their environmental implications and response,
- provide open access to the results of environmental monitoring of operating branches of our generating companies, and
- improve the system of environmental stewardship in line with the best international practices and standards.

The Environmental Management System



Fig. 31. Pravoberezhnaya CHP

(ESM) compliant with ISO 14001:2004 (as certificated by independent specialised auditor firms) is the key mechanism used by our generating companies to manage environmental risks. All business units of our companies have been consistently implementing it since 2007.

In the reporting period (2012–2013), we completed the certification of the last business units of OAO TGC-1: Kolsky Branch in 2012, and Karelsky in 2013. The ISO 14001:2004 Environmental Management System has been put in place in all units

of OAO Mosenergo and OAO TGC-1, and in five branches of OAO OGK-2: Stavropolskaya GRES, Serovskaya GRES, Pskovskaya GRES, Surgutskaya GRES, and Troitskaya GRES.



Fig. 32. Serovskaya GRES

Supervisory audits in 2013 confirmed OAO Mosenergo's compliance with ISO 14001:2004; the company was approved for certificate renewal. All branches of OAO TGC-1 have in place valid certificates and are planning to renew them later. In 2013, OAO OGK-2 suspended the implementation of the environmental management system in its branches and did not run any audit. We will maintain and expand the environmental management system in branches of OAO OGK-2 going forward, but are planning to abandon the formal certification of the system due to its high financial costs and the absence of regulatory requirements from regulatory authorities.

Our companies consistently take targeted environmental measures in a number of areas:

- construction and commissioning of high performance CCGT generation units with advanced low emission gas turbine combustion chambers to reduce specific emissions of pollutants (nitrogen oxides, carbon dioxide, solid particles, sulphur oxide and greenhouse gases);
- retrofitting and upgrades of hydro turbine equipment using environmentally friendly materials and construction of run-around systems for process water supply at power plants to reduce chemical and thermal pollution of water bodies;

- retrofitting of heat grids using new heat insulation materials that more than halve heat losses to minimise thermal pollution of the environment and ensure sustainable use of energy resources;
- construction of new and retrofitting of existing treatment facilities to prevent discharge of polluted waste water into surface waters;
- safe treatment of operating waste and reduction of waste from solid fuel combustion; and
- installation of fish protection system at water withdrawal facilities to prevent damage to fauna.

We prioritise projects that address several issues at a time. E.g. 660 MW coal dust generation unit No. 10 (STU-660) is being constructed at Troitskaya GRES, a branch of OAO OGK-2. Unlike other generation units, it will use higher quality Kuzbass coal as process fuel, rather than coal from the Ekibastuz coal basin in the Republic of Kazakhstan. This will cut emissions, while at same time reducing the amount of bottom ash waste intended for disposal and the specific water consumption by the branch. Moreover, this unit provides for potential dry ash (fly ash) screening, which will enable additional reduction of disposed waste by reclassifying some ash from "waste" into "product". Additionally, Generation Unit No. 10 will desulphurise emissions, which will considerably reduce the amount of sulphur in emissions.



Fig. 33. Construction of a new coal dust generation unit at Troitskaya GRES

We also believe that a responsible approach to environmental issues implies that we should be as open as possible and should actively engage all stakeholders. To this end, we provide regular coverage of all issues related to the environmental impacts of our companies and measures taken by them in relevant sections of our corporate websites and work on the following issues on an ongoing basis:

- train and enhance environmental skills and awareness of employees,
- interact with federal and municipal authorities, regulating and non-governmental organisations, and with other stakeholders on environmental issues,
- inform suppliers and contractors of our environmental requirements and standards and follow up on their implementation,
- prevent emergency situations with environmental implications, and
- allocate and distribute financial resources to implement our environmental policy.

In our opinion, the most notable achievements by our companies in the reporting period (2012–2013) in terms of stakeholder engagement on the environment are as follows:

**OAo Mosenergo:** active media coverage of environmental aspects of the company's operations, including reports by TVC TV channel on the upgrade and environmen-

tal activities in such branches as TPP-20, TPP-26, TPP-9, and TPP-27 and on energy safety measures at TPP-21; participation in the environmental award organised by the Government of Moscow in 2013 in the Best Completed Project Using Green and Energy Saving Technologies (OAo Mosenergo presented its project Implementation and Initial Operation of CCGT-420 Unit at TPP-26, a Branch of OAo Mosenergo.

**OAo TGC-1:** successful interaction with the Finnish and Norwegian sides on adjusting the water level and preserving the ecosystem in Lake Inari; maximum disclosure, including production of a special film, on the resumed operation of Matkozhnenskaya HPP; and an address to children and teenagers on energy, energy saving and environmental issues via the myenergy.ru web-site.

**OAo OGK-2:** maximum disclosure via local mass media and direct contacts with local communities on the environmental situation at Troitskaya GRES; signing of an Agreement for Environmental Cooperation with the Government of the Sverdlovsk Region.

Each generating company also drafts and implements an annual Environmental Plan to reduce the adverse environmental impacts in the areas where power plants operate and to ensure sustainable use of natural resources.

### Fuel use and energy efficiency

Our heat and electricity generation process predetermines our use of various fuels (gas, fuel oil and coal) as the core feedstock and our considerable water consumption for process and auxiliary purposes. All feedstock and materials used by us meet the existing national standards and do not contain polychlorinated biphenyls (PCB) or similar substances.

Energy consumption and energy efficiency management in our generating companies is in line with the requirements of Federal Law No. 261-FZ On Energy Saving and Enhanced Energy Efficiency as Well as Amendments to Certain Legislative Acts of the Russian Federation of 23 November 2009. All our generating companies are in compliance with the requirements set out

in Part 1 of Article 16 of Federal Law No. 261-FZ (for organisations that produce or transport water, natural gas, heat energy, electricity, natural gas, oil, coal, or oil products, process natural gas or oil, or transport oil or oil products) and run energy audits of their facilities. All our generating companies were issued energy certificates based on the results of the energy audits.

|                        | Issued by                    | Certificate No.    | Issue date    |
|------------------------|------------------------------|--------------------|---------------|
| <b>Mosenergo</b>       | OOO Intekhenergo-engineering | SRO-092-2012.12-07 | December 2012 |
| <b>TGC-1</b>           | ZAO ECM-Service              | 338-GPE/12         | December 2011 |
| <b>Murmanskaya CHP</b> | OAo A1-Energo                | 338-GPE/12         | December 2011 |
| <b>OGK-2</b>           | ZAO ECM-Service              | 251-GPE/12         | December 2011 |

As their principal fuel, OAo Mosenergo's power plants use gas, which counts among the most environmentally friendly fossil fuels. As compared to other fuels, gas, when burnt, generates much less air pollutants. Apart from gas, two thermal power plants in the Moscow Region (TPP-17 and TPP-22) can use solid fuels as their principal and backup fuels. Before 2005,

the fuel mix for the Moscow Region had included both peat and coal as solid fuels, and only coal onwards. Most power plants of OAo Mosenergo use fuel oil as emergency and backup fuel.

All CHPs of OAo TGC-1 located in Saint Petersburg and in the Leningrad Region, as well as Petrozavodskaya CHP in Karelia use gas as their principal fuel, and fuel

oil as their backup fuel. The only exception is Dubrovskaya CHP in the Leningrad Region that uses coal as its backup fuel. Apatitskaya CHP also uses coal as its principal fuel. OAo TGC-1 also stands apart in that its output (unlike OAo Mosenergo and OAo OGK-2) features a significant share of hydro generation:

|       | 2012                     |                            |                     | 2013                     |                            |                     |
|-------|--------------------------|----------------------------|---------------------|--------------------------|----------------------------|---------------------|
|       | HPP output, thousand MWh | Total output, thousand MWh | HPP share in output | HPP output, thousand MWh | Total output, thousand MWh | HPP share in output |
| TGC-1 | 13,499                   | 30,389                     | 44.4%               | 11,990                   | 29,303                     | 40.9%               |

As part of the Year of Ecology announced by OAo Gazprom, OAo Mosenergo held a children's drawings competition Mosenergo Cares about the Environment, and a photo competition, Sun, Air and Water. Children who participated in the drawings competition were invited to a tour of TPP-20 and were presented with souvenirs.



Fig. 34. Rajakoski HPP



Fig. 35. Krasnoyarskaya GRES-2

The fuel mix of OAO OGK-2 includes both gas and coal. In particular, Surgutskaya GRES-1, the 2nd stage of Ryazanskaya GRES, Stavropolskaya GRES, Kirishskaya GRES, Pskovskaya GRES and Adlerskaya TPP use gas as their principal and backup fuel. Coal is the principal fuel for the 1st stage of Ryazanskaya GRES, Troitskaya GRES, and

Krasnoyarskaya GRES-2. Novochoerkasskaya GRES, Cherepovetskaya GRES and Serovskaya GRES can use both gas and coal for heat and electricity generation, enabling adjustments of the fuel mix to fluctuations in prices for these fuels.

Five power plants of OAO OGK-2 (Novochoerkasskaya GRES, Serovskaya GRES,

Troitskaya GRES, Krasnoyarskaya GRES-2, and Cherepovetskaya GRES) also can use small amounts of fuel oil as priming and startup fuel, and four of its stations (Ryazanskaya GRES, Stavropolskaya GRES, Kirishskaya GRES, and Pskovskaya GRES) also use fuel oil as reserve fuel.

| Fuel consumption:         | 2012   | 2013   |
|---------------------------|--------|--------|
| <b>Mosenergo</b>          |        |        |
| Gas, mmcm                 | 21,514 | 20,555 |
| Fuel oil, thousand tonnes | 213    | 11     |
| Coal, thousand tonnes     | 322    | 565    |
| <b>TGC-1</b>              |        |        |
| Gas, mmcm                 | 6,398  | 6,307  |
| Fuel oil, thousand tonnes | 335    | 262    |
| including Murmanskaya CHP | 265    | 260    |
| Coal, thousand tonnes     | 366    | 378    |
| <b>OGK-2</b>              |        |        |
| Gas, mmcm                 | 14,673 | 14,118 |
| Fuel oil, thousand tonnes | 169    | 45     |
| Coal, thousand tonnes     | 14,967 | 13,109 |

We view fuel supply to our companies as a key driver of their sustainable development. For this reason, we enter into

long-term agreements for the supply of key fuels in the requires amounts and build up sufficient stocks of backup fuels in line

with the orders and guidance of the Russian Ministry of Energy.

Fuel rate<sup>21</sup>:

|   | 2012   |                                      | 2013   |                                      |
|---|--|--------------------------------------|--|--------------------------------------|
|   | Fuel rate for electricity output, g. o. e. / kWh | Fuel rate for heat output, kg / Gcal | Fuel rate for electricity output, g. o. e. / kWh | Fuel rate for heat output, kg / Gcal |
| <b>Mosenergo</b>                          | 247.9  | 166.0                                | 240.9  | 165.5                                |
| Gas                                       | 247.9  | 166.0                                | 240.9  | 165.5                                |
| <b>TGC-1</b>                              | 284.1  | 139.8                                | 275.6  | 138.8                                |
| Gas                                       | 283.3  | 139.6                                | 274.6  | 138.4                                |
| Coal                                      | 321.0  | 143.6                                | 325.9  | 145.9                                |
| Fuel oil<br>( <i>AO Murmanskaya CHP</i> ) | –  | 174.2                                | –  | 174.6                                |
| <b>OGK-2</b>                              | 352.7  | 153.5                                | 345.1  | 152.9                                |
| Gas                                       | 325.3  | 144.2                                | 316.9  | 144.4                                |
| Coal                                      | 417.7  | 172.8                                | 418.8  | 173.5                                |
| Combined fuels (gas + coal) <sup>22</sup> | 384.8  | 185.7                                | 382.5  | 187.2                                |

Our generating companies fully cover their heat and electricity consumption by their own output.

## Heat and electricity consumption for auxiliary purposes:

|                              | 2012  |   | 2013  |   |
|------------------------------|---|---|---|---|
|                              | Electricity consumption for auxiliary purposes, billion kWh | Heat consumption for auxiliary purposes, billion Gcal | Electricity consumption for auxiliary purposes, billion kWh | Heat consumption for auxiliary purposes, billion Gcal |
| Mosenergo                    | 4.7   | 0.491   | 4.6   | 0.362   |
| TGC-1                        | 0.92  | 0.832   | 0.92  | 0.888   |
| including<br>Murmanskaya CHP | 0.02  | 0.20  | 0.02  | 0.20  |
| OGK-2                        | 4.4   | 0.156   | 4.1   | 0.204   |

Energy losses during heat and electricity transmission are another important aspect that describes the companies' energy efficiency performance. OAO Mosenergo has no overhead or underground transmission or distribution electric grids on its balance sheet, but it has heating grids leased to OAO MOEK on a paid basis. As of 31 December 2013, their

combined length was 552 km. OAO TGC-1 has no electricity or heat transmission grids on its balance sheet. At the same time, we have data on the actual heat losses of grids owned by subsidiaries of OAO TGC-1. OAO TGC-1 has no heat or electricity grids on its balance sheet, but we have data on the actual losses in grids owned by subsidiaries of OAO TGC-1.

OAO OGK-2 has no overhead or underground electric grids on its balance sheet, but it has heating grids operated by the company's branches (Novocherkasskaya GRES, Pskovskaya GRES, Ryazanskaya GRES, Serovskaya GRES, Stavropolskaya GRES, Surgutskaya GRES, Cherepovetskaya GRES) with their combined length exceeding 116 km.

We consider the fuel rate to be the key energy efficiency metric for generating companies. We are also happy to highlight that our companies have seen their fuel rate for electricity output steadily decline

in the recent years. We attribute this decline to the growing generation share of new and upgraded units with lower specific costs.

**Under Russia's Energy Strategy to 2030, energy saving initiatives in the Russian heat supply industry will be pursued in the following areas:**

- in heat generation: increasing the efficiency ratio of boilers and generation units,
- in heat transmission systems: reducing heat and heat transfer medium losses by retrofitting heating grids,
- in heat consumption systems: metering the quantity and controlling the quality of heat consumed.

These initiatives will have at least halved specific heat losses (from 19% to 8–10% by the end of the third stage of Russia's Energy Strategy to 2030), which will result in fuel savings of at least 40 mm t. o. e. in Russia by 2030.

## Heat losses in grids on the balance sheet of our generating companies and their subsidiaries, millions Gcal:

|   | 2012          | 2013     |
|---|---------------|----------|
| Heating grids of OAO Mosenergo (leased to OAO MOEK)                   | Not available | 0.052    |
| Heating grids of OOO TSK Mosenergo (100% subsidiary of OAO Mosenergo) | 0.100         | 0.192    |
| OOO St. Petersburg Heating Grid (75% subsidiary of OAO TGC-1)         | 1.584         | 1.514    |
| OAO Murmanskaya CHP   | 0.079704      | 0.083166 |
| Heating grids of OAO OGK-2  | Not available | 0.106534 |

21 We calculate fuel rate only for the principal fuel for each of our power plants; fuel oil, which is used in small amounts as backup, startup and emergency fuel is not factored in to the fuel rate calculations.

22 In the reporting period (2012–2013), Novocherkasskaya GRES, Cherepovetskaya GRES and Serovskaya GRES of OAO OGK-2 used both gas and coal for heat and electricity generation to adjust their fuel mixes to fluctuations in prices for these fuels.

### Energy efficiency enhancement

OAO Mosenergo has drafted and approved a specialised Energy Saving Programme for 2010–2015 as part of the Lean Production programme and pursuant to Federal Law No. 261-FZ of 23 November 2009, Resolutions No. 1225 On Require-

ments to Regional and Municipal Programmes on Energy Saving and Energy Efficiency Enhancement of 31 December 2009 and No. 340 On the Procedure for Establishing Requirements to Energy Saving and Energy Efficiency Enhancement for

Regulated Organisations of 15 May 2010 by the Russian Government. In the reporting period (2012–2013), OAO Mosenergo took the following energy saving measures as part of this programme:

Following the successful pilot, the Company decided to roll out the programme across all CHP of Nevsky Branch, starting from Q1 2012. In 2012, OAO TGC-1 also adopted and approved its own Energy Saving

and Energy Efficiency Enhancement Programme for 2013–2015 pursuant to Federal Law No. 261-FZ of 23 November 2009 and Resolutions No. 1225 of 31 December 2009 and No. 340 of 15 May 2010.

| Energy saving measures under approved programmes of OAO Mosenergo  | Savings achieved |               |              |                 |                |               |              |                 |
|--|------------------|---------------|--------------|-----------------|----------------|---------------|--------------|-----------------|
|  | 2012             |               |              |                 | 2013           |               |              |                 |
|  | thou. t. o. e.   | mm kWh        | thou. Gcal   | RUB mm          | thou. t. o. e. | mm kWh        | thou. Gcal   | RUB mm          |
| <b>OAO Mosenergo's Energy Saving Programme for 2010-2015</b>   |                  |               |              |                 |                |               |              |                 |
| 1. Strategic measures (commissioning CCGT-based equipment; developing district heating, etc.)                                | 531.78           | 167.39        | –            | 2,006.49        | 633.62         | 140.92        | –            | 2,456.66        |
| 1.1. Use of CCGT units at TPP-21, 26 and 27  | 397.54           | 167.39        | –            | 1,536.65        | 401.54         | 140.92        | –            | 1,602.61        |
| 1.2. Transfer of heat loads from Heat Distribution Networks and District Heating Plants of OAO MOEK at TPPs of OAO Mosenergo | 134.24           | –             | –            | 469.84          | 232.08         | –             | –            | 854.05          |
| 2. Measures to reduce specific losses and auxiliary consumption  | –                | 78.20         | –            | 67.85           | –              | 108.06        | –            | 95.79           |
| 3. Maintenance   | 8.40             | 22.90         | 22.27        | 60.68           | 7.57           | 19.76         | 10.64        | 18.76           |
| <b>Economic effect from energy efficiency measures</b>   | <b>540.18</b>    | <b>268.48</b> | <b>22.27</b> | <b>2,135.02</b> | <b>641.19</b>  | <b>268.74</b> | <b>10.64</b> | <b>2,571.21</b> |

In 2011, we decided to replicate the successful experience of OAO Mosenergo at TGC-1. Severnaya CHP was selected for a pilot under the Lean Production programme in OAO TGC-1. In 2011 alone, the programme allowed Severnaya CHP not only eliminate excessive fuel consumption but even capture fuel savings:

**Fuel savings by Severnaya CHPP (pilot project) t. o. e.**

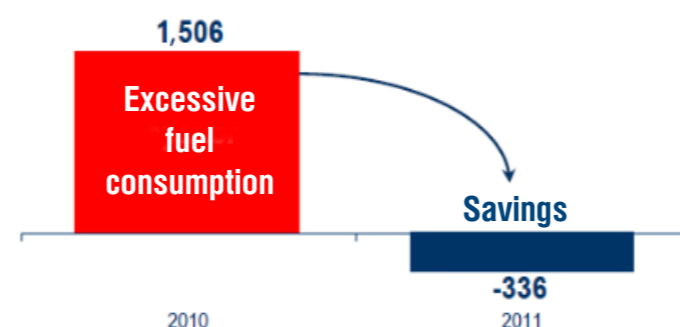


Fig. 36. Severnaya CHP

| Energy saving measures under approved programmes of OAO TGC-1   | Savings achieved                        |             |               |               |   |             |               |              |
|---|---|-------------|---------------|---------------|---|-------------|---------------|--------------|
|   | 2012                                    |             |               |               | 2013                                    |             |               |              |
|   | thou.<br>tonnes of<br>reference<br>fuel | mm<br>kWh   | thou.<br>Gcal | RUB<br>mm     | thou.<br>tonnes of<br>reference<br>fuel | mm<br>kWh   | thou.<br>Gcal | RUB<br>mm    |
| <b>Lean Production programme</b>  |   |             |               |               |   |             |               |              |
| 1. Replacement of a standard Main Oil Pump OMN (NPS65-35-500) for an Eco Vizor EX-156 displacement pump at Vasileostrovskaya CHP.   | –                                       | –           | –             | –             | –                                       | 0.28        | –             | 0.29         |
| <b>Energy Saving and Energy Efficiency Enhancement Programme for 2013–2015</b>  |   |             |               |               |   |             |               |              |
| 1. Deployment of new high-tech equipment  | 195.00                                  | 3.31        | –             | 661.90        | –                                       | 1.66        | –             | 1.64         |
| 1.1. <i>Deployment CCGT BL-2 at Pervomayskaya CHP, CCGT BL-2 at Pravoberezhnaya CHP, Hydropower Unit GA-3 at Lesogorskaya HPP. Hydropower Unit GA-2 at Svetogorskaya HPP, and Hydropower Unit GA-4 at Lesogorskaya HPP</i>                      | 195.00                                  | 3.31        | –             | 661.90        | –                                       | 1.66        | –             | 1.64         |
| 2. Technical re-equipment and retrofitting of existing core generation and auxiliary equipment  | 0.66                                    | 0.11        | –             | 2.33          | 1.05                                    | 0.15        | –             | 2.80         |
| 2.1. <i>Upgrade of Turbine Unit No. 7, including replacement of medium-pressure rotors and installation of honeycomb seals, and technical re-equipment of Peak Water Boiler PTVM-100 of Unit No. 3 at Avtovskaya CHP</i>                        | 0.66                                    | –           | –             | 2.24          | –                                       | –           | –             | –            |
| 2.2. <i>Technical re-equipment of Peak Water Boiler PTVM-100 of Unit No. 4 at Avtovskaya CHP (new equipment purchased)</i>  | –                                       | –           | –             | –             | –                                       | –           | –             | –            |
| 2.3. <i>Retrofitting of district heating unit and cooling tower BG-1600 No. 2 at Petrozavodskaya CHP</i>  | –                                       | –           | –             | –             | 0.63                                    | –           | –             | 2.15         |
| 2.4. <i>Retrofitting and introduction of frequency control for heating grid and boiler condensate pumps (BCP) 5, 6, 7, 8, and 14 and Network Pump No. 8 and replacement of the heating grid pipeline using PP foam pipes at Apatitskaya CHP</i> | –                                       | –           | –             | –             | 0.42                                    | –           | –             | 0.41         |
| 2.5. <i>Replacement of overhead high-voltage circuit breakers for four SF6 circuit breakers, installation of energy saving security perimeter lighting at Apatitskaya CHP and Niva HPP-1</i>  | –                                       | 0.10        | –             | 0.07          | –                                       | –           | –             | –            |
| 2.6. <i>Installation of frequency converters at delivery pumps in the boiler turbine department and at network pumps of Pump Stations Nos. 8 and 9 in OAO Murmanskaya CHP</i>   | –                                       | 0.01        | –             | 0.02          | –                                       | 0.15        | –             | 0.24         |
| 3. Measures taken as part of the repair programme and other organisational and technical measures   | 16.97                                   | 1.87        | 0.06          | 42.32         | 10.58                                   | 1.32        | 0.32          | 37.68        |
| 3.1. <i>In Nevsky Branch (45 improvements)</i>  | 16.40                                   | 0.90        | –             | 39.66         | 10.52                                   | 1.12        | –             | 36.72        |
| 3.2. <i>In Karelsky Branch</i>  | 0.38                                    | 0.01        | –             | 1.28          | –                                       | –           | –             | –            |
| 3.3. <i>In Kolsky Branch</i>  | 0.18                                    | 0.93        | –             | 1.18          | –                                       | –           | –             | –            |
| 3.4. <i>In OAO Murmanskaya CHP</i>  | 0.01                                    | 0.03        | 0.06          | 0.20          | 0.06                                    | 0.20        | 0.32          | 0.96         |
| <b>Economic effect from energy efficiency measures</b>  | <b>212.63</b>                           | <b>5.29</b> | <b>0.06</b>   | <b>706.55</b> | <b>11.63</b>                            | <b>3.41</b> | <b>0.32</b>   | <b>42.41</b> |

OAO OGK-2 established a business unit, *Quality Management System and Business Solution Assessment Project Centre*, responsible for enhancing the company's operating efficiency. In particular, every year starting from 2013, the Centre has been preparing a list of measures to enhance energy efficiency of core and auxiliary equipment in its operating branches. In line with the approved procedures, every energy saving initiative is to be systemised and a relevant certificate must be drafted and entered into the register. Then the register is submitted to the Steering Committee for approval, and a source of financing is determined for every cost project. The overall assessment of the resulting effect is made at the year end.

**Cherepovetskaya GRES, a branch of OAO OGK-2, is constructing the fourth 420 MW generation unit of its CCGT-420 with a cooling tower. The specific reference fuel consumption by the new CCGT unit will be 30% lower than in standard thermal power units.**



## Выбросы парниковых газов и их эквивалентов:

|                                      | 2012                 |                            | 2013                 |                            |
|--------------------------------------|----------------------|----------------------------|----------------------|----------------------------|
|                                      | tonnes               | CO <sub>2</sub> equivalent | tonnes               | CO <sub>2</sub> equivalent |
| <b>Mosenergo</b>                     |                      |                            |                      |                            |
| CO <sub>2</sub>                      | 41,496,429.2         | 41,496,429.2               | 40,513,210.8         | 40,513,210.8               |
| CH <sub>4</sub>                      | 32.4                 | 681.2                      | 13.3                 | 279.6                      |
| N <sub>2</sub> O                     | 88.2                 | 27,326.8                   | 69.7                 | 21,610.1                   |
| SF <sub>6</sub>                      | 0.3                  | 6,099.0                    | 0.3                  | 7,024.2                    |
| <b>Total</b>                         | <b>41,496,550.1</b>  | <b>41,530,536.2</b>        | <b>40,513,294.1</b>  | <b>40,542,124.7</b>        |
| <b>TGC-1</b>                         |                      |                            |                      |                            |
| CO <sub>2</sub>                      | 12,868,475.8         | 12,868,475.8               | 13,569,326.2         | 13,569,326.2               |
| CH <sub>4</sub>                      | 6.9                  | 144.1                      | 1.2                  | 25.0                       |
| N <sub>2</sub> O                     | 20.8                 | 6,455.8                    | 18.9                 | 5,857.5                    |
| SF <sub>6</sub>                      | 19.7                 | 469,874.0                  | 62.8                 | 1,501,589.2 <sup>23</sup>  |
| <b>Total</b>                         | <b>12,868,523.2</b>  | <b>13,344,949.7</b>        | <b>13,569,409.1</b>  | <b>15,076,797.9</b>        |
| <b>Murmanskaya CHP</b>               |                      |                            |                      |                            |
| CO <sub>2</sub>                      | 821,848.8            | 821,848.8                  | 782,017.2            | 782,017.2                  |
| CH <sub>4</sub>                      | 31.69309             | 665.55                     | 30.15705             | 633.298108                 |
| N <sub>2</sub> O                     | 6.33817              | 1,964.97                   | 6.03141              | 1,869.737271               |
| SF <sub>6</sub>                      | –                    | –                          | –                    | –                          |
| <b>Total</b>                         | <b>821,886.83</b>    | <b>824,479.33</b>          | <b>782,053.39</b>    | <b>784,520.24</b>          |
| <b>Total TGC-1 + Murmanskaya CHP</b> | <b>13,690,410.03</b> | <b>14,169,429.03</b>       | <b>14,351,462.49</b> | <b>15,861,318.14</b>       |
| <b>OGK-2</b>                         |                      |                            |                      |                            |
| CO <sub>2</sub>                      | 53,283,669.2         | 53,283,669.2               | 48,650,116.1         | 48,650,116.1               |
| CH <sub>4</sub>                      | 1,080.2              | 22,685.1                   | 927.2                | 9,470.3                    |
| N <sub>2</sub> O                     | 540.5                | 167,546.6                  | 341.9                | 106,002.6                  |
| <b>Total</b>                         | <b>53,285,289.9</b>  | <b>53,473,900.9</b>        | <b>48,651,385.2</b>  | <b>48,775,589.0</b>        |

## Pollutant and GHG emissions

Air pollutants are harmful for the environment if their content gets above the natural levels and beyond regulatory limits. Therefore, we believe it important to monitor the environmental impacts of our business and consistently take measures to cut emissions.

Power plants of our generating companies have automated systems to monitor quality and quantities of pollutant emissions. The data gathered by the system are used both for internal control and informed decision-making on management, and fed to specialised supervisory and regulatory authorities responsible for management of natural resources and environmental protection.

In the event of meteorological conditions conducive to dangerous air pollution levels, our power plants take emergency measures to reduce pollutant emissions.

Apart from emergency pollutant emission cuts, our power plants are also installing low-toxicity burners, flue gas recirculation circuits, two-stage combustion circuits and other high performance devices in their power generation and water boilers.

In addition to the automated pollutant emission monitoring system, the power plants regularly monitor the content and quantities of pollutant emissions in line with the schedule (approved by supervisory authorities) of monitoring compliance with regulatory target emission rates for each source of emissions. Accredited environmental laboratories monitor the air condition in the areas covered by power plants, on a regular basis, both at emission sources and at selected points within relevant localities.

Our generating companies analyse the data on intensity and composition of pollutant emissions, the condition of devices and equipment, and the range of measures taken, and study the best existing solutions to inform planning of air protection measures.

All fuels used by our companies are fossil fuels. For this reason, we do not separately discuss emissions from generation using these fuels. We also do not assess our GHG emissions as a part of the country's quotas under the Kyoto Protocol, as at the 18th session of the Conference of the Parties to the United Nations Framework Convention on Cli-

mate Change (UNFCCC) held in Doha in December 2012, Russia withdrew its commitment to cut GHG emissions. In the reporting period (2012–2013), our companies did not buy or sell any carbon quotas as the country has no domestic carbon quota market and Russian companies have no access to the international quota trading market.

All types of pollutant emissions by our power plants are limited by the Target Emission Rates (TER) indicated in special authorisations issued for stationary pollution sources under Paragraph 1 of Article 14 of Federal Law No. 96-FZ On Protection of Ambient Air.



Fig. 37. Cherepovetskaya GRES

The amount of pollutant emissions and their intensity per unit of output by all generation capacities of the Company:

|  | 2012             |  | 2013             |  |
|--|------------------|--|------------------|--|
|  | Total, tonnes    | Per total output unit, tonnes / thousand MWh | Total, tonnes    | Per total output unit, tonnes / thousand MWh |
| <b>Mosenergo</b>                                 |                  |  |                  |  |
| solid  | 871.42           | 0.01   | 3,214.46         | 0.05   |
| gaseous and liquid                               | 54,103.59        | 0.88   | 48,998.67        | 0.84   |
| <i>Including:</i>                                |                  |  |                  |  |
| nitrogen oxides (in NO <sub>2</sub> )            | 40,749.66        | 0.66   | 40,072.01        | 0.68   |
| carbon oxide                                     | 1,803.65         | 0.03   | 888.04           | 0.02   |
| sulphur dioxide                                  | 11,527.27        | 0.19   | 8,017.74         | 0.14   |
| hydrocarbons (net of volatile organic compounds) | 4.14             | –  | 4.00             | –  |
| volatile organic compounds                       | 17.87            | –  | 16.51            | –  |
| benzapyrene                                      | 0.02             | –  | 0.02             | –  |
| other gaseous and liquid                         | 1.01             | –  | 0.38             | –  |
| <b>Total</b>                                     | <b>54,975.01</b> | <b>0.89</b>                                  | <b>52,213.13</b> | <b>0.89</b>                                  |
| <b>TGC-1</b>                                     |                  |  |                  |  |
| solid  | 2,386.58         | 0.08   | 2,473.61         | 0.08   |
| gaseous and liquid                               | 37,189.75        | 1.22   | 30,712.53        | 1.05   |
| <i>Including:</i>                                |                  |  |                  |  |
| nitrogen oxides (in NO <sub>2</sub> )            | 21,900.41        | 0.72   | 18,912.78        | 0.65   |
| carbon oxide                                     | 3,330.00         | 0.11   | 5,489.24         | 0.19   |
| sulphur dioxide                                  | 11,504.33        | 0.38   | 6,262.54         | 0.21   |
| hydrocarbons (net of volatile organic compounds) | 0.68             | –  | 0.16             | –  |
| volatile organic compounds                       | 16.35            | –  | 15.25            | –  |
| benzapyrene                                      | –                | –  | –                | –  |
| other gaseous and liquid                         | 57.56            | –  | 32.70            | –  |
| <b>Total</b>                                     | <b>39,576.33</b> | <b>1.30</b>                                  | <b>33,186.14</b> | <b>1.13</b>                                  |

|  | 2012              |  | 2013              |  |
|--|-------------------|--|-------------------|--|
|  | Total, tonnes     | Per total output unit, tonnes / thousand MWh | Total, tonnes     | Per total output unit, tonnes / thousand MWh |
| <b>Murmanskaya CHP</b>                           |                   |  |                   |  |
| solid  | 70.414            | 0.03   | 83.586            | 0.03   |
| gaseous and liquid                               | 14,901.68         | 5.59   | 12,518.91         | 4.94   |
| <i>Including:</i>                                |                   |  |                   |  |
| nitrogen oxides (in NO <sub>2</sub> )            | 1,648.84          | 0.62   | 1,626.75          | 0.64   |
| carbon oxide                                     | 64.779            | 0.02   | 61.86             | 0.024  |
| sulphur dioxide                                  | 13,184.15         | 4.95   | 10,819.59         | 4.28   |
| hydrocarbons (net of volatile organic compounds) | –                 | –  | –                 | –  |
| volatile organic compounds                       | 3.89              | –  | 10.68             | –  |
| benzapyrene                                      | –                 | –  | –                 | –  |
| other gaseous and liquid                         | 0.014             | –  | 0.04              | –  |
| <b>Total</b>                                     | <b>14,972.09</b>  | <b>5.62</b>                                  | <b>12,602.49</b>  | <b>4.97</b>                                  |
| <b>Total TGC-1 + Murmanskaya CHP</b>             | <b>54,548.42</b>  | <b>6.92</b>                                  | <b>45,788.64</b>  | <b>6.10</b>                                  |
| <b>OGK-2</b>                                     |                   |  |                   |  |
| solid  | 98,685.07         | 1.31   | 80,034.47         | 1.13   |
| gaseous and liquid                               | 294,745.41        | 3.92   | 267,139.61        | 3.78   |
| <i>Including:</i>                                |                   |  |                   |  |
| nitrogen oxides (in NO <sub>2</sub> )            | 90,670.79         | 1.21   | 70,409.36         | 1.00   |
| carbon oxide                                     | 39,385.25         | 0.52   | 32,779.57         | 0.46   |
| sulphur dioxide                                  | 163,179.41        | 2.17   | 162,775.00        | 2.30   |
| hydrocarbons (net of volatile organic compounds) | 0.45              | –  | 4.04              | –  |
| volatile organic compounds                       | 323.84            | –  | 192.75            | –  |
| benzapyrene                                      | 0.02              | –  | 0.02              | –  |
| other gaseous and liquid                         | 1,185.67          | 0.02   | 978.89            | 0.01   |
| <b>Total</b>                                     | <b>393,430.48</b> | <b>5.23</b>                                  | <b>347,174.08</b> | <b>4.91</b>                                  |

All generating capacities of OAO Mosenergo and OAO TGC-2 generate electricity and heat by firing hydrocarbon fuel, while in OAO TGC-1 a considerable share in OAO TGC-1's output is provided by hydro generation. For this reason, we discuss pollutant emissions per unit of output by hydrocarbon-fired electricity and heat generation capacities (CHP) separately only for OAO TGC-1.

**Emissions of major pollutants and their intensity per unit of output by hydrocarbon-fired electricity and heat generating capacities (CHP) for OAO TGC-1 (net of OAO Murmanskaya CHP).**

|   | 2012             |  | 2013             |  |
|---|------------------|--|------------------|--|
|   | Total, tonnes    | Per total output unit, tonnes / thousand MWh | Total, tonnes    | Per total output unit, tonnes / thousand MWh |
| <b>TGC-1</b>  |                  |  |                  |  |
| solid   | 2,386.58         | 0.14   | 2,473.61         | 0.14   |
| gaseous and liquid                                      | 37,189.75        | 2.20   | 30,712.53        | 1.77   |
| <i>Including:</i>                                       |                  |  |                  |  |
| <i>nitrogen oxides (in NO<sub>2</sub>)</i>              | <i>21,900.41</i> | <i>1.30</i>                                  | <i>18,912.78</i> | <i>1.09</i>                                  |
| <i>carbon oxide</i>                                     | <i>3,330.00</i>  | <i>0.20</i>                                  | <i>5,489.24</i>  | <i>0.32</i>                                  |
| <i>sulphur dioxide</i>                                  | <i>11,504.33</i> | <i>0.68</i>                                  | <i>6,262.54</i>  | <i>0.36</i>                                  |
| <i>hydrocarbons (net of volatile organic compounds)</i> | <i>0.68</i>      | <i>–</i>                                     | <i>0.16</i>      | <i>–</i>                                     |
| <i>volatile organic compounds</i>                       | <i>16.35</i>     | <i>–</i>                                     | <i>15.25</i>     | <i>–</i>                                     |
| <i>benzapyrene</i>                                      | <i>–</i>         | <i>–</i>                                     | <i>–</i>         | <i>–</i>                                     |
| <i>other gaseous and liquid</i>                         | <i>57.56</i>     | <i>–</i>                                     | <i>32.70</i>     | <i>–</i>                                     |
| <b>Total</b>  | <b>39,575.33</b> | <b>2.34</b>                                  | <b>33,186.14</b> | <b>1.91</b>                                  |

In response to ever growing consumer demand, we are implementing ambitious investment projects on an annual basis by launching new high performance generation capacity and decommissioning outdated and low performance facilities. As a consequence, our generation becomes more environmentally friendly and fuel efficient on average. For this reason, we are considering further changes in the total emissions per output unit. Each of our generating companies runs regular environmental campaigns to reduce pollutant and greenhouse gas emissions by old facilities. To measure our progress in this area we separately track changes in emissions from base year (2008) for capacity that had been owned by the Company in the base year and is still owned today.

**Ryazanskaya GRES, a branch of OAO OGK-2, is completing retrofitting its coal dust generation unit No. 2, with a capacity increase to 330 MW (STU-330). SRFC for the generation unit after retrofitting will be 328 g/kWh. Before retrofitting, its marginal reference fuel consumption was 389 g/kWh. As a result, specific pollutant emissions will be reduced by 15.7%.**

We are committed to reducing greenhouse and pollutant gas emissions by our generating facilities. In the reporting period (2012–2013), our efforts included various activities such as:

- maintenance, set-up and adjustment of operating conditions for fuel combustion equipment;
- retrofitting and upgrade of gas recirculation systems; and

- deployment of environmental emission monitoring and gas analysis systems.

We are also implementing research projects and deploying new engineering solutions to make the ambient air cleaner. Among other things, in 2013 OAO Mosenergo and JSC SRI Atmosphere developed a Method for Assessing Gross Pollutant Emissions by Boilers of Thermal Power Plants. RD 34.02.305-98.

G4-EN19

**With generation boilers of OAO Mosenergo's power plants being equipped with an automated environmental monitoring system, we are able to track the content of pollutants in flue gases on-line and where necessary promptly take standard measures to reduce emissions. As a result, in the reporting period boiler emission ratios were never exceeded for any specific ingredient.**

Novocherkasskaya GRES of OAO OGK-2 is currently completing the construction of a 330 MW (STU-330) with a circulating fluidised-bed (CFB) boiler. This project is unique in that, apart from using a cooling tower to reduce water consumption, it provides for a coal firing technology that is an optimal tool to ensure compliance with the existing environmental standards and applicable European standards for pollutant emissions. This was the first case when this technology was introduced in Russia.

Total cost of emission reduction measures, RUB thousand

|           | 2012    | 2013    |
|-----------|---------|---------|
| Mosenergo | 19,737  | 14,399  |
| TGC-1     | 294,934 | 183,856 |
| OGK-2     | 90,926  | 80,023  |

In 2012, OAO Mosenergo purchased and commissioned a mobile environmental laboratory to monitor the condition of ambient air within the areas covered by power plants. This is a special vehicle with equipment to measure pollutant concentration in the atmosphere, take air samples and monitor changes in meteorological parameters. In 2013 alone, we took and analysed 12,660 samples of atmospheric air in the area covered by power plants of OAO Mosenergo for nitrogen oxide, carbon oxide, nitrogen dioxide, sulphur dioxide and dust content.



Fig. 38. Kumskaya HPP

Climate change

Since the demand for electricity and heat closely correlates with both seasonal temperature fluctuations and instability of current weather conditions, any material

climate change in the regions where we operate would immediately have a noticeable impact on the income of our generating companies. Our hydro generation

facilities owned by OAO TGC-1 are also exposed to risks related to water level fluctuations.



Fig. 39. Cascade operation scheme with Vuoksa HPP Cascade as an example

Considering that material climate changes are unlikely in the short and medium term and are hard to accurately forecast in the longer term, we do not assess their potential financial implications for

our companies. Nevertheless, we do not rule out this risk and are aware of the fact that climate change can both be harmful to our business and become a source of extra demand and higher profits for us. For

this reason, we take pro-active steps to improve the economic, financial and process sustainability of our business to make sure we are ready for any possible scenario.



Fig. 40. Hydro turbine operation scheme with Lesogorskaya HPP as an example

### Water management

In managing water resources, we are guided by the requirements of Russian and international laws and seek to minimise the impact the operations of our generating companies have on water resources. All our operating processes are compliant with the following approved regulations aimed to reduce water consumption, water disposal and effluent discharges:

- Water Code of the Russian Federation of 14 July 2008; and
- Water Strategy of the Russian Federation to 2020 of 27 August 2009.

The process of heat and electricity generation is associated with heavy water consumption and discharge of waste water containing various pollutants.

In our companies, most service water is consumed by cooling systems of combined heat and power plants where water is used to condense steam. Steam power plants obtain high-pressure water steam from desalinated water by burning fuel. Steam energy is transformed into mechanical energy by rotating the turbine rotor which is then transformed into electricity via an electric generator. The steam exiting from the turbine is condensed by cooling water.

The process of heat and electricity generation is associated with heavy water consumption and discharge of waste water containing various pollutants.



Fig. 41. The cooling system in a steam power plant (TPP-26)



Fig. 42. The cooling tower of TPP-26

Service water is also needed to cool down auxiliary equipment. Once processed in water treatment facilities, service water is used to compensate for steam losses in the principal cycle of the power plant and the heat supply system. Water is also used

to wash heating surfaces of boilers and clean equipment (mainly boilers) of deposits. Coal-fired power plants use water to remove ash and slag from generating facilities to ash dump sites.

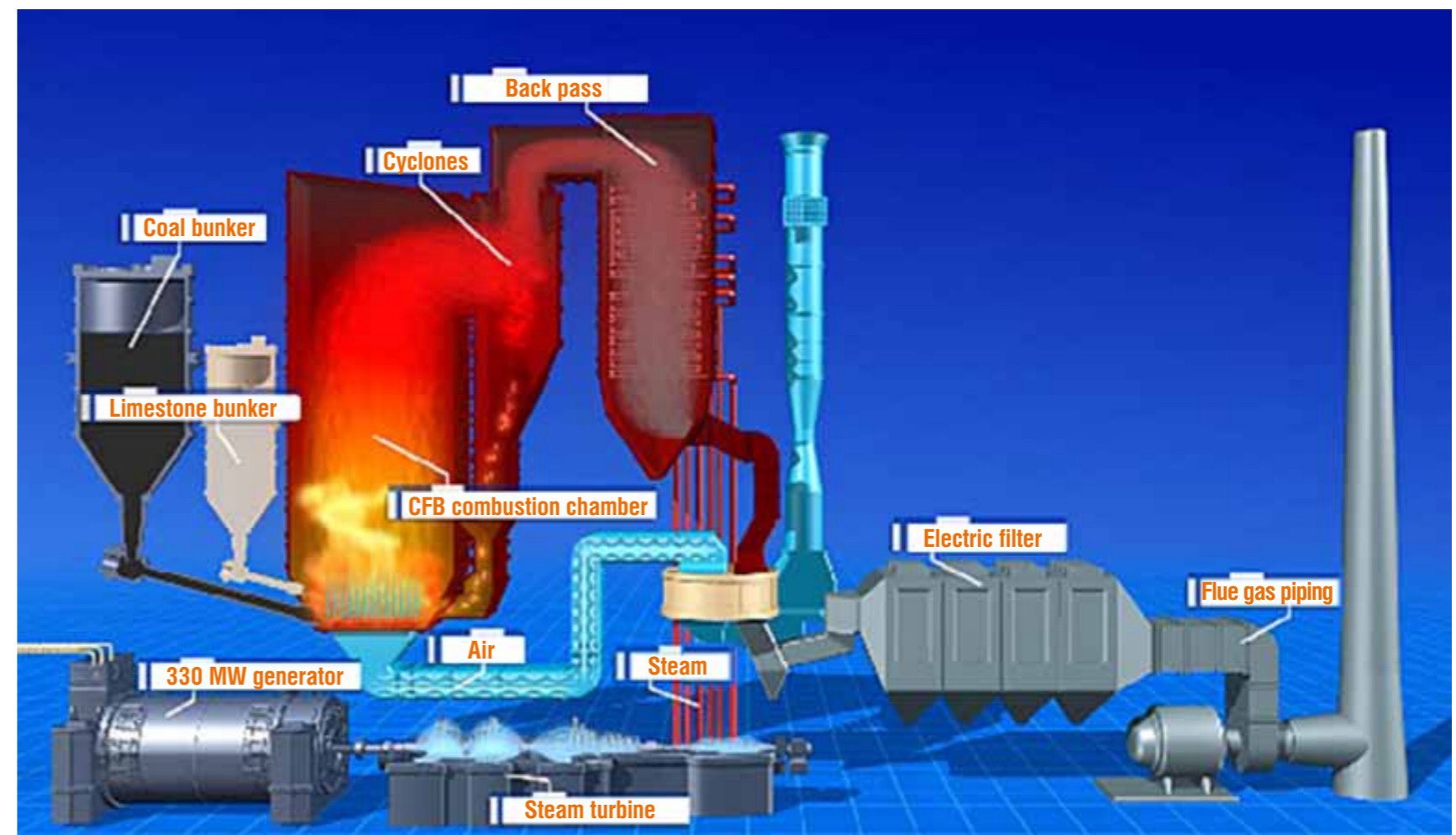


Fig. 43. Flowchart of a coal-fired generation unit at a State District Power Plant (GRES)

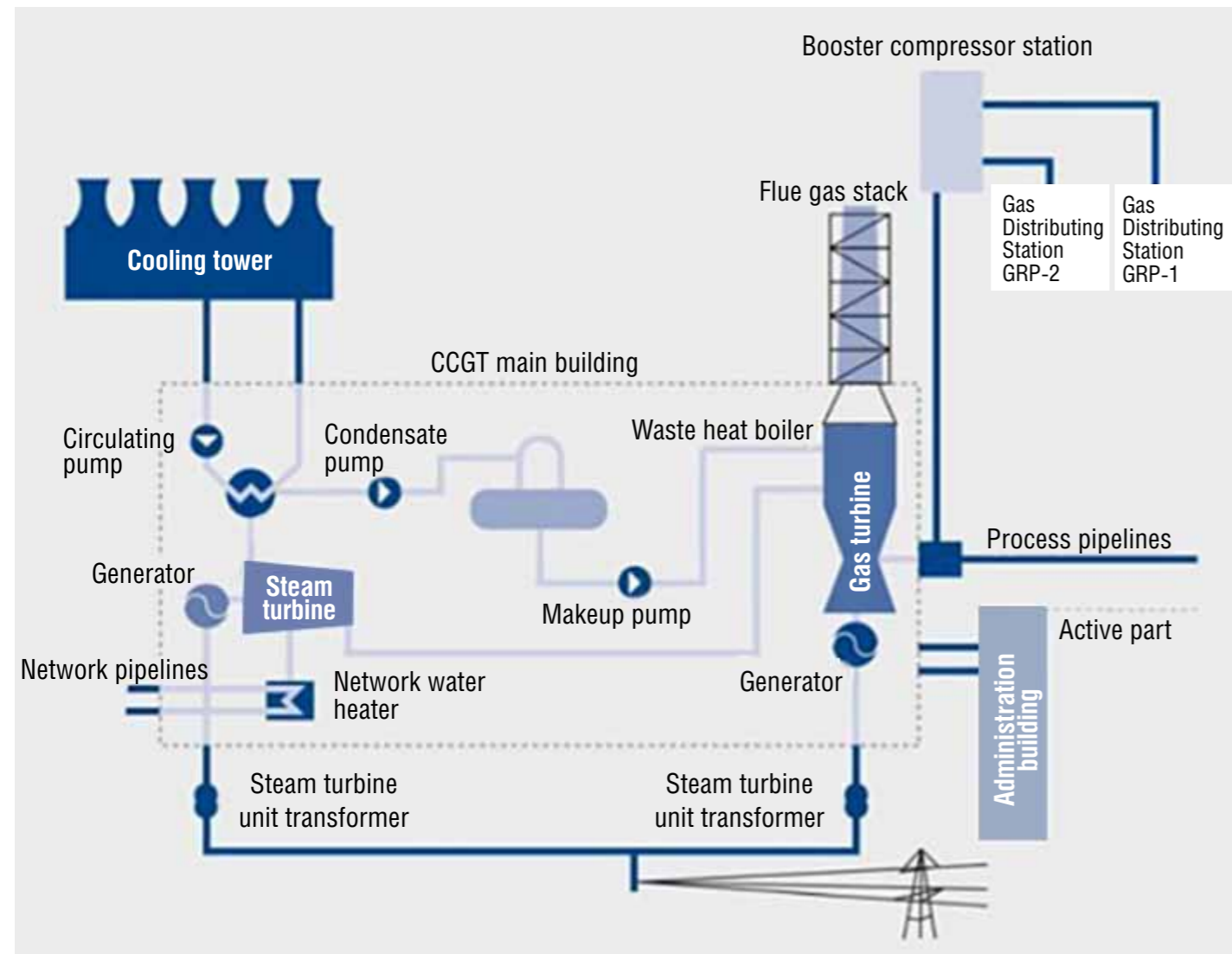


Fig. 44. Flowchart of a gas-fired generation unit at a CHPP

Most combined heat and power plants draw service water from surface water bodies, while some power plants use industrial waste water. Water from municipal water pipelines is used for sanitary purposes.

Amount and sources of withdrawn water, thousand cubic metres

|  | Mosenergo      |                | TGC-1          |                |                           |              | OGK-2            |                  |
|--|----------------|----------------|----------------|----------------|---------------------------|--------------|------------------|------------------|
|  | 2012           | 2013           | Total          |                | including Murmanskaya CHP |              | 2012             | 2013             |
| <b>Water withdrawal, thousand cubic metres</b> |                |                |                |                |                           |              |                  |                  |
| from surface sources                           | 476,183        | 472,445        | 371,926        | 328,347        | –                         | –            | 4,158,481        | 3,781,462        |
| from underground sources                       | 1,976          | 1,785          | 2              | 2              | –                         | –            | 1,990            | 1,849            |
| from public water supply systems               | 7,048          | 7,154          | 121,851        | 120,030        | 1,138                     | 1,207        | 7,039            | 7,381            |
| from other water supply systems                | 49,655         | 46,525         | 4,871          | 5,020          | –                         | –            | 1,236            | 1,325            |
| <b>Total</b>                                   | <b>534,862</b> | <b>527,909</b> | <b>498,650</b> | <b>453,399</b> | <b>1,138</b>              | <b>1,207</b> | <b>4,168,746</b> | <b>3,792,017</b> |
| <b>Water reused, thousand cubic metres</b>     |                |                |                |                |                           |              |                  |                  |
| <b>Total</b>                                   | <b>27,666</b>  | <b>27,129</b>  | <b>3,243</b>   | <b>2,264</b>   | <b>460</b>                | <b>159</b>   | <b>133,056</b>   | <b>133,821</b>   |



Fig. 45. Monitoring of environmental performance by generating companies of Gazprom Energoholding Group

Waste water is discharged via special water outlets into surface water bodies and sewerage networks. Chemical laboratories of power plants check the quality of waste water on a regular basis. Clean-to-standard waste water includes waste water from cooling systems, while treated-to-standard waste water is water that was purified by treatment facilities. To obtain treated-to-standard waste water, we use mechanical, physical / chemical and biological treatment methods.

**Waste water disposed by the Company and its level of treatment, thousand cubic metres**

|                                     | Mosenergo      |                | TGC-1          |                |                           |            | OGK-2            |                  |
|-------------------------------------|----------------|----------------|----------------|----------------|---------------------------|------------|------------------|------------------|
|                                     | 2012           | 2013           | Total          |                | including Murmanskaya CHP |            | 2012             | 2013             |
| polluted and untreated              | –              | –              | 136,193        | 126,059        | –                         | –          | 1,878            | 1,957            |
| polluted and insufficiently treated | 22,284         | 22,598         | 2,283          | 2,090          | 125                       | 131        | 3,110            | 3,677            |
| clean-to-standard (untreated)       | 356,782        | 301,925        | 205,092        | 180,599        | –                         | –          | 4,079,365        | 3,647,107        |
| treated-to-standard                 | 14,625         | 15,911         | 2              | 5              | –                         | –          | 6,154            | 5,866            |
| <b>Total</b>                        | <b>393,691</b> | <b>340,434</b> | <b>343,570</b> | <b>308,753</b> | <b>125</b>                | <b>131</b> | <b>4,090,507</b> | <b>3,658,607</b> |

Waste water discharged by our generating companies does not contain polychlorinated biphenyls (PCB) or similar substances and is not transferred to other organisations for reuse.

Waste water discharged by our companies is very warm. Although we do not run any targeted assessment of impact by this thermal pollution on ecosystems of rel-

evant water bodies, we are committed to limit this impact.

**Heat discharge by power plants (discharge of cooling water into adjacent water bodies and thermal pollution of water bodies): total amount and share in the total waste water discharge:**

|  | Mosenergo   |      | TGC-1                                |           |   |  | OGK-2       |             |
|--|---|------|--------------------------------------|-----------|---|--|-------------|-------------|
|  | 2012  | 2013 | Nevsky, Kolsky and Karelsky Branches |           | Murmanskaya CHP   |  | 2012        | 2013        |
| Total heat discharge, thousand cubic metres                      | In 2012–2013, OAO Mosenergo did not collect data on thermal pollution of water bodies |      | 205,092.2                            | 180,484.4 | In 2012–2013, OAO Murmanskaya CHP did not collect data on thermal pollution of water bodies |  | 4,079,365.4 | 3,739,772.7 |
| The share of heat discharge in the total waste water disposal, % |   |      | 59.7                                 | 58.5      |   |  | 99.8        | 99.7        |

We are actively working to minimise water consumption and water discharge by all our power plants, as well as effluent in waste water. To this end, all our power plants are constructing or retrofitting special waste water treatment and neutralisation equipment and facilities. In monitoring the effluent we pay specific attention to oil products as an essential environmental aspect.

In 2013, the Ecological Service and operating branches of OAO Mosenergo jointly analysed the company's water consumption and water disposal costs and drafted a list of cost cutting measures. Out of the 63 measures proposed, they selected 29 least expensive (below RUB 1m) and fastest payback initiatives. The selected measures are now being implemented by the company. Some of them are organisational; some provide for repairs; and some require investment in the replacement and upgrade of existing equipment and infrastructure. The total cost of these initiatives will be RUB 27 mm, while their annual economic effect is estimated at RUB 26 mm.

OAO TGC-1 and Norwegian and Finnish environmental and energy professionals jointly work on preserving the natural parameters of Lake Inari. The parties update their forecasts of the hydrological situation on a regular basis and use them to agree water release from Lake Inari, as

well as share information on safe operation and monitoring of waterworks. Their joint efforts are primarily focused on bringing changes in water levels in Inari close to natural changes and preserve its flora and fauna by recreating the conditions for fish spawning and conservation of fish resources. The parties cooperate under the tripartite treaty On Regulation of the Water Level of Lake Inari using Kaitakoski Hydro Power Plant signed by the Governments of the USSR, Norway and Finland in 1959. The treaty provides for the monitoring of the water level in Lake Inari, located in Finland, and the Paz River, which flows out of Inari and runs across Finland, Russia and Norway. Seven hydro power plants are installed on the river, including five plants that are combined into the Paz HPP Cascade of OAO TGC-1 and two plants that are part of the Norwegian energy system. Kaitakoski HPP is the balancing power plant of the hydro system. The HPP is the first power plant of the Paz HPP Cascade that directly affects the level of water and determines the operating mode of downstream plants. The joint efforts of energy and environmental experts of the three countries over more than half a century are an example of stable and mutually beneficial relations between neighbouring nations in natural resources management.

OAO TGC-1 has in place a specialised Water Management Efficiency Improvement Programme. Its key goal is to improve water management efficiency by cutting withdrawal losses of drinking quality water and reducing waste water discharge into sewerage systems.

OAO OGK-2 pursues a programme for staged transition to the water recirculation model. A considerable part of water drawn by the company is used to cool process equip-

ment. Water discharged after equipment cooling is clean-to-standard, so thermal pollution is their key negative impact on natural water bodies. To reduce this impact all new generation units of OAO OGK-2 are designed and constructed using only the water recirculation model for water supply and cooling towers. This model is used in all newly constructed units of Novocherkasskaya GRES, Cherepovetskaya GRES, Serovskaya GRES and Troitskaya GRES.

**In 2013, Ryazanskaya GRES, a branch of OAO OGK-2 successfully stocked the Novomichurinskoye Reservoir with fish. This project was implemented as part of a programme developed by the Federal State Budgetary Establishment Central Department of Fisheries Examination and Review and Protection and Acclimatisation Standards (FSBE TsUREN). A total of 9.5 tonnes of fish was purchased and released into the reservoir: 6 tonnes of grass and black carps; 2 tonnes of common carps, 1 tonne of silver carps, and 0.5 tonnes of sterlet sturgeon. Over the recent years, a total of 38 tonnes of fry has been stocked by Ryazanskaya GRES into the Novomichurinskoye Reservoir.**

**The fish stocking of the Novomichurinskoye Reservoir is carried out to ensure the normal electricity generation process cycle at the power plant as small crustaceans and algae harmful to the waterworks equipment serve as food for the fish. This is also a natural way of improving the environmental condition of the reservoir, which affects the environmental well-being of the entire region.**



Fig. 46. The meeting with environmental experts from Norway and Finland



Fig. 47. Lake Inari



Fig. 48. Ryazanskaya GRES at Novomichurinskoye Reservoir



### Industrial waste generation

Business and administrative operations of our generating companies result in industrial and consumer waste. The level of adverse environmental impacts of our generating companies' operations, primarily the intensity of pollutant emissions, and the amount of waste are closely linked to the electricity generation rate, the configuration and condition of process equipment at the power plants, as well as to the fuel mix used.

The following measures are taken by the companies to collect, use, neutralise, transport and dispose of Hazard Class 1, 2, 3 and 4 wastes:

- OAO Mosenergo: under unlimited licence No. 077 018 of 09 July 2013 to neutralise and dispose of Hazard Class 1 to 4 wastes;
- OAO TGC-1: under licence No. 7800091 of 25 August 2011, valid until 22 June 2015, to collect, use, neutralise, transport and dispose of Hazard Class 1 to 4 wastes; and
- OAO OGK-2: under unlimited licence No. D 26 00003 of 11 January 2013 to neutralise and dispose of Hazard Class 1 to 4 wastes.

Draft waste generation targets (DWGT) and waste disposal limits have been developed and agreed with supervisory authorities

for each branch of our generating companies. These documents also list the waste neutralisation and waste disposal sites used by the Company. The waste is transferred to other entities to be processed for neutralisation, recycling or disposal at municipal solid waste (MSW) landfills.

Even a one-off unauthorised disposal of industrial waste might cause a genuine environmental problem. For this reason, all business units of our companies strictly monitor their waste treatment. Each type of industrial waste is collected into special containers or on special temporary waste storage sites. Waste is taken out by prop-

erly licensed third-party entities in line with environmental requirements. Then Hazard Class 1, 2 and 3 wastes and some Hazard Class 4 wastes are disposed of or recycled by specialised companies. The bulk of Hazard Class 4 and 5 wastes is taken to municipal solid waste landfills. All our waste disposal destinations have been agreed with the Russian Federal Service for Supervision of Natural Resources.

In some cases, waste can be recycled for re-use. For instance, OAO Mosenergo's power plants send their ferrous and non-ferrous metal waste resulting from repairs to recycling. Metal recycling reduces the

intensity of the ore deposit mining and the impacts on land surface at waste storage sites, as well as the overall environmental impact.

Most waste from our operations is represented by Hazard Classes 4 and 5. They include bottom ash from coal combustion. Bottom ash is placed at our own specially licensed ash dumps. Out of all the waste we generate only used-up fluorescent lamps are of Hazard Class 1. They are carefully collected and delivered to specialised entities for disposal (neutralisation).

#### Waste generation, tonnes

|                   | Mosenergo        |                  | TGC-1           |                 |                           |                | OGK-2              |                    |
|-------------------|------------------|------------------|-----------------|-----------------|---------------------------|----------------|--------------------|--------------------|
|                   | 2012             | 2013             | Total           |                 | including Murmanskaya CHP |                | 2012               | 2013               |
|                   | 2012             | 2013             | 2012            | 2013            | 2012                      | 2013           | 2012               | 2013               |
| Hazard Class 1    | 11.2             | 10.7             | 12.0            | 8.6             | 0.36                      | 0.558          | 11.8               | 10.9               |
| Hazard Class 2    | 0.4              | 1.8              | 5.4             | 8.8             | –                         | –              | 1.0                | 1.0                |
| Hazard Class 3    | 683.8            | 660.6            | 3,761.6         | 1,623.0         | 426.35                    | 303.7          | 1,074.4            | 931.4              |
| Hazard Class 4    | 9,676.4          | 8,946.2          | 9,135.7         | 9,273.8         | 511.6                     | 603.7          | 212,297.6          | 183,019.7          |
| Hazard Class 5    | 108,562.8        | 161,507.3        | 74,793.4        | 86,016.3        | 546.8                     | 502.7          | 3,341,106.6        | 2,909,990.7        |
| <b>Total</b>      | <b>118,934.6</b> | <b>171,126.6</b> | <b>87,708.1</b> | <b>96,930.5</b> | <b>1,485.1</b>            | <b>1,410.6</b> | <b>3,554,491.4</b> | <b>3,093,953.7</b> |
| <i>Including:</i> |                  |                  |                 |                 |                           |                |                    |                    |
| <i>oil slime</i>  | <i>278.9</i>     | <i>164.6</i>     | <i>3,086.7</i>  | <i>1,117.8</i>  | <i>14.00</i>              | <i>11.04</i>   | <i>24.2</i>        | <i>52.8</i>        |
| <i>bottom ash</i> | <i>79,725.0</i>  | <i>139,519.3</i> | <i>67,984.5</i> | <i>75,624.6</i> | <i>396.0</i>              | <i>281.7</i>   | <i>3,431,511.0</i> | <i>2,961,568.5</i> |



Fig. 49. TPP-11

## Waste disposal, tonnes

|                            | 2012     |           |            | 2013     |           |            |
|----------------------------|----------|-----------|------------|----------|-----------|------------|
|                            | Total    | Including |            | Total    | Including |            |
|                            |          | Oil slime | Bottom ash |          | Oil slime | Bottom ash |
| <b>Mosenergo</b>           |          |           |            |          |           |            |
| Taken to our own landfills | 31,684.5 | –         | –          | 93,905.6 | –         | –          |
| Recycled by the Company    | 239.3    | 0.9       | –          | 174.8    | 41.0      | –          |
| Neutralised by the Company | –        | –         | –          | –        | –         | –          |
| Delivered to third parties | 87,454.5 | 278.0     | 49,603.1   | 77,274.7 | 123.6     | 47,622.4   |
| Including for:             |          |           |            |          |           |            |
| <i>recycling</i>           | 56,420.2 | –         | 49,603.1   | 52,776.7 | –         | 47,622.4   |
| <i>neutralisation</i>      | 549.0    | 278.0     | –          | 378.9    | 123.6     | –          |
| <i>storage</i>             | –        | –         | –          | –        | –         | –          |
| <i>disposal</i>            | 30,485.3 | –         | –          | 24,119.2 | –         | –          |
| <b>TGC-1</b>               |          |           |            |          |           |            |
| Taken to our own landfills | 3,816.6  | –         | –          | 3,241.2  | –         | –          |
| Recycled by the Company    | 3.5      | –         | –          | 1.5      | –         | –          |
| Neutralised by the Company | –        | –         | –          | –        | –         | –          |
| Delivered to third parties | 80,842.7 | 3,086.7   | 64,612.0   | 91,926.3 | 1,117.8   | 72,914.0   |
| Including for:             |          |           |            |          |           |            |
| <i>recycling</i>           | 3,814.4  | 258.6     | –          | 6,068.7  | –         | –          |
| <i>neutralisation</i>      | 604.3    | 520.3     | –          | 387.6    | 221.4     | –          |
| <i>storage</i>             | –        | –         | –          | –        | –         | –          |
| <i>disposal</i>            | 74,983.2 | 2,307.8   | 64,615.4   | 82,396.0 | 896.4     | 72,924.6   |

In the reporting period (2012–2013), we continued improving our waste disposal practices and corporate documents applicable in our companies. As a result, in

2012, OAO Mosenergo additionally drafted a Procedure for In-process Control over Industrial and Consumer Waste Disposal and a memo on establishing an environmental

management system, while its branches divided responsibilities for maintaining areas orderly and clean state among their business units. In 2012, OAO OGK-2 also

|                            | 2012        |           |            | 2013        |           |            |
|----------------------------|-------------|-----------|------------|-------------|-----------|------------|
|                            | Total       | Including |            | Total       | Including |            |
|                            |             | Oil slime | Bottom ash |             | Oil slime | Bottom ash |
| <b>Murmanskaya CHP</b>     |             |           |            |             |           |            |
| Taken to our own landfills | –           | –         | –          | –           | –         | –          |
| Recycled by the Company    | 3.759       | –         | –          | 3.643       | –         | –          |
| Neutralised by the Company | –           | –         | –          | –           | –         | –          |
| Delivered to third parties | 1,481.34    | 14.00     | 396.0      | 1,406.975   | 11.04     | 281.7      |
| Including for:             |             |           |            |             |           |            |
| <i>recycling</i>           | 274.4       | 14.00     | –          | 205.44      | 11.04     | –          |
| <i>neutralisation</i>      | 184.268     | –         | –          | 229.183     | –         | –          |
| <i>storage</i>             | –           | –         | –          | –           | –         | –          |
| <i>disposal</i>            | 1,022.67    | –         | 396.0      | 972.352     | –         | 281.7      |
| <b>OGK-2</b>               |             |           |            |             |           |            |
| Taken to our own landfills | 3,384,489.2 | –         | –          | 2,941,997.4 | –         | –          |
| Recycled by the Company    | 87,086.4    | 23.7      | –          | 104,158.1   | 50.8      | –          |
| Neutralised by the Company | 2.1         | –         | –          | 2.0         | –         | –          |
| Delivered to third parties | 100,709.4   | –         | 72,817.7   | 71,796.5    | –         | 45,628.5   |
| Including for:             |             |           |            |             |           |            |
| <i>recycling</i>           | 85,286.9    | –         | 72,817.7   | 59,370.2    | –         | 45,700.7   |
| <i>neutralisation</i>      | 593.2       | 511.6     | –          | 768.1       | 466.4     | –          |
| <i>storage</i>             | 0.3         | –         | –          | 0.2         | –         | –          |
| <i>disposal</i>            | 14,829.0    | –         | –          | 11,658.0    | –         | –          |

drafted and put into effect a Procedure for In-process Control over Waste Disposal by OAO OGK-2

In 2012, to raise the environmental awareness of the personnel at its power plants, OAO Mosenergo made warning plates showing the rules for separate collection of municipal solid waste.

A considerable part of OAO OGK-2's capacities are coal-fired, which makes the issue of bottom ash disposal particularly important for our Company. To reduce its amount and maintain the useful capacity of existing ash dumps, coal-fired branches of OAO OGK-2 (such as Novochoerkasskaya GRES, Cherepovetskaya GRES and Troitskaya GRES) take measures to dispose of bottom ash waste from ash dumps and remove dry ash directly from under electric filters. At present, we are considering storing bottom ash waste from Krasnoyarskaya GRES in the mined-out area of the Borodinsky coal basin.

Bottom ash from Troitskaya GRES of OAO OGK-2 is taken to an ash dump at the salt lake of Shubarkol. Since it is located in the Kostanay Region of Kazakhstan, Russia's neighbour, all relevant environmental measures are taken in accordance with the Environmental Code of the Republic of Kazakhstan. In particular, we monitor emissions at the ash dump on a regular basis, as well as run operating and environmental monitoring of environmental impacts of the ash dump, pulp pipeline and water duct of Troitskaya GRES, which are also located in the Republic of Kazakhstan. The following measures were taken at the ash dump in 2012–2013:

- dust suppression at ash storage areas by planting perennial grasses;

- maintenance of fences and separation dams of the ash dump;
- monitoring at the ash dump;
- assessment of the technical condition of dams and measurement of the free capacity of Sections 2 and 3;
- replacement of a section of the ash disposal pipeline and the clarified water pipeline;
- reclamation of the ash dump's Sections 1 and 2;
- ash dump zoning;
- preparation of draft TER (Republic of Kazakhstan);
- construction of a water stop at the clarified water channel of Section 3;
- drafting of environmental control programmes;
- development of a project for reclamation of lands disturbed by the construction and operation of the ash dump alongside the right bank of the Kairak River.

Currently, all these measures are carried out according to the Plan of Measures by Troitskaya GRES, a Branch of OAO OGK-2, to Reduce the Adverse Environmental Impact of the Ash Dump at Lake Shubarkol in 2013–2014, agreed with the Ministry of Environment of the Republic of Kazakhstan. Upon its expiry, we will adopt a similar plan for 2015–2016 (and so on until we finish using and shut down the ash dump).

By setting up an ash dump at the salt lake of Shubarkol, we noticeably changed the local environment. Some of these changes are negative, but some are positive for the local flora and fauna. E.g. meltwater from the eastern water withdrawal area of the dump was obstructed by the dam, which resulted in a new water reservoir, Vostochny. It proved to lie on the path of seasonal bird migrations. Currently, the new lake hosts ducks, herons, cranes, coots, and swans, with many of the species featured in the Russian Red List of endangered species. An increase in the fowl population led to higher numbers of birds of prey (kites, golden eagles, falcons and snowy owls) and carnivorous animals (foxes, corsacs, and ferrets). Once fresh, the surface waters in the ash dump vicinities created favourable living and spawning conditions for carps. Gudgeons, which also appeared in the lake, are also a sign that the water is relatively clean. Moreover, grain crops on the land around the dump have increased, while the area of saline soils has shrunk, creating more agricultural lands.

### Fines and non-financial penalties imposed on the Company for violation of environmental laws

G4-EN29

|   | Mosenergo |      | TGC-1 |         |                           |      | OGK-2    |         |
|---|-----------|------|-------|---------|---------------------------|------|----------|---------|
|   | 2012      | 2013 | Total |         | including Murmanskaya CHP |      | 2012     | 2013    |
| Number of non-financial penalties imposed   | 5         | 3    | 17    | 12      | 4                         | 3    | –        | 4       |
| Total amount of fines imposed, RUB thousand | 110.0     | –    | 357.0 | 2,702.7 | 105.0                     | 90.0 | 21,326.1 | 1,635.0 |

The largest fine imposed on OAO OGK-2 in 2012 was related to the company's operation of the ash dump of Troitskaya GRES in the Republic of Kazakhstan. Since all violations of Kazakhstan's environmental laws that had been identified were remedied, in 2013, the company's fine costs reduced dramatically.

|   | 2012     | 2013    |
|---|----------|---------|
| <b>OGK-2</b>  |          |         |
| Amount of fines imposed in the Russian Federation, RUB thousand     | 135.0    | 140.0   |
| Amount of fines imposed in the Republic of Kazakhstan, RUB thousand | 21,139.1 | 1,471.8 |
| Total amount of fines imposed, RUB thousand                         | 21,274.1 | 1,611.8 |

## Environmental costs and investments

## Environmental costs and investments, RUB thousand

|  | Mosenergo     |               | TGC-1          |                |                           |              | OGK-2          |                |
|--|---------------|---------------|----------------|----------------|---------------------------|--------------|----------------|----------------|
|  | 2012          | 2013          | Total          |                | including Murmanskaya CHP |              | 2012           | 2013           |
| <b>Preparation and approval of permits</b>   | <b>25,142</b> | <b>20,135</b> | <b>5,260</b>   | <b>10,502</b>  | <b>887</b>                | <b>252</b>   | <b>6,980</b>   | <b>10,660</b>  |
| <b>In-process environmental control and monitoring</b>                                   | <b>18,861</b> | <b>26,505</b> | <b>11,762</b>  | <b>12,641</b>  | <b>284</b>                | <b>459</b>   | <b>19,752</b>  | <b>25,029</b>  |
| <b>Compensation for adverse environmental impact, including fines and recovery costs</b> | <b>25,433</b> | <b>26,832</b> | <b>136,561</b> | <b>172,669</b> | <b>7,950</b>              | <b>5,458</b> | <b>324,082</b> | <b>361,799</b> |
| <b>Equity investments to improve environmental performance, including</b>                | <b>85,725</b> | <b>51,943</b> | <b>176,830</b> | <b>53,637</b>  | –                         | <b>4,258</b> | <b>357,805</b> | <b>56,678</b>  |
| – water protection   | 47,664        | 2,616         | 176,830        | 50,736         | –                         | 4,258        | –              | –              |
| – ambient air protection   | 37,361        | 34,834        | –              | 2,901          | –                         | –            | 13,159         | 49,166         |
| – land protection  | –             | –             | –              | –              | –                         | –            | 344,646        | 3,299          |
| fish protection and reproduction   | 700           | 14,493        | –              | –              | –                         | –            | –              | 4,213          |
| – disposal, neutralisation and burial of toxic waste                                     | –             | –             | –              | –              | –                         | –            | 307,264        | 184,941        |
| <b>Current (operating) environmental costs, including</b>                                | <b>50,420</b> | <b>27,950</b> | <b>264,423</b> | <b>187,019</b> | <b>6,176</b>              | <b>6,793</b> | <b>307,263</b> | <b>184,940</b> |
| – ambient air protection and climate change prevention                                   | 19,302        | 10,043        | 19,337         | 14,267         | 1,407                     | 1,523        | 77,251         | 48,997         |
| – waste water collection and treatment   | 17,906        | 9,301         | 134,419        | 57,368         | 4,769                     | 5,270        | 111,235        | 101,039        |
| – waste treatment  | 10,625        | 7,850         | 107,620        | 95,315         | –                         | –            | 103,497        | 16,253         |
| – protection and remediation of land, surface and ground waters                          | 598           | 100           | 429            | 351            | –                         | –            | 12,022         | 15,759         |

|   | Mosenergo      |                | TGC-1          |                |                           |              | OGK-2          |                |
|---|----------------|----------------|----------------|----------------|---------------------------|--------------|----------------|----------------|
|   | 2012           | 2013           | Total          |                | including Murmanskaya CHP |              | 2012           | 2013           |
| – protection of the environment against noise, vibration and other physical impacts | 1,904          | 656            | 543            | 569            | –                         | –            | –              | 337            |
| – preservation of biodiversity and protection of nature areas                       | –              | –              | –              | –              | –                         | –            | 772            | 424            |
| – research and development  | 85             | –              | –              | –              | –                         | –            | –              | –              |
| – other   | –              | –              | 2,075          | 19,149         | –                         | –            | 2,486          | 2,131          |
| <b>Fees for environmental services, including</b>                                   | <b>628,511</b> | <b>594,921</b> | <b>265,109</b> | <b>354,515</b> | <b>2,777</b>              | <b>2,600</b> | <b>171,700</b> | <b>157,423</b> |
| – ambient air protection and climate change prevention                              | 9,465          | 13,139         | 5,421          | 2,690          | 818                       | 197          | 8,457          | 12,119         |
| – waste water collection and treatment  | 546,424        | 512,808        | 163,320        | 227,823        | 1,192                     | 1,541        | 3,997          | 3,850          |
| – waste treatment   | 66,913         | 65,018         | 92,741         | 106,699        | 767                       | 862          | 29,746         | 31,535         |
| – protection and remediation of land, surface and ground waters                     | 681            | 493            | 2,387          | 17,004         | –                         | –            | 79,291         | 11,501         |
| – protection of the environment against noise, vibration and other physical impacts | 1,448          | 3,463          | 296            | 299            | –                         | –            | 6              | 6              |
| – preservation of biodiversity and protection of nature areas                       | –              | –              | 944            | –              | –                         | –            | 1,190          | 3,298          |
| – radiation safety of environment   | –              | –              | –              | –              | –                         | –            | 2              | 8              |
| – research and development  | 857            | –              | –              | –              | –                         | –            | –              | –              |
| – other   | 2,723          | –              | –              | –              | –                         | –            | –              | –              |

### Environmental complaints received by the companies in 2012–2013

|  | Mosenergo |          | TGC-1 <sup>24</sup> |          | OGK-2    |          |
|--|-----------|----------|---------------------|----------|----------|----------|
|  | 2012      | 2013     | 2012                | 2013     | 2012     | 2013     |
| total number of environmental complaints received by the Company from the public in the reporting period | 4         | 6        | 2                   | 1        | 1        | 6        |
| the share of complaints that we started to address in the reporting period, number / %                   | 4 / 100%  | 6 / 100% | 2 / 100%            | 1 / 100% | 1 / 100% | 6 / 100% |
| the share of complaints resolved over the reporting period, number / %                                   | 4 / 100%  | 6 / 100% | 1 / 50%             | 1 / 100% | 1 / 100% | 6 / 100% |



Fig. 50. TPP-21

61 24 OAO Murmanskaya CHP did not receive any environmental complaints in 2012–2013.

### Environmental awards

On 19 December 2011, OAO Mosenergo won the second prize for the Best Completed Project Using Green and Energy Saving Technologies, awarded by the Government of Moscow for designing and organising the implementation of advanced high performance environmental technologies at the company’s power plants.

In addition, the Government of Moscow recognised the environmental performance of OAO Mosenergo by awarding the company a diploma For Important Contribution to the Environmental Protection of Moscow.

OAO Mosenergo intends to keep improving its performance. In 2011, Swedish SWECO ran an audit of the company’s power plants, the results of which are currently used to implement a number of efficient environmental measures.

In 2012, OAO TGC-1 won the Crystal Drop, an award by GUP Vodokanal of St. Petersburg, as the Best User. The Crystal Drop award was first run in 2012. Winners and runners-up were selected by a special panel of experts set up by GUP Vodokanal of St. Petersburg. They nominees were evaluated against special criteria, with the major criterion being timely and full discharge of contractual obligations and the implementation of environmental and water protection measures by the user. Winners were selected in several categories. OAO TGC-1 became No. 1 among Saint Petersburg heat and electricity suppliers.



Fig. 51. Environmental diploma awarded to OAO Mosenergo by the Government of Moscow in 2011



Fig. 52. Diploma issued to OAO TGC-1 as the winner of the Crystal Drop, an award launched by SUE Vodokanal of St. Petersburg

## Labour Sustainability

### Management's approach to HR policy and occupational health and safety

The HR policy and the personnel management system of Gazprom Energoholding's generating companies are aligned with the strategic goal of OAO Gazprom: "become a leader among global energy companies" and are aimed at building a team of professionals capable of delivering their objectives in an efficient way. We believe that our HR policy must primarily focus on achieving and maintaining a stable status of a "preferred employer" that attracts committed and highly efficient people.

We are aware that the compliance with labour law requirements and competitive remuneration are the necessary, but not sufficient conditions for retaining highly skilled professionals and recruiting new talent. For this reason, we strongly focus on creating safe and comfortable working conditions and providing our employees with opportunities for career enhancement and professional development as well as to holding skills contests for employees, sports, recreational and other events and programmes. We also care about social security of our employees. We believe that all this combined provides an incentive for long and efficient employment experience with our companies and makes our employees aware of their value to the Company and of the importance of their contribution to the overall success. The key principles of the HR policies of our generating companies are as follows:

- transparency and openness,
- aspirations for sectoral leadership,
- efficient investments in the personnel,
- ongoing improvements, and
- organisational discipline.

The Human Resources Management Policy of OAO Gazprom, its Subsidiaries and Entities for 2011–2015 (approved by Resolution No. 49 of OAO Gazprom's Management Committee of 07 November 2009) is the underlying document for personnel management in Gazprom Energoholding's generating companies. Corporate documents of our companies were drafted in strict compliance with the above document and statutory requirements of the Russian Federation.

Occupational health and safety is a key industrial safety priority in our companies and is governed by the requirements of applicable regulations on industrial safety, including:

- Federal Law No. 116-FZ On Industrial Safety of Hazardous Operating Facilities (HOF) of 21 July 1997, and
- the Rules for In-Process Control over Compliance with Industrial Safety Requirements at Hazardous Operating Facilities as approved by Resolution No. 263 of the Russian Government of 10 March 1999.

Our companies have in place a specialised Occupational Health Management System (OHMS) that is driven by:

- a process-based approach,

- compliance with the statutory occupational health rules and standards,
- systemised training of operating personnel in safe work methods and techniques, supported with regular refresher trainings,
- regular follow-up and appraisal of occupational health efforts,
- the interest of employees in safe working conditions,
- full logistical support for occupational safety events, and
- responsibility of each employee for safety at his or her workplace.

**We work towards building a common governance and management framework across in Gazprom Energoholding's generating companies. These efforts will result in the unification of articles of association, organisational structures, core business processes, and corporate statistical and analytical reporting forms.**

### Corporate human resources

As of 31 December 2013, the headcount of Gazprom Energoholding's generating companies (including persons employed under civil law agreements) was 24,272 employees, down 3.9% year-on-year, or by 998 employees. By 31 December 2013, the share of women stayed flat year-on-year at 31%.

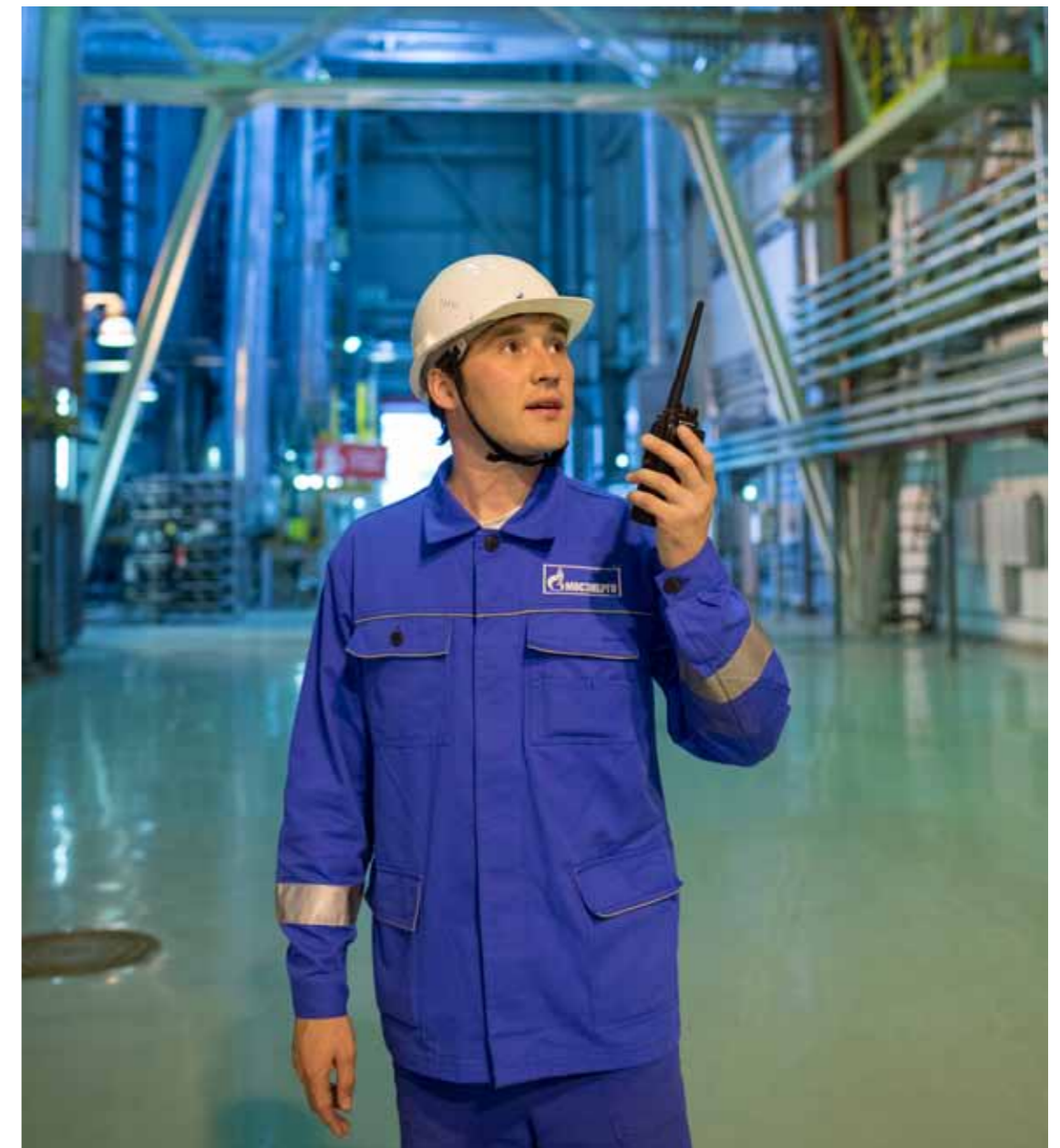


Fig. 53. Employee of TPP-26

## The total headcount including persons employed under commercial contracts and part-time employees (by region and by gender)

| Region of operation   | 2012          |              | 2013          |              |
|---|---------------|--------------|---------------|--------------|
|   | Female        | Male         | Female        | Male         |
| <b>Mosenergo</b>  |               |              |               |              |
| Moscow and Moscow Region                                      | 2,144         | 5,412        | 2,148         | 5,436        |
| <b>Total for Mosenergo</b>                                    | <b>2,144</b>  | <b>5,412</b> | <b>2,148</b>  | <b>5,436</b> |
|   | <b>7,556</b>  |              | <b>7,584</b>  |              |
| <b>TGC-1</b>  |               |              |               |              |
| Saint Petersburg  | 1,231         | 2,432        | 1,140         | 2,344        |
| Leningrad Region  | 272           | 751          | 277           | 711          |
| Republic of Karelia   | 228           | 722          | 228           | 734          |
| Murmansk Region   | 597           | 1,624        | 588           | 1,626        |
| <i>including Murmanskaya CHP</i>                              | <i>168</i>    | <i>509</i>   | <i>170</i>    | <i>528</i>   |
| <b>Total for TGC-1</b>  | <b>2,328</b>  | <b>5,529</b> | <b>2,233</b>  | <b>5,415</b> |
|   | <b>7,857</b>  |              | <b>7,648</b>  |              |
| <b>OGK-2</b>  |               |              |               |              |
| Tyumen Region   | 323           | 708          | 296           | 678          |
| Ryazan Region   | 447           | 880          | 396           | 796          |
| Stavropol Territory   | 298           | 601          | 263           | 537          |
| Leningrad Region  | 298           | 538          | 302           | 516          |
| Chelyabinsk Region  | 483           | 1,007        | 419           | 848          |
| Rostov Region   | 514           | 739          | 421           | 701          |
| Krasnoyarsk Territory   | 314           | 696          | 235           | 658          |
| Vologda Region  | 242           | 322          | 245           | 335          |
| Sverdlovsk Region   | 201           | 350          | 179           | 343          |
| Pskov Region  | 167           | 227          | 149           | 206          |
| Krasnodar Territory   | 59            | 110          | 67            | 121          |
| <b>Total for OGK-2<sup>25</sup></b>                           | <b>3,544</b>  | <b>6,313</b> | <b>3,167</b>  | <b>5,873</b> |
|   | <b>9,857</b>  |              | <b>9,040</b>  |              |
| <b>Total for Gazprom Energoholding's generating companies</b> | <b>25,270</b> |              | <b>24,272</b> |              |

In recruiting employees and selecting nominees for management positions, we focus exclusively on their professional skills,

without regard for any social status or keeping relevant statistics. Each new employee receives job orientation. Employees on pro-

bation are given a job assignment for the probation period, on expiry of which we assess their performance.

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## Headcount of corporate governance / management bodies by gender and age

|                                  | Below 30 |          |          |          | From 30 to 50 |           |          |           | Above 50 |           |          |           |
|----------------------------------|----------|----------|----------|----------|---------------|-----------|----------|-----------|----------|-----------|----------|-----------|
|                                  | 2012     |          | 2013     |          | 2012          |           | 2013     |           | 2012     |           | 2013     |           |
|                                  | Female   | Male     | Female   | Male     | Female        | Male      | Female   | Male      | Female   | Male      | Female   | Male      |
| Mosenergo                        | 96       | 200      | 104      | 212      | 314           | 831       | 328      | 878       | 188      | 807       | 213      | 784       |
| TGC-1                            | 34       | 146      | 20       | 144      | 223           | 681       | 231      | 686       | 144      | 538       | 150      | 524       |
| <i>including Murmanskaya CHP</i> | <i>1</i> | <i>7</i> | <i>1</i> | <i>6</i> | <i>7</i>      | <i>54</i> | <i>7</i> | <i>51</i> | <i>5</i> | <i>29</i> | <i>6</i> | <i>29</i> |
| OGK-2                            | 16       | 39       | 16       | 38       | 307           | 717       | 312      | 727       | 154      | 360       | 141      | 329       |

## Total headcount by staff and non-staff employee, by type of employment contract and gender

|                                  | Staff                                     |            |            |            |   |          |          |          | Non-staff           |          |          |          |
|----------------------------------|---|------------|------------|------------|---|----------|----------|----------|---------------------|----------|----------|----------|
|                                  | Employment contract with a staff employee |            |            |            | Employment contract with a part-time employee |          |          |          | Commercial contract |          |          |          |
|                                  | 2012                                      |            | 2013       |            | 2012  |          | 2013     |          | 2012                |          | 2013     |          |
|                                  | Female                                    | Male       | Female     | Male       | Female  | Male     | Female   | Male     | Female              | Male     | Female   | Male     |
| Mosenergo                        | 2,119                                     | 5,367      | 2,113      | 5,366      | 9   | 13       | 11       | 11       | 12                  | 36       | 24       | 59       |
| TGC-1                            | 2,299                                     | 5,462      | 2,217      | 5,365      | 7   | 42       | 5        | 21       | 22                  | 25       | 11       | 29       |
| <i>including Murmanskaya CHP</i> | <i>158</i>                                | <i>505</i> | <i>165</i> | <i>521</i> | <i>2</i>                                      | <i>3</i> | <i>2</i> | <i>4</i> | <i>8</i>            | <i>1</i> | <i>3</i> | <i>3</i> |
| OGK-2                            | 3,543                                     | 6,309      | 3,167      | 5,870      | 1   | 1        | –        | –        | –                   | 3        | –        | 3        |

## Staff headcount by type of employment and gender

|                                  | Full-time  |            |            |            | Part-time |      |        |      |
|----------------------------------|------------|------------|------------|------------|-----------|------|--------|------|
|                                  | 2012       |            | 2013       |            | 2012      |      | 2013   |      |
|                                  | Female     | Male       | Female     | Male       | Female    | Male | Female | Male |
| Mosenergo                        | 2,119      | 5,367      | 2,114      | 5,365      | 9         | 13   | 11     | 11   |
| TGC-1 <sup>26</sup>              | 2,283      | 5,454      | 2,205      | 5,356      | 16        | 8    | 12     | 9    |
| <i>including Murmanskaya CHP</i> | <i>158</i> | <i>505</i> | <i>165</i> | <i>521</i> | –         | –    | –      | –    |
| OGK-2                            | 3,544      | 6,310      | 3,167      | 5,870      | –         | –    | –      | –    |

25 Including employees of the Company's headquarters in Moscow.

63 26 Information on staff employees (net of part-time)

### Staff turnover

In 2012–2013, the average staff turnover (ratio of the number of employees dismissed for cause and the average number of employees on the payroll in the reporting period) in Gazprom Energoholding’s generating com-

panies was 8–10%. The following factors contribute to our recruitment and retention of skilled personnel:

- competitive remuneration (above average across regions in which we operate),

- a number of benefits and compensations payable to employees under corporate documents, and

- personnel development programmes (training, career opportunities).

|   | Below 30  |             |             |              | From 30 to 50 |             |              |             | Above 50     |              |               |      |
|---|---|-------------|-------------|--------------|---------------|-------------|--------------|-------------|--------------|--------------|---------------|------|
|   | 2012  |             | 2013        |              | 2012          |             | 2013         |             | 2012         |              | 2013          |      |
|   | Female  | Male        | Female      | Male         | Female        | Male        | Female       | Male        | Female       | Male         | Female        | Male |
| Employees hired in 2012–2013  |   |             |             |              |               |             |              |             |              |              |               |      |
| Mosenergo   | 89  | 284         | 83          | 301          | 78            | 160         | 83           | 209         | 31           | 64           | 65            | 54   |
| TGC-1   | 82  | 315         | 52          | 272          | 78            | 183         | 81           | 143         | 31           | 46           | 22            | 55   |
| <i>including Murmanskaya CHP</i>  | 1   | 14          | 6           | 18           | 7             | 10          | 12           | 17          | –            | 1            | –             | 5    |
| OGK-2   | 28  | 66          | 24          | 56           | 23            | 56          | 18           | 42          | 6            | 17           | 8             | 18   |
| Employees dismissed in 2012–2013  |   |             |             |              |               |             |              |             |              |              |               |      |
| Mosenergo   | 63  | 134         | 48          | 157          | 105           | 172         | 108          | 134         | 85           | 166          | 98            | 254  |
| TGC-1   | 55  | 209         | 51          | 209          | 89            | 176         | 79           | 145         | 106          | 204          | 102           | 218  |
| <i>including Murmanskaya CHP</i>  | 1   | 3           | 2           | 4            | 2             | 2           | 5            | 8           | 7            | 12           | 4             | 12   |
| OGK-2   | 23  | 55          | 12          | 29           | 55            | 131         | 20           | 49          | 45           | 107          | 36            | 86   |
| Average employment time in our companies for employees dismissed in 2012–2013 |   |             |             |              |               |             |              |             |              |              |               |      |
| Mosenergo   | 4 y   | 4 y         | 3 y         | 2 y          | 12 y          | 13 y        | 11 y         | 11 y        | 23 y         | 23 y         | 22 y          | 23 y |
| TGC-1   | 2 y and 4 m   | 2 y and 3 m | 2 y and 5 m | 1 y and 11 m | 10 y and 2 m  | 8 y and 4 m | 9 y and 9 m  | 6 y and 5 m | 21 y and 8 m | 20 y and 4 m | 20 y and 10 m | 24 y |
| <i>including Murmanskaya CHP</i>  | 2 y and 1 m   | 2 y and 4 m | 2 y and 4 m | 2 y and 4 m  | 23 y and 5 m  | 3 y         | 12 y and 6 m | 6 y and 5 m | 26 y and 4 m | 21 y and 3 m | 15 y and 6 m  | 21 y |
| OGK-2   | OAO OGK-2 did not keep statistical records on the employment time for employees dismissed in 2012–2013 and in the previous periods. The average employment period in OAO OGK-2 is 12.7 years. |             |             |              |               |             |              |             |              |              |               |      |

### Staff remuneration

The remuneration system existing in Gazprom Energoholding’s generating companies contains a fixed part and a variable part of remuneration. The fixed part consists of fixed remuneration payable to employees and compensation payments depending on their work conditions and the nature of job. The variable part includes increments and incentive payments, including bonuses that are assessed on expiry of the reporting period (month, quarter, or year) subject to achievement of Key Performance Indicators (KPI), which serve as a tool to appraise employees’ performance and motivation.

The remuneration framework of OAO Mosenergo provides for a system of grades (job positions) that reflect the differences among employees depending on their scope of job, level of responsibility

and other factors that are used to assess the fixed part of remuneration. OAO TGC-1 and OAO OGK-2 assess their fixed remuneration using a wage rate system (or a wage rate scale) that reflects the differences among employees depending on the complexity of their job duties and achievement of work targets.

Pursuant to Russian laws, the regions where our generating companies operate employ the unified minimum wage rate (MWR), which is the same for all employees regardless of their gender. The wage rate for employees at the lowest positions with our companies is above the MWR applicable in relevant regions and does not depend on the gender or age of the employee. The average wage rate in our companies is also maintained at a level above the average regional.



Fig. 54. Employee of TPP-20



## Minimum wage (including compensation and incentive payments) to MWR ratio in the regions of operation

|                               | 2012 | 2013 |
|-------------------------------|------|------|
| <b>Mosenergo<sup>27</sup></b> |      |      |
| Moscow                        | 2.47 | 2.79 |
| <b>TGC-1</b>                  |      |      |
| Saint Petersburg              | 1.75 | 1.72 |
| Leningrad Region              | 1.93 | 2.02 |
| Republic of Karelia           | 2.52 | 2.51 |
| Murmansk Region               |      |      |
| Kolsky Branch                 | 1.93 | 1.94 |
| Murmanskaya CHP               | 2.10 | 1.88 |
| <b>OGK-2</b>                  |      |      |
| Tyumen Region                 | 1.82 | 7.84 |
| Ryazan Region                 | 1.45 | 3.19 |
| Stavropol Territory           | 1.82 | 3.51 |
| Leningrad Region              | 1.98 | 3.57 |
| Chelyabinsk Region            | 1.82 | 3.96 |
| Rostov Region                 | 1.82 | 3.45 |
| Krasnoyarsk Territory         | 1.65 | 5.81 |
| Vologda Region                | 1.82 | 3.98 |
| Sverdlovsk Region             | 1.82 | 3.96 |
| Pskov Region                  | 1.82 | 3.45 |
| Krasnodar Territory           | 1.84 | 3.42 |

## Men's average salary to women's average salary ratio by employee category and region of employment

|                          | Management |      | White collar |      | Blue collar |      |
|--------------------------|------------|------|--------------|------|-------------|------|
|                          | 2012       | 2013 | 2012         | 2013 | 2012        | 2013 |
| <b>Mosenergo</b>         |            |      |              |      |             |      |
| Moscow and Moscow Region | 1.12       | 1.13 | 1.18         | 1.21 | 1.26        | 1.24 |
| <b>TGC-1</b>             |            |      |              |      |             |      |
| Saint Petersburg         | 1.02       | 1.04 | 1.15         | 1.08 | 1.32        | 1.31 |
| Leningrad Region         | 1.13       | 1.15 | 1.22         | 1.20 | 1.28        | 1.28 |
| Republic of Karelia      | 1.09       | 1.09 | 1.12         | 1.10 | 1.13        | 1.13 |
| Murmansk Region          |            |      |              |      |             |      |
| Kolsky Branch            | 1.15       | 1.19 | 1.11         | 1.13 | 1.16        | 1.16 |
| Murmanskaya CHP          | 0.9        | 0.84 | 1.15         | 1.17 | 1.18        | 1.19 |
| <b>OGK-2</b>             |            |      |              |      |             |      |
| Tyumen Region            | 1.26       | 1.15 | 1.27         | 1.27 | 1.39        | 1.39 |
| Ryazan Region            | 1.11       | 1.12 | 1.24         | 1.20 | 1.44        | 1.34 |
| Stavropol Territory      | 1.35       | 1.24 | 1.23         | 1.25 | 1.29        | 1.29 |
| Leningrad Region         | 1.28       | 1.30 | 1.32         | 1.33 | 1.67        | 1.57 |
| Chelyabinsk Region       | 1.19       | 1.16 | 1.24         | 1.20 | 1.26        | 1.28 |
| Rostov Region            | 1.21       | 1.17 | 1.22         | 1.20 | 1.34        | 1.42 |
| Krasnoyarsk Territory    | 1.28       | 1.26 | 1.20         | 1.24 | 1.30        | 1.29 |
| Vologda Region           | 1.19       | 1.21 | 1.17         | 1.10 | 1.28        | 1.25 |
| Sverdlovsk Region        | 1.33       | 1.26 | 1.10         | 1.11 | 1.18        | 1.20 |
| Pskov Region             | 1.50       | 1.61 | 1.29         | 1.22 | 1.50        | 1.48 |
| Krasnodar Territory      | 1.27       | 1.43 | 1.13         | 1.19 | 1.38        | 1.42 |

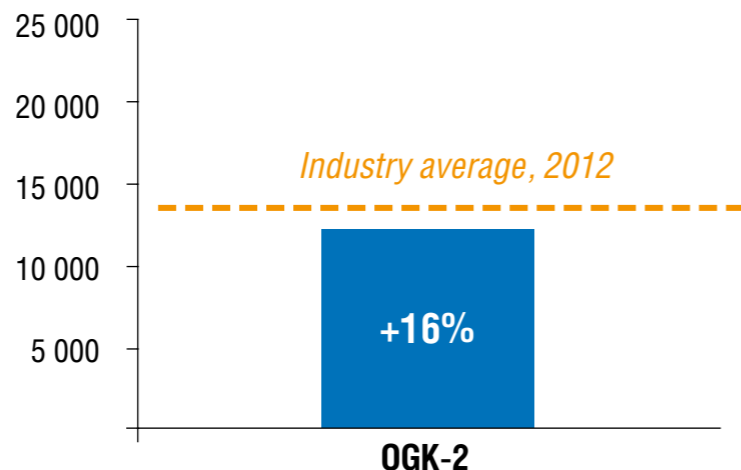
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65 27 OAO Mosenergo calculates this rate for all employees based on Moscow's MWR (as the company is legally registered in Moscow and is subject to the unified wage rate scale), although four power plants of the company are physically located in the Moscow Region.

In 2012–2013, our generating companies continued implementing a new approach to centralised personnel cost planning and improving the system of financial incentives for senior executives. For this purpose, we have developed the Sustainable Growth Support Model for Correlation between Strategic Corporate Development Plans and Personnel Costs. These efforts resulted in additional improvements in the cost management performance of generating companies and a new tool to monitor management decisions on motivation, personnel remuneration and organisational planning. Over the last three years, by applying these tools, Gazprom Energoholding’s generating companies achieved an optimal income to cost ratio of personnel, despite even a worsening environment (introduction of tariff caps).

In particular, Gazprom Energoholding’s generating companies analyse the growth rates of specific revenue (per MW of installed capacity) and remuneration, i.e. the company’s income to cost ratio of personnel, as part of centralised personnel cost planning. We also factor in the increase in generation capacity due to greenfield construction, upgrade and retrofitting projects.

**Wholesale Generation Companies (WGCs)**



**Territorial Generation Companies (TGCs)**

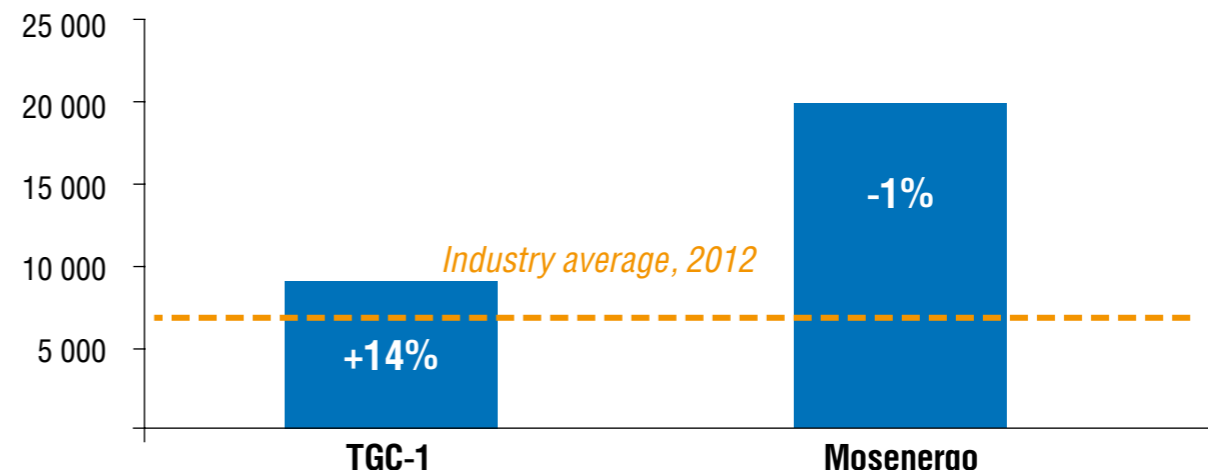
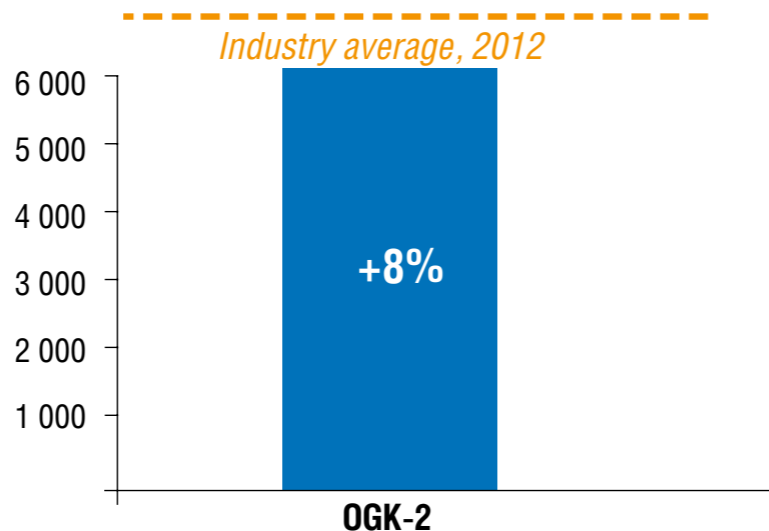


Fig. 55. Year-on-year changes in the revenue / headcount ratio, a measure of labour efficiency, in 2013 (RUB thousand / employee)

The positive trends in the revenue / headcount ratio are as follows: OAO OGK-2 significantly reduced the gap between its performance and the industry-average rate (from 34% to 15%), while OAO TGC increased its lead over the industry average (from 19% to 36%). OAO Mosenergo maintained its lead over the industry average (193%), which is a neutral trend.

**Wholesale Generation Companies (WGCs)**



**Territorial Generation Companies (TGCs)**

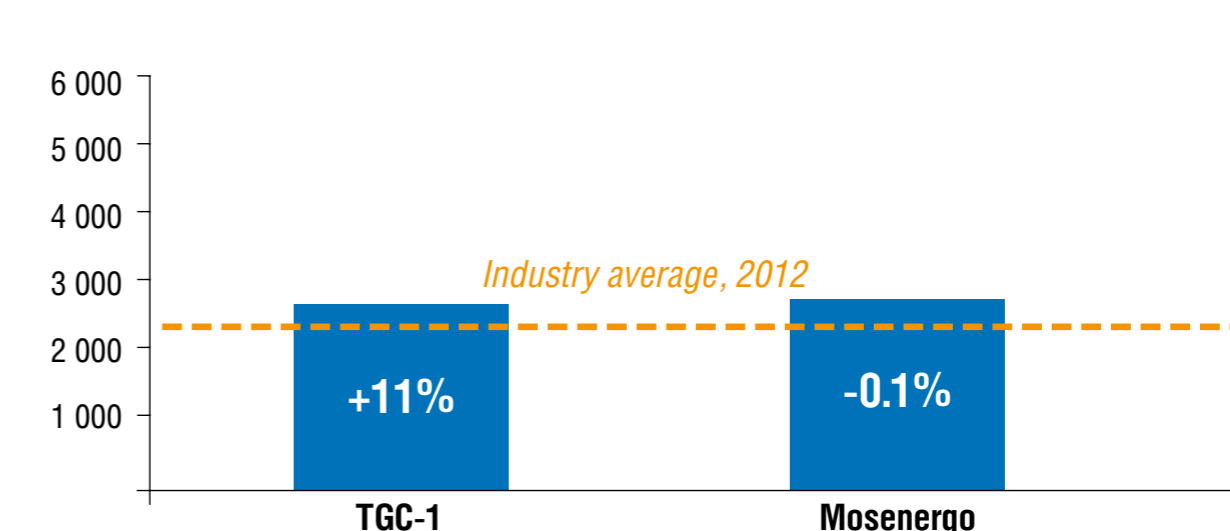


Fig. 56. Year-on-year changes in the revenue / installed capacity<sup>28</sup> ratio, a measure of the growth in the return on assets used to calculate KPIs for top managers in 2013 (RUB thousand / MW)

The positive trends in the revenue / installed capacity are as follows: OAO OGK-2 significantly reduced the gap between its performance and the industry-average rate (from 13% to 4.5%), while OAO TGC-1 increased its lead over the industry average (from 17% to

31%). OAO Mosenergo maintained its lead over the industry average (35%), which is a neutral trend.

This method enabled HR functions to control personnel costs in correlation with the increase /decrease in income of our

generating companies and taking into account the economy of scale effect and the implementation of new technologies, which have a significant impact on both the cost structure and efficiency and overall operating and management performance. The

Research and Development Council of OOO Gazprom Energoholding has praised the results of the Sustainable Growth Support Model’s implementation and nominated the project for OAO Gazprom’s 2014 Science and Engineering Award.

## Protection of employees' interests and rights; collective bargaining

### Protection of the interests and rights of employees; social security

Social security of our employees is a key priority of our HR policy. The concept of social partnership that underlies our policy provides for various social payments, personal insurance, healthcare and supplementary pensions offered to employees. In this regard our social policy provides for the following social benefits and payments:

**To provide our employees with long-term access to healthcare services, in 2013, we signed agreements with OAO SOGAZ INSURANCE for voluntary medical insurance of employees until 2016.**

- **Accident insurance.** Our employees are insured against occupational accidents. Benefits payable under the insurance policy are intended to provide support and ensure adaptation following an insured occurrence.
- **Recreation for employees and/or their children.** Gazprom Energoholding's generating companies offer their employees and/or their children recreation or resort treatment opportunities during the summer season.

**We highly value feedback from our personnel and seek to use all available channels for communication with our employees. They include focus groups, sessions and workshops, surveys and polls (via circulated e-mails), meetings of management of various levels with employees, dedicated hotlines, etc. These activities mainly focus on: assessing personnel satisfaction; adjusting the system of corporate values; improving utility services available to employees; planning medical examinations, etc.**

- **Voluntary medical insurance (VMI) of employees.** Upon the expiry of a probation period, every employee gets access to healthcare services provided under Voluntary Medical Insurance programmes. VMI offers a wide choice of healthcare institutions.

- **Non-government pension plans.** Gazprom Energoholding's generating companies offer Non-Government Employee Pension Plans to their employees.
- **Support to war and homefront veterans of World War II** (retired employees of Gazprom Energoholding's generating companies). As part of our social policy, our generating companies provide annual charitable support to war and homefront veterans of World War II.

### Relations with trade unions and collective bargaining

Relations with trade unions are an important tool to safeguard the interests of employees in our generating companies and maintain a social partnership between the management and the personnel. Shop-floor trade unions in branches of OAO TGC-1 and OAO OGK-2 act as a part of All-Russian Electric Trade Union. Shop-floor trade unions in branches of OAO Mosenergo are part of Moscow City Trade Union Elektroprofsoyuz. Although the main objective of trade unions consists in safeguarding professional, labour, and social and economic rights of employees against violations by the employer, we believe that their benefit to the employer should not be underestimated. For employers, they serve as a "telltale indicator" of the general sentiment in the team, while the trade union's support facilitates the implementation of social initiatives, as well as identification and resolution of issues in the team on the whole and for each employee in particular. Trade unions also represent the interests of our employees in their relations with other organisations that may be important in addressing their needs. The involvement of trade unions of our companies in the activities of the Russian Trilateral Commission on the Regulation of Social and Labour Relations serves as an example of their contribution to upholding and protecting such interests.

Collective bargaining is another key aspect of the relations between generating companies and trade unions. Our collective

bargaining procedure is based on the Russian Labour Code and best industry practices. In developing contractual relations between social partnership stakeholders, we seek to secure social and economic rights and guarantees of employees, increase labour efficiency and productivity, improve work quality, comply with the labour and process discipline, occupational health and safety, and workplace hygiene requirements.

At OAO Mosenergo, OAO TGC-1 and OAO OGK-2, collective agreements cover 100% staff employees of branches. All stakeholders are involved in monitoring compliance with collective agreements via periodical (quarterly / half-yearly / yearly) reports and conferences. The companies have collective bodies in place to discuss matters related to collective agreements, which comprise representatives of employers, employees (trade unions) and in some cases representatives of OOO Gazprom Energoholding. Collective agreements with employees of our generating companies include the following key elements:

- work and leisure time rates; work week, principal and extra leave durations;
- minimum monthly pay rates for Grade 1 operators: determined taking account of the CPI for past periods based on the company's balance sheet capabilities;
- occupational health: employer's commitments on safety, medical examinations, work clothes / footwear, accident insurance, etc.;

- benefits, guarantees and compensations: disability payments; financial and similar aid to employees (for events such as vacation, marriage, the birth of a child, etc.); recreation / medical treatment for employees and their family members; awards; benefits payable to retirees.

Relations of our companies with self-employed businessmen and contractors (legal entities) engaged to perform specific jobs are governed by special agreements entered into between our generating companies and such self-employed businessmen or contractors.

The minimum period of notice to be given to employees on material changes in all generating companies of Gazprom Energoholding is two months, which is in line with the Russian Labour Code's requirements. In our generating companies, collective agreements also provide for prior notice to be given to trade unions on any forthcoming reorganisation, and for information to be provided to them on reorganisation decisions adopted by the meeting of shareholders, within 20 days from the date of relevant decisions.

### Occupational health and safety at workplace

Measures taken by our generating companies on occupational health and safety are fully compliant with the requirements of applicable laws. However, relevant commitments of our companies are additionally set out in Collec-

tive Agreements of the generating companies. In particular, the Occupational Health section of Collective Agreements contains occupational health provisions aimed at protecting the lives and health of employees at work.

Our companies take consistent efforts to ensure protection of their employees' lives and health and reduce the occupational injury rates, focusing on the following areas:

In the reporting period (2012–2013), our companies implemented the following measures as part of the existing OHMS:

● **Mandatory preliminary, periodical and unscheduled medical examinations (inspections):**

In line with the procedure in place at our companies, in 2012–2013, mandatory preliminary examinations were carried out for new hires, and periodical examinations, based on name lists of employees that were subject to periodical examinations. These lists were submitted to territorial authorities of the Federal Service for the Oversight of Consumer Protection and Welfare (Rospotrebnadzor). Employees who complained about health problems were directed to unscheduled medical examinations. Medical examination services for employees of Gazprom Energoholding's generating companies were provided by OOO SOGAZ-Medservice under existing agreements. As part of these efforts, we also held awareness raising meetings, handed out booklets on preventing viral diseases and materials promoting blood donation and healthy lifestyles, and organised vaccination of employees.

● **Workplace assessments for quality of working conditions:**

Pursuant to Order No. 342n On Approval of the Procedure for Assessment of Workplaces for Quality of Working Conditions by the Russian Ministry of Healthcare

and Social Development of 26 April 2011, in 2012–2013, Gazprom Energoholding's generating companies ran assessments of workplaces for quality of working conditions. The results of these workplace assessments included consolidated data sheets; measurement reports and workplace assessment cards, and recommendations on reducing the impact of harmful operating factors to improve the overall working conditions for employees. The companies also drafted action plans for coming years to ensure better and healthier working conditions. Employees operating in harmful and/or hazardous working conditions were paid compensations.

● **Supply of personal protective equipment (PPE), special clothing and footwear to employees:**

In line with the Standard Norms for Supply of Special Work Clothes, Footwear and Other PPE under the Inter-sectoral Rules for Supply of Special Work Clothes, Footwear and Other PPE to Employees (Order No. 290n by the Russian Ministry of Healthcare and Social Development of 01 June 2009), in 2012–2013, all employees of our companies operating in harmful and/or hazardous working conditions or in extreme temperature conditions, or in a polluted environment, were issued relevant PPE free of charge. All PPE issued had been purchased from leading Russian manufacturers and had certificates of conformity.

| Focus areas   | Measures  |
|---|---|
| Administrative and financial support                | <ul style="list-style-type: none"> <li>• supporting the operation of specialised services responsible for occupational health and fire safety;</li> <li>• financing occupational health measures taken under applicable laws;</li> </ul>  |
| Monitoring of the medical condition of employees    | <ul style="list-style-type: none"> <li>• mandatory preliminary, periodical, pre-shift, and pre-trip medical examinations / inspections of employees of relevant categories at the expense of the employer;</li> <li>• preventing the involvement in any work for employees who failed to timely pass a mandatory medical examination;</li> <li>• preventing the involvement of employees, including with their consent, in any work that is counter-indicative for them for health reasons;</li> <li>• recording and analysing occupational diseases of employees; developing and implementing relevant preventive measures.</li> </ul> |
| Healthy and safe work environment                   | <ul style="list-style-type: none"> <li>• creating healthy and safe working conditions at every workplace with subsequent workplace assessment based on parameter measurements;</li> <li>• provision of certified protective clothing, footwear and other personal protective equipment, milk and other equivalent food, detergents and disinfectants (soaps, creams) to employees operating in harmful or hazardous working conditions, or in extreme temperatures or climatic conditions, or in a polluted environment in line with the existing standards.</li> </ul>   |
| Personnel trainings and briefings                   | <ul style="list-style-type: none"> <li>• organising occupational safety trainings, briefings and knowledge tests for employees in line with the established procedure;</li> </ul>   |
| Occupational health and safety control and audit    | <ul style="list-style-type: none"> <li>• organising and exercising in-process control in line with the procedure set out in applicable laws;</li> <li>• running a supplementary cross-audit of occupational health and safety at operating facilities.</li> </ul>   |
| Accident investigation, registration and prevention | <ul style="list-style-type: none"> <li>• running unbiased investigation and registration of accidents, analysing their causes and preparing targeted measures to prevent similar accidents in future.</li> </ul>  |



Fig. 57. In line with the requirements of Russian laws, we provide our employees with special protective clothing, footwear and other personal protective equipment

**• Training in safe occupational practices; briefings (kick-off, primary, refresher, unscheduled):**

In line with the requirements of Article 225 of the Russian Labour Code, Resolution No. 1/29 On Approval of the Procedure for Occupational Safety Training and Testing of Employees' Knowledge of Occupational Safety Requirements by the Russian Ministry of Labour and Ministry of Education of 13 January 2003, GOST 12.0.004-90, Occupational Safety Standards System.

General Rules, and Order No. 49 Rules for Personnel Relations in Companies of the Russian Electric Utility Sector by the Russian Ministry of Fuel and Energy of 19 February 2000, in 2012–2013, our companies briefed their employees on occupational health safety and safety under the existing programmes. All briefings were recorded in briefing logs. A total of 2,840 and 2,961 employees, respectively, were trained in occupational safety in the Group in 2012–2013.

**OAo Mosenergo has in place an awareness framework to communicate to every employee information related to occupational health and injury rate:**

- a safety calendar, Green Cross, is now available to employees as a new visual tool to communicate information concerning the situation with occupational health and injury rate across the company and by branch,
- a weekly Occupational Health and Safety Leaflet is circulated via e-mail, providing information on new regulations, recent accidents, results of occupational health audits, etc.,
- identified breaches of occupational health requirements and critical occupational health issues are discussed in each branch during the weekly Safety Hour.

**• Monitoring of occupational health aspects and safe working conditions**

In 2012–2013, a mobile team of the Occupational Health Service ran periodical (unscheduled) audits to identify breaches of applicable regulatory technical documents, provide occupational health recommendations to branches, and follow up on corrective measures. Meetings were also held on a regular basis to discuss regulatory changes in occupational health.

**• Providing employees with protective food, milk or other equivalent nutrition**

In 2012–2013, our employees were issued free milk or other equivalent food when they were actually working in harmful conditions. These measures are taken pursuant to Article 222 of the Russian Labour Code and Order No.

45n On Approval of Standards and Conditions for Providing Employees Working in Harmful Conditions with Milk or Other Equivalent Food Products Free of Charge, the Procedure for Payment of Compensation in the Amount Equivalent to the Cost of Milk or Other Equivalent Food Products, and the List of Harmful Workplace Factors That Require Preventive Consumption of Milk or Other Equivalent Food Products by the Russian Ministry of Healthcare and Social Development of 16 February 2009.

**OAo Mosenergo is currently implementing the Safe Behaviour Culture project to fully eliminate occupational injuries by deploying a framework of behavioural safety audits and comprehensive personnel training under a certificated programme, Safety in the Workplace.**

**Work-related injuries suffered by employees of the Group's generating companies, 2012–2013**

**Injuries by severity**

|                     | Fatal           |      | Major |      | Minor |      |
|---------------------|-----------------|------|-------|------|-------|------|
|                     | 2012            | 2013 | 2012  | 2013 | 2012  | 2013 |
| Mosenergo           | –               | –    | –     | –    | 4     | 3    |
| TGC-1 <sup>29</sup> | 1 <sup>30</sup> | –    | –     | 4    | 2     | 1    |
| OGK-2               | –               | –    | –     | –    | 1     | 1    |

**Injuries by gender**

|           | Male |      | Female |      |
|-----------|------|------|--------|------|
|           | 2012 | 2013 | 2012   | 2013 |
| Mosenergo | 2    | 1    | 2      | 2    |
| TGC-1     | 3    | 4    | –      | 1    |
| OGK-2     | 1    | 1    | –      | –    |

29 In 2012–2013, no work-related injuries were reported by OAo Murmanskaya CHP.

30 Traffic accidents otherwise than through the employer's fault.

**Injuries by region**

|                          | 2012 | 2013 |
|--------------------------|------|------|
| <b>Mosenergo</b>         |      |      |
| Moscow Metropolitan Area | 4    | 3    |
| <b>TGC-1</b>             |      |      |
| Saint Petersburg         | 1    | 3    |
| Leningrad Region         | 2    | –    |
| Republic of Karelia      | –    | 1    |
| Murmansk Region          | –    | 1    |
| <b>OGK-2</b>             |      |      |
| Moscow                   | –    | –    |
| Tyumen Region            | 1    | –    |
| Ryazan Region            | –    | –    |
| Stavropol Territory      | –    | –    |
| Leningrad Region         | –    | –    |
| Chelyabinsk Region       | –    | –    |
| Rostov Region            | –    | –    |
| Krasnoyarsk Territory    | –    | –    |
| Vologda Region           | –    | –    |
| Sverdlovsk Region        | –    | 1    |
| Pskov Region             | –    | –    |
| Krasnodar Territory      | –    | –    |

Our generating companies investigate accidents resulting in workplace injuries in line with the requirements of Articles 227 to 231 of the Russian Labour Code and Resolution No. 73 On the Approval of Forms of Documents Required for Investigation and

Registration of Workplace Accidents and the Regulations on Specific Requirements to Investigation of Workplace Accidents in Certain Sectors and Organisations by the Russian Ministry of Labour of 24 October 2002.

**Compliance with international occupational health standards**

Despite a relatively low injury rate among our employees, we take pro-active steps to improve the existing Labour Protection Management System (LPMS). As of 01 February 2014, Gazprom Energoholding’s generating companies completed the project to bring their existing LPMS into compliance with national regulatory occupational health requirements, i.e. GOST R 12.0.007-2009 Occupational Safety Standard Systems. Labour Protection Management System in Organisation. General Requirements on Development, Implementation, Audit and Improvement. We

are currently working to bring it into compliance with OHSAS 18001 international standard.

In 2008, Kirishskaya GRES, a branch of OAO OGK-2, was certificated to OHSAS 18001. We plan to run a similar certification in branches of OAO Mosenergo in 2015. We are currently training managers of all branches of the Company in methods of behavioural audit of safe behaviour (with more than 500 employees trained to date).

**Sports and fitness**

Winter and summer athletic competitions (Spartakiads) are a long-standing corporate

tradition of our generating companies. We are confident that sports not only support human health but also develop in our employees qualities like winner’s attitude, team spirit, solidarity and mutual support. These qualities in their turn help improve performance in their jobs.

Over 1,400 employees took part in annual Spartakiads of OAO Mosenergo in 2012–2013. The competitions included: skiing, kettlebells, streetball, swimming, cross-country running, football, futsal, table tennis, and shooting.

OAO OGK-2 alternates winter Spartakiads with summer ones. For example, in 2012, the second Winter Spartakiad was hosted by Surgutskaya GRES-1 (a branch of OAO OGK-2) in Khanty-Mansiysk, with competitions in the following sports: swimming, skis, shooting, and futsal. In 2013, OAO OGK-2 hosted its sixth Summer Spartakiad in the city of Ryazan.

Spartakiads held by our generating companies fully involve both novices and experienced athletes, including those who participated in Spartakiads held by OAO Gazprom Energoholding or OAO Gazprom.



Fig. 58. The team of Novocherkasskaya GRES: the winner of the Summer Spartakiad held in Ryazan

### Raising the quality of human resources

We offer our employees extensive opportunities to unlock their personal potential and achieve career growth. Our key focus areas:

- induction programme for new recruits and mentoring scheme,
- building a unified management system in all our generating companies and implementing a unified personnel appraisal system,
- maintaining a talent pool and transparent principles of talent promotion,
- holding corporate skills and innovative projects contests (in 2012–2013, 5,004 employees of our generating companies took part in annual skills contests, with 241 employees participating in innovative project contests), and

- maintaining a further vocational education framework.

We believe that personnel’s vocational training, retraining and career enhancement are essential to achieving the goals and objectives and ensuring future development of our companies. The Regulations on the System of Further Corporate Vocational Education is the underlying document governing the relations between OOO Gazprom Energoholding and its generating companies in education and development of personnel across the Group’s companies, along with standards for organising vocational training, retraining and career enhancement for the personnel.

In addition to this document, our companies also have in place specialised pro-

grammes for their management, talent pools and high-potential employees, providing training in developing effective management tools, improving personal efficiency and business communication skills, and motivating subordinates to improve their professional level and qualifications. They include the Comprehensive Programme for the Management of Human Resources of OAO Gazprom Energoholding, Its Subsidiaries and Affiliates and the Supplementary Training Programme School of Management.

A Corporate Education Portal was launched in January 2011 to develop the further vocational training system. The Portal helps employees improve their knowledge and skills using advanced distance learning solutions. Additionally, over 4,000 workers

were trained by corporate training centres.

Gazprom Energoholding’s generating companies collaborate with leading educational institutions of Russia, including National Research University Moscow Power Engineering Institute (MPEI), Bauman Moscow State Technical University, Gazprom Corporate Institute, Corporate Energy University (CEU), and Moscow University of Economics and Energy (MUEE). We also maintain relations with regional educational institutions in the areas where our generating companies operate. Training is provided in the form of career enhancement, vocational retraining, short-term workshops and training courses.

More than 90% of the costs related to enrollment in personnel training courses

are covered by our companies. For these purposes, we sign student agreements with employees. In 2012–2013, the total amount of financing for personnel training and development was c. RUB 307 mm. This amount includes RUB 5.9 mm spent on advanced courses for executives and specialists of Gazprom Energoholding in 2013. In line with Russian laws, long-term training programmes provide for job-guaranteed study leaves. In making decisions on sending executives and specialists to training courses, we take account of the training’s scheduled duration, current and future development plans in their companies, and the annual consolidated personnel development plan in Gazprom Energoholding’s generating companies.

#### The average annual number of training hours per employee broken down by personnel category<sup>31</sup>

| Companies       | Management |      | White collar |      | Blue collar |      |
|-----------------|------------|------|--------------|------|-------------|------|
|                 | 2012       | 2013 | 2012         | 2013 | 2012        | 2013 |
| Mosenergo       | 78         | 66   | 74           | 66   | 52          | 59   |
| TGC-1           | 42         | 40   | 72           | 80   | 132         | 125  |
| Murmanskaya CHP | 27         | 14   | 17           | 16   | 57          | 73   |
| OGK-2           | 69         | 74   | 70           | 76   | 54          | 56   |



Fig. 59. Contest for the operating personnel of our power plants

71 31 Our companies did not keep any statistical data on the gender of employees trained in 2012–2013

We hold skills contest for our personnel on an annual basis. 5,004 employees took part in such competitions in 2012–2013. The key objectives of these contests are to improve

the operating personnel's professional competencies in ensuring the energy grid reliability; share best corporate practices in organising and running day-to-day man-

agement of thermal power plant equipment; improve the forms and methods of activities ensuring high quality and reliable equipment maintenance.



Fig. 60. Winners of the first corporate contests for the personnel of unit-based thermal power plants of Gazprom Energoholding's generating companies



Fig. 61. Participant of interregional contests for specialists of OAO TGC-1's thermal power plants



Fig. 62. Contest for the operating personnel of Gazprom Energoholding's power plants



Fig. 63. The opening ceremony of a contest held for the operating staff of unit-based thermal power plants at the Personnel Training Centre of OAO Mosenergo

The team of Novocherkasskaya GRES (OAO OGK-2) won the first prize, while the team of TPP-25 (OAO Mosenergo) came third in the All-Russian Competition held for the operating personnel of 150–300 MW unit power plants, hosted at Zheleznovodsk, the Stavropol Territory, and closed on 21 September 2012. Teams that took part in the competition: OAO Norilsk-Taimyr Energy Company, ZAO Nizhnevartovskaya GRES, OOO Siberian Generating Company, OAO Far-Eastern Generating Company.

Each team consisted of operators who provide twenty-four-hour control of their power plant's power equipment. Over the five days of the event, the participants had to pass through nine rounds of competitions ranging from tests for knowledge of regulatory technical documents and qualifications required from the operating personnel to first medical aid to the injured.

**Recruitment and development of young talent**

Our HR policy aims at maintaining an optimal age mix and ensuring the succession of employee generations as a strategic objective. Below are the key tools we use to attract young talent to our companies:

- regular contacts with educational institutions to attract and recruit high-potential graduates,
- traineeships and internships for students of relevant higher and specialised education institutions,
- participation in Career Fairs and publication of information on career opportunities for graduates on stands in higher education institutions, and in social networks and mass media, and
- targeted induction and development programmes for young talent.

The induction programme for all new employees of our companies, including young specialists, comprises a specialised digital course and additional induction trainings.

We pay specific attention to the professional and career growth of our young talent.

We regularly hold our Contest of Young Talents and Innovators to encourage and support the most gifted and active young specialists. The Contest provides for a multi-tier selection scheme that can be accessed by employees of all units and levels. We also regularly hold conferences and contests within individual functions (Operations, Personnel Management, Capital Construction, etc.).

Although the share of our employees who will retire in the coming five to ten years is low, we care about ensuring professional continuity and succession so that these employees could successfully pass their experience on to recent graduates.

**In 2012–2013, more than 900 students underwent internships at operating facilities of our generating companies and over 170 young specialists advanced in their careers by being promoted.**



Gazprom Energoholding was awarded a diploma and a letter of commendation by the Council on the HR Policy in Energy of the Russian Ministry of Energy for achievements in developing human resources of the energy sector and launching innovative energy awareness resources for students. In particular, the Council praised the My Energy project to promote creative initiatives, professional ambitions and career motivation among young employees.



Fig. 64. School students at an event held as part of the My Energy educational project



Fig. 65. Students of Russian State Geological Prospecting University during a tour of HPP-1

In October 2013, Kirishskaya GRES launched Your Chance, a project which helped 15 graduates of Kirishsky District's schools selected for their physics test results enrol onto training courses held by leading Saint Petersburg universities for the Unified State Examination free of charge and apply for engineering degrees in higher education institutions in 2014.

Experiencing a lack of engineers and technicians, we hope that some of these young people will come back to Kirishi after graduation. So, as a potential employer, we are keen that they should be trained up to the highest standards.

### Preventing corruption among the Company's employees

Although no corrupt practices involving employees of Gazprom Energoholding's generating companies were identified in the reporting period (2012–2013), we take active preventive measures.

On 15 November 2013, OOO Gazprom Energoholding approved its Code of Corporate Ethics that serves as the basis for building a framework to prevent corruption in our generating companies. The document sets out our corporate values and discusses such issues as conflict of interests, nepotism, gifts, relations with competitors and counterparties, combating corruption,

and other critical rules of business conduct. The provisions of the Code of Corporate Ethics are fundamental for all companies of Gazprom Energoholding, including our generating companies (OAO Mosenergo, OAO TGC-1 and OAO OGK-2).

In early 2014, we set up a specialised Corporate Ethics Commission, which is responsible for ensuring compliance with the requirements and provisions of the Code of Corporate Ethics of OOO Gazprom Energoholding. The Commission can be contacted by e-mail or over a hotline.

In the reporting period (2012–2013), the anti-corruption policies in our generating companies were governed by the following documents:

|  | Date of adoption  |
|--|-------------------|
| <b>Mosenergo</b>   |                   |
| Regulations on the Internal Audit Service                | 03 July 2008      |
| Business Ethics Code                                     | 29 September 2011 |
| Regulations on the Procurement Committee                 | 20 December 2011  |
| Regulations on Procurement of Goods, Works, and Services | 15 July 2013      |
| <b>TGC-1</b>   |                   |
| Regulations on the Procurement Committee                 | 09 November 2011  |
| Regulations on the Internal Audit Service                | 11 February 2013  |
| Regulations on Procurement of Goods, Works, and Services | 18 July 2013      |
| <b>Murmanskaya CHP</b>                                   |                   |
| Regulations on the Procurement Committee                 | 26 December 2011  |
| Regulations on Procurement of Goods, Works, and Services | 23 August 2013    |
| <b>OGK-2</b>   |                   |
| Corporate Governance Code                                | 26 September 2006 |
| Regulations on the Procurement Committee                 | 19 December 2011  |
| Code of Business Ethics                                  | 26 April 2012     |
| Regulations on Procurement                               | 28 June 2013      |
| Regulations on Internal Audit                            | 05 July 2013      |

In 2012–2013, 21 employees of OAO Mosenergo were trained in corruption response plans, and 418 employees attended a specialised briefing on anti-corruption behaviour.

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## Social sustainability

### Management's approach to corporate projects that have an impact on society; availability of grievance mechanisms

We pay attention not only to our financial and operating performance but also to the social dimension of our sustainability performance. We actively engage municipal authorities, not-for-profit organisations and local communities, take their interests into account when making our decisions.

Our generating companies participate in sponsorship and charitable initiatives on a regular basis but we only finance projects that have positive social or humanitarian impacts. We do not engage in any political activities and do not finance political parties or organisations.

To pursue its key charitable and sponsorship activities and assist decision making on involvement in social projects OAO OGK-2 established a Commission on Charity and Sponsorship, which considers all applications submitted to the company and requesting charitable support. Subject to financial capabilities of the company, the Commission approves the charitable and sponsorship support programme on an annual basis. For example, the company allocated RUB 8,845.5 thousand in 2012 and RUB 9,615 thousand in 2013 for charitable purposes.

We do not restrict involvement of our employees in social or political activities unless such activities take work time and require the use of our corporate resources.

Our power plants are large industrial facilities and their operations inevitably have an impact on the environment and the social life in the regions where they operate, despite of all preventive measures. The con-

struction of our infrastructure investment projects quite obviously causes inconvenience to local communities. For this reason, every time we start a new construction project at production facilities of our companies, we hold public hearings involving representatives of the general public, regulators, federal and municipal authorities and environmental groups.

### Ensuring reliable energy supply in the short and longer terms

Reliable electricity supply is in our view an essential aspect of social sustainability in the regions where we operate out power plants. Due to the nature of business in our generating companies, most of our large investment projects, while being commercial, focus on developing social infrastructure in the regions where our companies operate, i.e. utility infrastructure that supplies heat and electricity to local households and industrial customers. By constructing and upgrading our power plants, we contribute to higher reliability and stability of energy supply and partially take the load off facilities that are less efficient in terms of fuel costs and have bigger environmental footprint.

Since energy supply reliability is directly linked to the technical condition of our generating capacity and our performance, we constantly focus on the following areas:

- constructing new and upgrading existing fixed assets (decommissioning inefficient facilities and building new generation units),
- implementing new green high-performance technologies with high efficiency ratios (e.g. CCGT),
- running regular periodic inspections of the technical condition of equipment subject to its hazard class (once every three years) and before the high-hazard periods (fire hazard, lightning hazard, spring flood hazard and the cold season), and
- carrying out preventive maintenance and repairs to ensure viability, reliable performance, safety and controllability of electric systems.

These efforts minimise the incidence of electricity or heat supply failures and, if they do occur, help us restore normal energy supply in the shortest time possible.

Public holidays, including the lengthy New Year and Victory Day “vacations” (in January and in May, respectively), are particularly demanding on our power plants. Our employees do not take any days off or leaves for these days and we have a procedure in place for calling backup operating personnel. We also organise twenty-four-hour duty watches by repair personnel who always stay available and ready to arrive at first call.



Fig. 66. Main control room at Svetogorskaya HPP

In the reporting period (2012–2013), OAO Mosenergo, OAO TGC-1 and OAO OGK-2 did not record any problems with electricity or heat supply to their consumers.

On 08 August 2012, heavy rainfalls aggravated the flood situation in the Belomorsky District of the Republic of Karelia, which led to a shutdown of Matkozhnenskaya HPP of the Vyg HPP Cascade. However, the load was promptly redistributed and the emergency situation was contained. As a result, the incident did not affect energy supplies to consumers and did not lead to any notice-

able damage to the local environment. In an effort comparable in scale to a new construction project, the power plant was reconstructed within a very short period of time. Representatives of Gazprom Energoholding and the Federal Environmental, Industrial and Nuclear Supervision Service of Russia (Rostekhnadzor) jointly held a thorough investigation, inspected similar local power plants of the Group's companies, and drafted technical recommendations on improvements to avoid similar situations in future.



Fig. 67. At TPP-21



Fig. 68. A series of occupational safety posters designed by Art. Lebedev Studio for OAO Mosenergo

**Employees of Matkozhnenskaya HPP and the Vyg HPP Cascade were awarded honorary certificates by the Regional Crisis Management Centre of EMERCOM of Russia for Karelia for their participation in the response to the disaster. After the equipment was successfully tested and Hydropower Unit No. 1 of Matkozhnenskaya HPP resumed its operation, the head of the Republic of Karelia issued a letter of gratitude to OAO TGC-1 for active involvement in the response to the disaster in the Belomorsky District.**

In 2012–2013, heat networks connecting CHPs of OAO TGC-1 to consumers and owned by its subsidiary, JSC St. Petersburg Heating Grid, identified c. 50 emergency situations due to heating mains bursts. In all emergency situations, consumers were promptly connected to backup heating mains. On average, repairs took up to two days.

Maintaining and improving the reliability and efficiency of electricity and heat supply requires regular preventive repairs.

In some cases, this implies temporary suspension of operation by our generating facilities. Some of such suspensions occur as part of a pre-approved plan, and some take place as a result of decisions taken on the spot to prevent potential accidents or other emergencies. This, however, does not affect heat and electricity supply to consumers as we promptly redistribute the load across different generating capacities of the Company, including backup facilities.

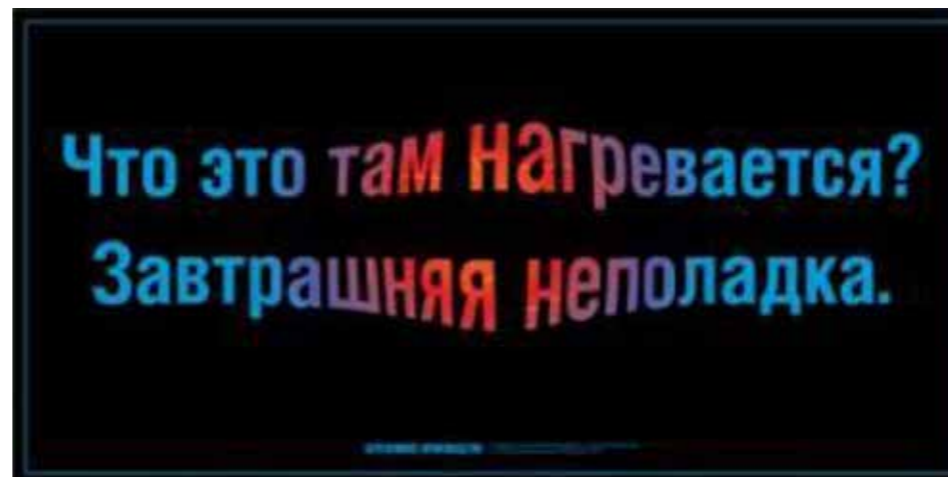


Fig. 69. A series of occupational safety posters designed by Art. Lebedev Studio for OAO Mosenergo



Fig. 70. Demonstrating the operation of a generating unit during a start-up of hydropower unit No. 3 at Lesogorskaya HPP

We use the electric capacity utilization as a wide measure to show the utilisation rate at our power plants subject to scheduled or unscheduled generation suspensions for various reasons.

**Electric capacity utilization, % (by primary energy source)**

|                    | Mosenergo |      | TGC-1                                |      |                 |      | OGK-2 |      |
|--------------------|-----------|------|--------------------------------------|------|-----------------|------|-------|------|
|                    | 2012      | 2013 | Nevsky, Kolsky and Karelsky Branches |      | Murmanskaya CHP |      | 2012  | 2013 |
|                    |           |      | 2012                                 | 2013 | 2012            | 2013 |       |      |
| Gas-fired CHP      | 56.8      | 54.6 | 50.5                                 | 47.6 | –               | –    | –     | –    |
| Coal-fired CHP     | –         | –    | 13.7                                 | 15.7 | –               | –    | –     | –    |
| Fuel oil-fired CHP | –         | –    | –                                    | –    | 16.1            | 15.5 | –     | –    |
| Gas-fired GRES     | –         | –    | –                                    | –    | –               | –    | 43.8  | 41.4 |
| Coal-fired GRES    | –         | –    | –                                    | –    | –               | –    | 29.6  | 22.6 |
| Combined fuel GRES | –         | –    | –                                    | –    | –               | –    | 86.2  | 43.2 |

**Cooperation with local communities on safety**

Although we put various safeguards into place to prevent accidents and emergencies at our power plants, we also run regular drills to practise emergency scenarios and procedures. All relevant efforts in the Group’s generating companies are supervised by the

Emergency and Fire Safety Commission of OOO Gazprom Energoholding, which meets four times a year. Our drills involve not only employees of our generating companies but also representatives of EMERCOM of Russia, various emergency services in

local communities, as well as healthcare institutions and NGOs. We also actively cooperate on these issues with grid companies and other energy generating companies.

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In 2013, Kirishskaya GRES (a branch of OAO OGK-2) won a quality award of the Leningrad Region Government. A diploma for the first prize in the Large Business subcategory of the Industrial Business category and the award's symbol were awarded to Yu. Andreyev, Director of Kirishskaya GRES, by A. Drozdenko, the Governor of the Leningrad Region. To take part in the contest the management of Kirishskaya GRES ran a self-audit of its operations against applicable quality criteria and drafted a special report.

The annual Quality Award of the Leningrad Region Government is an annual competition for excellence in production and marketing of high quality and competitive goods or services, and an important contribution to the development and implementation of advanced quality assurance and management systems. This year the award was held for the 16th time, with 30 contestants.



Fig. 71. Drill at Narvskaya HPP



Fig. 72. Drill at TPP-21 held as part of the All-Russian Civil Defence Drill

In particular, on 04 October 2013, the day of the 81st anniversary of Civil Defence, CHP-21 (OAO Mosenergo) took part in large-scale hands-on drills involving advanced machinery of EMERCOM of Russia. The drill scenario involved commando teams infiltrating CHP-21, blowing up a gas pipeline that supplies the power plant, setting fire to a loaded oil tank car, and destroying the structural elements of a turbine building, with electricity

and heat supply to part of the city interrupted as a result. Units of the Federal Fire Service of the Regional Crisis Management Centre of EMERCOM of Russia promptly arrived at the scene of the “fire”. To fight the fire, they used, among other things, a fire-fighting train and a fire helicopter equipped with a horizontal fire-fighting system. The EMERCOM rescuers retrieved the “victims” from under the collapsed building and rendered first medi-

cal aid. A medical team also promptly arrived at the emergency scene by helicopter to take the victims to a hospital as soon as possible. The power plant quickly “switched” consumers left without heat supply to adjacent heating sources. An emergency of this scale was successfully handled due to well-coordinated efforts by employees of OAO Mosenergo and executive authorities and other organisations of Moscow.



Fig. 73. EMERCOM's advanced machinery used at a drill at TPP-21

On 6 November 2013, Vyborgskaya CHP (OAO TGC-1) hosted a drill to practise interaction between the power plant's operating personnel, district forces of EMERCOM of Russia, the Administration of the Kalininsky District, OOO SMARP and the emergency crew of OAO St. Petersburg Heating Grid. The drill scenario involved a man-made emergency taking place in low outdoor temperatures and threatening to disrupt heat and electricity supply to consumers: a fire breakout covering 100 square metres and destroying the transformer's cooling radiator, with an employee suffering second degree burns when fighting the fire. The parties practised for three hours to coordinate their actions in handling an emergency. The emergency crew of the power plant and rescue crews took joint steps to address the consequences of the emergency by cleaning contaminated surfaces and equipment and taking oil-contaminated soil out to a disposal site. The drill confirmed that the existing emergency prevention and response

plan for CHP is realistic and fully meets the current safety requirements applicable to an energy company.

As part of preparations for the cold season of 2012–2013, a joint emergency management drill was held in Moscow to practise response to interruptions of energy supply to consumers at low outdoor temperatures. The drill involved dispatchers of a branch of SO UPS, OAO, Regional Dispatching Office for the Power System of Moscow and the Moscow Region (Moscow RDO), the operating personnel of Moscow Main Power Transmission Lines Company (a branch of OAO FGC UES), OAO MOEK, duty personnel of the Regional Crisis Management Centre of EMERCOM of Russia for Moscow, government officials and members of local self-government of Moscow, employees of the city's administration services and municipal entities responsible for handling interruptions of energy supply to consumers in low outdoor temperatures. The drill scenario involved damage to a current transformer

and switch equipment, interrupting power supply to four 110 kW substations, disconnecting c. 300 transformer substations, and overloading two 110 kV cable lines. The emergency resulted in a disruption of heat and electricity supply to consumers in the Southern and Southwestern Administrative Areas of Moscow. Under the drill scenario, c. 150,000 residents of the Russian capital, social consumers, healthcare institutions, and industrial, transportation, communications, and public utility facilities were left without electricity supply. During the drill, the participants got training in the procedure for alerting and mobilising staff of emergency response centres; hands-on skills of their dispatch, operating and duty personnel were improved and readiness for emergency prevention and response was assessed. The results confirmed that the personnel of electricity sector facilities in the Moscow Metropolitan Area are ready to sustain operations in a challenging environment of the cold season.



Fig. 74. Emergency response and fire safety drill of the operating personnel at TPP-26

With considerable shares of the energy supply markets in the regions where we operate, we are committed to enhancing energy efficiency not only across our companies but also across regional energy systems. As part of this effort, we actively pursue initiatives to raise awareness among local communities of the issues related to energy saving and engage them on energy efficiency.

**In 2013, OOO Gazprom Energoholding was awarded a Diploma by the Russian Ministry of Energy for achievements in developing human resources of the energy sector and launching innovative energy awareness resources for students.**

### Cooperation with local communities on energy saving

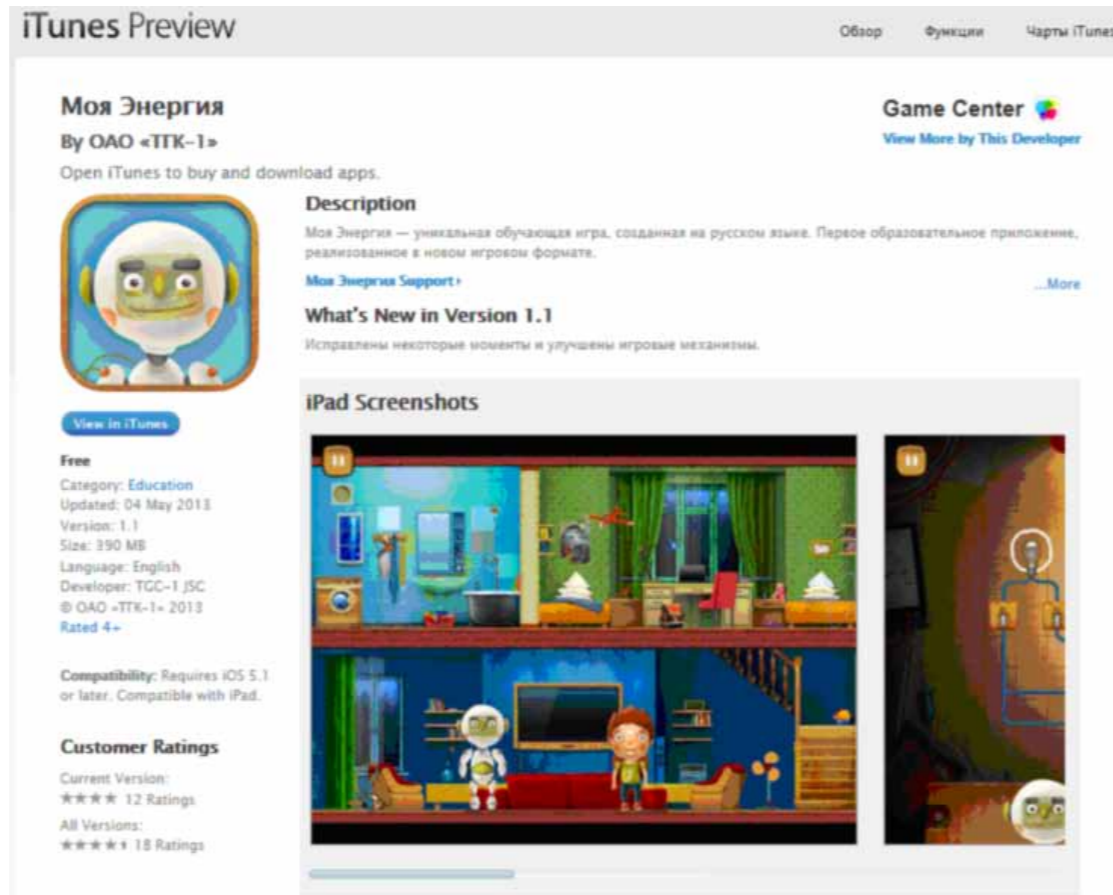


Fig. 75. Educational game app for iPad targeting schoolchildren aged 7-10 years

In particular, the Russian Ministry of Energy specifically praised My Energy, an awareness raising initiative by OAO TGC-1 to teach heat and electricity consumers about lean energy consumption. The project includes a range of activities: contacts with schools and individual teachers; tours of CHPs and HPPs operated by OAO TGC-1; contests for children; and open classes for school students at experimental platforms hosted by interactive science museums and children's centres. An educational course Safe and Efficient Power Consumption, developed by TGC-1's employees as a joint project with the Academy of Postgraduate Education and targeting students and teachers is the core

element of the project. In 2004, the course was included in the school curriculum on Life Safety Fundamentals, and one year later a group of questions based on the course materials was included in the programme of school competitions on Life Safety Fundamentals. In 2010, the course became interactive and moved to a standalone on-line platform. In 2013, we launched an educational game app for iPad targeting schoolchildren aged seven to ten years. My Energy, a game app based on the Safe and Efficient Power Consumption course was successfully tested as a supplement to Environment and Life Safety Fundamentals subjects taught in Russian schools.

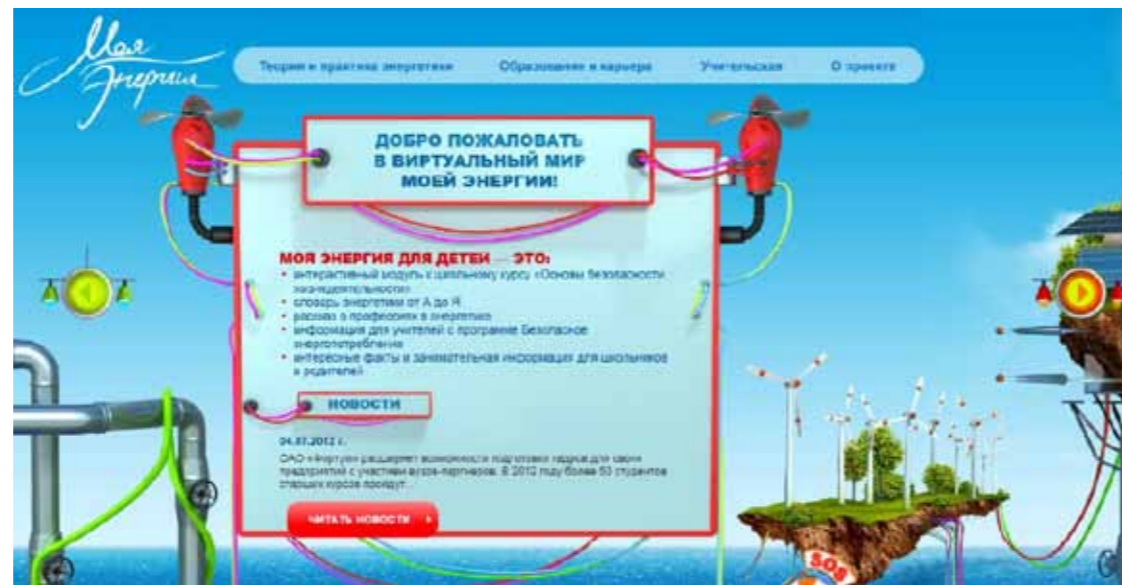


Fig. 76. Standalone on-line platform of the interactive course Safe and Efficient Power Consumption developed by employees of OAO TGC-1 and included in the school curriculum within Life Safety Fundamentals



Fig. 77. Yuzhnaya CHP

In autumn 2013, OAO TGC-1, together with OAO St. Petersburg Heating Grid and the Government of Saint Petersburg, co-sponsored a children’s drawing competition, Say No to Waste of Money – Save Heat and Electricity! The Organising Com-

mittee received 850 drawings on energy saving. Ideas on efficient heat and electricity consumption were shared by pupils and students of childcare centres, community centres and art studios not only from Saint Petersburg and the Leningrad Region, but

also from Petrozavodsk, Sortavala, the Murmansk Region, Novorossiysk and Kaliningrad. The competition award ceremony was held on 22 December 2013, the Day of the Energy Industry.



Fig. 78. Winners of the children’s drawing competition, Say No to Waste of Money – Save Heat and Electricity!, and their drawings

In October 2013, OAO TGC-1 presented its stand on energy efficiency, energy sav-

ing and environmental safety initiatives at the 14th exhibition The Energy Sector of Karelia.

### Cooperation with local communities on the environment

As part of the Year of Ecology announced by OAO Gazprom, OAO Mosenergo held a children’s drawing competition, Mosenergo Cares about the Environment, and a photo

competition, The Sun, Air and Water. Children who participated in the drawing competition were taken on a tour of TPP-20 and were given keepsake gifts.



Fig. 79. Participants in the children’s drawing competition, Mosenergo Cares about the Environment, during a tour of TPP-20



Fig. 80. A drawing by Ivan Khomenko (8 years) submitted to the children’s drawing competition, Mosenergo Cares about the Environment

In May 2013, Petrozavodskaya CHP (OAO TGC-1) held Saturday Community Clean-Up Day, a major event contributing to the general clean-up and urban greening effort at Petrozavodsk, to the benefit of all stakeholders. The CHP's employees cleaned up and made improvements not

only within the territory of the power plant, but also in the adjacent streets, roadsides and wastelands, and planted saplings of viburnum, spiraea, larch, and lilac. Previously, in 2012, the power plant's personnel had planted several dozens of tree and bush saplings.



Fig. 81. Employees of Petrozavodskaya CHP planting a tree

On 27 May 2011, OAO TGC-1, together with Karelenergo, a branch of IDGC of North-West<sup>32</sup>, Karelia Main Power Transmission Lines Company (a branch of FGC UES), and the regional unit of All-Russian Electric Trade Union, opened the Alley of Energy Engineers on the Lake Onega Embankment near the monument of Peter the Great. The Alley is dedicated to the 80th anniversary of Karelia's energy system. This joint initiative was a milestone event for Karelia's leading industry. It symbolised the unity of energy engineers working for the benefit of

local communities. In May 2012, the energy companies continued improving the site by planting several hundreds of bush saplings to make a hedge along the alley. A part of the hedge goes around a metal stele that symbolises the Sun and energy in general. The stele was designed by TGC-1 and forged by Petrozavodsk smiths. The new plantings nicely complemented the previously planted lindens, maples, birches and spherical crack willows. The Alley of Energy Engineers will not fail to become a 'green' symbol of Petrozavodsk.

## Not-for-profit infrastructure projects run by the Company on a pro bono basis

Our generating companies are major employers and taxpayers in the regions where they operate. So it is safe to say that our companies mainly have a positive impact on local communities and the regional economy.

In an extra effort to support local communities, our generating companies also invest in small social infrastructure projects on a pro bono basis. These investments are too minor to be onerous on the balance sheets of our companies and cannot significantly affect the financial stability of our business. At the same time, they have a great social impact, both enhancing the quality of life for local communities and boosting the image of our companies.

They include, among others, a new free ice rink in the Gubernsky Park of Petrozavodsk, constructed by OAO TGC-1. The ice rink was launched on 23 January 2014, but its construction started immediately after low temperatures set in autumn 2013. Ice quality checks, maintenance and ground cleaning were performed throughout the winter. We hope that the new ice rink has contributed to the revival of athletic traditions of Petrozavodsk.

Another example is the opening of the Energetik Cultural Centre in the village of Murmashi on 17 May 2013. The Cultural Centre was built in 1936 and was the hub of social life not only for Murmashi but also for the entire Kolsky District of the Murmansk Re-

gion. However, on 08 June 1997, the building was destroyed by a fire. Only the walls survived. In 2011, a quadripartite agreement was signed between the Government of the Murmansk Region, the Administration of the village of Murmashi, Kolenergo (a branch of IDGC of the Northwest) and OAO TGC-1 to restore the Cultural Centre. Under the agreement, OAO TGC-1 purchased equipment for the assembly hall of the Cultural Centre. The rebuilding project started in 2011, with a permit to commission the building obtained in February 2013. We expect the life in the village to become much richer now in exciting events and activities.



Fig. 82. Energetik Cultural Centre, village of Murmashi, Murmansk Region



Fig. 83. The ribbon-cutting ceremony for Energetik Cultural Centre



Cooperation with local communities on culture and sports

Our generating companies are fully involved in the cultural life of local communities in the areas where they operate.

• The Group's generating companies sponsor and organise cultural and sports events.

In winter 2012–2013, as it did in previous years, OAO TGC-1 co-organised Saint Petersburg Christmas Fair, held on the Ostrovsky Square. Using Pushkin's verse, Ships of All Flags Will Come to Us! as its slogan, the Fair took place from 21 December 2012 to 14 January 2013 with the support from the Government of Saint Petersburg,

foreign consulates and major Russian and foreign businesses. OAO TGC-1 sponsored provision of an ice rink. The Fair highlighted national festive traditions of 18 countries including Russia, Belarus, Ukraine, Turkmenistan, Armenia, Belgium, the Great Britain, Germany, Italy, Spain, the Czech Republic, Switzerland, Sweden, Lithuania, Slovakia, the United States, China and India. The organisers offered the city's residents an action-packed entertainment programme with music and dance shows, contests and folk games.



Fig. 84. An ice rink at the Fair held under the slogan Ships of Flags Will Come to Us!

In December 2013, OAO TGC-1 and Komsomolskaya Pravda newspaper jointly held Open Classes for the Day of the Energy Industry at the International Lyceum in Murmansk and at School No. 9 in Kandalaksha. Students learned about 17 hydropower plants located beyond the Arctic Circle, about the trade of an energy engineer, the training opportunities offered by educational institutions of the Region and Russia, and about employment prospects. Over 1,000 students from the Murmansk Region, aged 14-15 years, learned that HPPs can be built underground, that electricity can be exported to other

countries, and that energy engineers are in high demand in today's world. In the run-up to the launch of this series of open classes, Komsomolskaya Pravda – Murmansk published an article presenting the initiative. On 10 December 2013, the newspaper published a full geography lesson prepared by employees of OAO TGC-1, the leading energy supplier in the Northwest of Russia. The lesson also included a home assignment. Those who successfully completed the assignment were given keepsake gifts by OAO TGC-1 and Komsomolskaya Pravda.



Fig. 85. Participants of the skiing competition held with the support of Gazprom Energoholding's generating companies

The Kolsky Branch (OAO TGC-1) and Zelenoborsky Branch of Murmansk Region Specialised Sports School for Children and Youth of the Olympic Reserve for Winter Sports jointly run an annual skiing competition for children and teenagers, the Cup of the Kolsky Branch of OAO TGC-1. These are individual and team competitions held to promote, develop and support skiing in the

Murmansk Region. Athletes born in 1994–2000 were admitted to the competition. The Cup was first held in 2010–2011. The competition became a real festival of sports. It offers entertainment activities for all participants and spectators, including snowmobile rides and paintball. Outdoor festivities are held on the central square of the village during the competition.

On 16 March 2013, the village of Rajakoski of the Pechengsky District in the Murmansk Region hosted a traditional 17th Ski Track of Friendship for the Bar-enters Sea countries, a unique mass participation ski race across the territory of three neighbouring countries: Russia, Finland and Norway. About 3,000 people took part in the Ski Track of Friendship in 2013. OAO TGC-1 acted as a sponsor and official partner of this international race. The participants crossed three borders within several hours. Since 1994, the Ski Track of Friendship is opened by border guards of the three countries, followed by professional and amateur athletes. The race is 12 km long, including 7 km in Russia, 4 km in Norway and 1 km in Finland.



Fig. 86. Open lessons, attributed to the Power Generation Day in 2013



Fig. 87. Classes at the Umnikum Centre

Hour of Power, a new joint project by OAO TGC-1 and Interactive Scientific and Entertainment Centre Umnikum, was launched in 2012. The project's goal is to teach safe energy consumption to children and school students and promote the Safe and Efficient Energy Consumption school programme in Saint Petersburg. During weekly practical lessons and lectures held in a unique exhibition centre, participants of the Energy Hour

listened to presenters talk about complex phenomena and processes in an entertaining way, using a simple language. The programme seeks to promote interaction between energy professionals and students of Saint Petersburg schools that run Life Safety Fundamentals lessons, as well as students of the Day Centre for the Rehabilitation of Unattended Children and orphanages of Saint Petersburg and the Leningrad Region.

• **The assets owned by Gazprom Energoholding's generating companies include sites of cultural and historical heritage.**

P. G. Smidovich HPP-1 (OAO Mosenergo), together with Garage Museum of Contemporary Art, took part in A City Outing, a project run by the Department of Cultural Heritage

of Moscow. On 14 June 2013, Marianna Yevstratova, Professor at the Moscow Branch of the International Academy of Architecture (IAAM), led a tour of the historical power plant for the general public.

In February 2012, OAO Mosenergo invited popular bloggers to its HPP-1, and

in May 2012, a similar tour was held by OAO Mosenergo at its TPP-26 to promote the electricity sector and draw the public's attention to the issue of preserving industrial sites of cultural and historical value.



Fig. 88. Participants of an excursion for photo-bloggers



Fig. 89. P. G. Smidovich HPP-1

## Contacts

|                           | Contact person  | Contact details   |
|---------------------------|---|---|
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## GRI Content Index:

Table of Compliance by Standard Reporting Elements in Accordance with the “G4 Sustainability Reporting Guidelines” and Indicators of the Electric Utilities Sector Disclosures

| GRI (G 4.0.) Indicator              | Title of GRI (G 4.0.) Indicator  | Placement in the Report, Comments<br>Chapter  | Page           | External Assurance  |
|-------------------------------------|--|---|----------------|---|
| <b>GENERAL STANDARD DISCLOSURES</b> |  |   |                |   |
| G4-1                                | Statement from the most senior decision-maker of the organization  | CEO Statement   | pp. 4-7        | no  |
| G4-2                                | Description of key impacts, risks, and opportunities   | Stakeholder Relations: Organisation’s approach to risk management   | pp. 28-31      | no  |
| G4-3                                | The name of the organization   | About Our Companies: Business map   | p. 8           | no  |
| G4-4                                | The primary brands, products, and services   | About Our Companies: Business map   | pp. 8-9        | no  |
| G4-5                                | The location of the organization’s headquarters  | About Our Companies: Business map   | p. 8           | no  |
| G4-6                                | The number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report                    | About Our Companies: Business map   | pp. 9-10       | no  |
| G4-7                                | The nature of ownership and legal form   | About Our Companies: Business map   | p. 8           | no  |
| G4-8                                | The markets served   | About Our Companies: Business map   | pp. 9-11       | no  |
| G4-9                                | The scale of the organization  | About Our Companies: Business map<br>About Our Companies: Company overview  | p. 10<br>p. 12 | no  |
| G4-10                               | The total number of employees by different breakdowns  | Labour Sustainability: Corporate human resources<br>Comment: A portion of the organization’s work performed by workers who are legally recognized as self-employed, or by individuals other than employees or supervised workers, including employees and supervised employees of contractors is not substantial. Our companies do not face significant seasonal variations in employment numbers | pp. 62-63      | no  |
| G4-11                               | The percentage of total employees covered by collective bargaining agreements  | Labour Sustainability: Protection of employees’ interests and rights; collective bargaining   | p. 67          | no  |
| G4-12                               | The organization’s supply chain  | About Our Companies: Corporate supply chain   | pp. 15-16      | no  |
| G4-13                               | Significant changes during the reporting period  | About Our Companies: Material changes in the organisation during the reporting period   | pp. 21-22      | no  |
| G4-14                               | Whether and how the precautionary approach or principle is addressed by the organization (Principle 15 of ‘The Rio Declaration on Environment and Development’)  | Stakeholder Relations: Organisation’s approach to risk management   | p. 28          | no  |
| G4-15                               | Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses   | Stakeholder Relations: Ways of stakeholder interaction<br>Comment:<br>We subscribe to:<br>– environmental management systems - ISO 14001:2004;<br>– ISO 9001:2008 when assessing the reliability and trustworthiness of potential suppliers.  | pp. 26-27      | Assured by valid certificates from independent audit companies (in most affiliates) |
| G4-16                               | Memberships of associations (such as industry associations) and national or international advocacy   | About Our Companies: Membership in organisations  | pp. 19-20      | no  |
| G4-17                               | List of all entities included in the organization’s consolidated financial statements or equivalent documents. Entities included in the organization’s consolidated financial statements or equivalent documents, but not covered by the report. | About Our Companies: Business units included in the consolidated financial statements   | p. 17          | no  |

|       |  |  |    |       |  |   |   |
|-------|--|--|----|-------|--|---|---|
| G4-18 | The process for defining the report content and the Aspect Boundaries.     | <p>Report Profile p. 3</p> <p>Implementation of the Reporting Principles for Defining Report Content by the organization p. 23</p>   | no | G4-20 | The Aspect Boundary for each material Aspect | <p>Report Profile p. 3</p> <p>About Our Companies: Business units included in the consolidated financial statements p. 17</p> | no  |
|       |  | <p>Comment:</p> <p>When defining the report content (including the list of Aspects, covered in the report), we applied the Reporting Principles for Defining Report Content, listed in the G4 Sustainability Reporting Guidelines:</p> <ul style="list-style-type: none"> <li>-The Principle of Stakeholder Inclusiveness;</li> <li>-The Principle of Sustainable Development Context;</li> <li>-The Principle of Materiality;</li> <li>-The Principle of Completeness.</li> </ul>   |    |       |  |   | <p>Comment:</p> <ul style="list-style-type: none"> <li>– All material Aspects identified in the process for defining report content and covered in the report are material for three generating companies of Gazprom Energoholding Group (OAO Mosenergo, OAO TGC-1, OAO OGK-2), including all their affiliates located in different regions of Russian Federation and for generating subsidiary of OAO TGC-1 – OAO Murmanskaya CHPP.</li> <li>– For subsidiaries (OAO Mosenergo: LLC TSK Mosenergo, LLC Centralniy remontno-mekhanicheskiy zavod, LLC OGK-Investprojekt, LLC Teploenergoremont, LLC Teploenergoremont-Moscow, OJSC Remont in-genernyh kommunikaciy, LLC Energo-Kran, Autonomous Non-Commercial Organisation KvaliTEK; OAO TGC-1: JSC St. Petersburg Heating Grid; OAO OGK-2: LLC OGK-Investprojekt, LLC OGK-2 Finance, LLC Center 112) only Aspect “Economic Performance” is material.</li> <li>– There are no specific limitations regarding the Aspect Boundary within the organization.</li> </ul> |
| G4-19 | The material Aspects identified in the process for defining report content | <p>Category “Economic”:</p> <ul style="list-style-type: none"> <li>- Aspect “Economic Performance”;</li> <li>- Aspect “Market Presence”;</li> <li>- Aspect “Indirect Economic Impacts”.</li> </ul> <p>Category “Environmental”:</p> <ul style="list-style-type: none"> <li>- Aspect “Materials”;</li> <li>- Aspect “Energy”;</li> <li>- Aspect “Water”;</li> <li>- Aspect “Emissions”;</li> <li>- Aspect “Effluence and Waste”;</li> <li>- Aspect “Compliance”;</li> <li>- Aspect “Overall”;</li> <li>- Aspect “Environmental Grievance Mechanisms”.</li> </ul> <p>Category “Social”:</p> <ul style="list-style-type: none"> <li>- Aspect “Employment”;</li> <li>- Aspect “Labor/Management Relations”;</li> <li>- Aspect “Occupational Health and Safety”;</li> <li>- Aspect “Training and Education”;</li> <li>- Aspect “Diversity and Equal Opportunities”;</li> <li>- Aspect “Equal Remuneration for Women and Men”;</li> <li>- Aspect “Local Communities”;</li> <li>- Aspect “Anti-corruption”;</li> <li>- Aspect “Public Policy”.</li> </ul> | no |       |  |   |   |

|       |   |   |            |    |  |       |   |                |      |    |   |
|-------|---|---|------------|----|--|-------|---|----------------|------|----|---|
| G4-21 | The Aspect Boundary outside the organization for each material Aspect   | Report Profile  | p. 3       | no | <p>All selected Aspects are material inside our generating companies.</p> <p>There is a list of selected aspects, material both inside and outside of our generating companies in every region of our activities:</p> <p>Category “Economic”:</p> <ul style="list-style-type: none"> <li>– Aspect “Economic Performance” – material for shareholders, investors, lenders and rating agencies, goods and service suppliers;</li> <li>– Aspect “Market Presence” – material for local population, local authorities, trade unions;</li> <li>– Aspect “Indirect Economic Impacts” – material for local population, local authorities, wholesale heat, electricity, and capacity buyers including guaranteeing suppliers and major industrial consumers.</li> </ul> <p>Category “Environmental”:</p> <ul style="list-style-type: none"> <li>– Aspect “Materials” – material for environmental organisations, goods and service suppliers, shareholders, investors and lenders;</li> <li>– Aspect “Energy” – material for shareholders, investors, coal and gas suppliers, sectoral regulatory authorities;</li> <li>– Aspects “Water”, “Emissions”, “Effluence and Waste”, “Compliance”, “Overall”, “Environmental Grievance Mechanisms” – material for local population, civil society organisations and local authorities, environmental organisations.</li> </ul> <p>Category “Social”:</p> <ul style="list-style-type: none"> <li>– Aspects “Employment”, “Labor/Management Relations”, “Occupational Health and Safety”, “Training and Education”, “Diversity and Equal Opportunities”, “Equal Remuneration for Women and Men” – material for local population, civil society organisations and local authorities, sectoral regulatory authorities, trade unions;</li> <li>– Aspect “Local Communities” – material for local population, civil society organisations and local authorities;</li> <li>– Aspect “Anti-corruption” – material for goods and service suppliers, trade unions;</li> <li>– Aspect “Public Policy” – material for local population, civil society organisations and local authorities</li> </ul> | G4-22 | The effect of any restatements of information provided in previous reports, and the reasons for such restatements | Report Profile | p. 3 | no | <p>Comment: We do not report about restatements of information provided in previous reports as this is the first sustainability report, prepared by generating companies of Gazprom Energoholding Group (OAO “Mosenergo”, OAO “TGC-1”, OAO “OGK-2”) according to principles and methodology of GRI.</p> |
| G4-23 | Significant changes from previous reporting periods in the Scope and Aspect Boundaries  | Report Profile  | p. 3       | no | <p>Comment: We do not report about significant changes from previous reporting periods in the Scope and Aspect Boundaries as this is the first sustainability report, prepared by generating companies of Gazprom Energoholding Group (OAO “Mosenergo”, OAO “TGC-1”, OAO “OGK-2”) according to principles and methodology of GRI.</p>  |       |   |                |      |    |   |
| G4-24 | The list of stakeholder groups engaged by the organization  | Stakeholder Relations: Key stakeholder groups                     | p. 23      | no |  |       |   |                |      |    |   |
| G4-25 | The basis for identification and selection of stakeholders with whom to engage  | Stakeholder Relations: Key stakeholder groups                     | p. 23      | no |  |       |   |                |      |    |   |
| G4-26 | The organization’s approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process | Stakeholder Relations: Ways of stakeholder interaction            | pp. 24, 27 | no |  |       |   |                |      |    |   |
| G4-27 | Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns   | Stakeholder Relations: Organisation’s approach to risk management | p. 28      | no |  |       |   |                |      |    |   |
| G4-28 | Reporting period for information provided   | Report Profile  | p. 3       | no |  |       |   |                |      |    |   |

|       |   |   |           |    |
|-------|---|---|-----------|----|
| G4-29 | Date of most recent previous report   | Report Profile<br>Comment: We do not report the date of most recent previous report as this is the first sustainability report, prepared by generating companies of Gazprom Energoholding Group (OAO "Mosenergo", OAO "TGC-1", OAO "OGK-2") according to principles and methodology of GRI. | p. 3      | no |
| G4-30 | Reporting cycle   | Report Profile  | p. 3      | no |
| G4-31 | The contact person for questions regarding the report or its contents   | Contacts  | p. 83     | no |
| G4-32 | The 'in accordance' option the organization has chosen. The GRI Content Index for the chosen option. The reference to the External Assurance Report, if the report has been externally assured. | Указатель содержания GRI:<br>GRI Content Index:<br>Table of Compliance by Standard Reporting Elements in Accordance with the "G4 Sustainability Reporting Guidelines" and Indicators of the Electric Utilities Sector Disclosures   | pp. 84-90 | no |
|       |   | Report Profile  | p. 3      |    |
| G4-33 | The organization's policy and current practice with regard to seeking external assurance for the report   | Report Profile  | p. 3      | no |
| G4-34 | The governance structure of the organization, including committees of the highest governance body, committees responsible for decision-making on economic, environmental and social impacts     | About Our Companies: Corporate governance structure   | pp. 17-19 | no |
| G4-56 | The organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics   | About Our Companies: Corporate values, principles, standards and rules of conduct   | p. 19     | no |

| SPECIFIC STANDARD DISCLOSURES      |  |  |                             |    |
|------------------------------------|--|--|-----------------------------|----|
| Category "Economic"                |  |  |                             |    |
| G4-DMA                             |  | Economic Sustainability: Management's approach to ensure economic sustainability within the organisation and investment decision-making  | p. 32                       | no |
| Aspect "Economic Performance"      |  |  |                             |    |
| G4-EC1                             | Direct economic value generated and distributed  | Economic Sustainability: Financial and economic performance  | pp. 33-34                   | no |
| G4-EC2                             | Financial implications and other risks and opportunities for the organization's activities due to climate change | Environmental Sustainability: Climate change<br>Stakeholder Relations: Organisation's approach to risk management  | p. 52<br>p. 29              | no |
| G4-EC4                             | Financial assistance received from government  | Economic Sustainability: Government support received by the Company over the reporting period  | p. 41                       | no |
| Aspect "Market Presence"           |  |  |                             |    |
| G4-EC5                             | Ratios of standard entry level wage compared to local minimum wage at significant locations of operations        | Labour Sustainability: Staff remuneration  | p. 65                       | no |
| Aspect "Indirect Economic Impacts" |  |  |                             |    |
| G4-EC7                             | Development and impact of infrastructure investments and services supported                                      | Economic Sustainability: Infrastructure investment projects<br>Social sustainability: Not-for-profit infrastructure projects run by the Company on a pro bono basis<br>Economic Sustainability: Financial and economic performance | pp. 36-38<br>p. 80<br>p. 33 | no |
| Category "Environmental"           |  |  |                             |    |
| G4-DMA                             |  | Environmental Sustainability: Management's approach to environmental aspects of the Company's activities   | pp. 42-44                   | no |

| <b>Aspect “Materials”</b>           |   |  |                        |    |
|-------------------------------------|---|--|------------------------|----|
| G4-EN1                              | Materials used by weight or volume                                | Environmental Sustainability: Fuel use and energy efficiency<br>Environmental Sustainability: Water management<br>Comment: Our heat and electricity generation process predetermines our use of various fuels (gas, fuel oil and coal) as the core feedstock and our considerable water consumption for process and auxiliary purposes | pp. 44-46<br>pp. 54-56 | no |
| <b>Aspect “Energy”</b>              |   |  |                        |    |
| G4-EN3                              | Energy consumption within the organization                        | Environmental Sustainability: Fuel use and energy efficiency   | pp. 44-45              | no |
| G4-EN5                              | Energy intensity  | Environmental Sustainability: Fuel use and energy efficiency   | p. 46                  | no |
| G4-EN6                              | Reduction of energy consumption                                   | Environmental Sustainability: Fuel use and energy efficiency   | pp. 47-48              | no |
| <b>Aspect “Water”</b>               |   |  |                        |    |
| G4-EN8                              | Total water withdrawal by source                                  | Environmental Sustainability: Water management   | p. 54                  | no |
| G4-EN10                             | The total volume of water recycled and reused by the organization | Environmental Sustainability: Water management   | p. 54                  | no |
| <b>Aspect “Emissions”</b>           |   |  |                        |    |
| G4-EN15                             | Direct greenhouse emissions                                       | Environmental Sustainability: Pollutant and GHG emissions  | p. 49                  | no |
| G4-EN18                             | Greenhouse gas emissions intensity                                | Environmental Sustainability: Pollutant and GHG emissions  | p. 49                  | no |
| G4-EN19                             | Reduction of greenhouse gas emissions                             | Environmental Sustainability: Pollutant and GHG emissions  | pp. 51-52              | no |
| G4-EN21                             | NOX, SOX and other significant air emissions                      | Environmental Sustainability: Pollutant and GHG emissions  | pp. 50-51              | no |
| <b>Aspect “Effluence and Waste”</b> |   |  |                        |    |
| G4-EN22                             | Total water discharge   | Environmental Sustainability: Water management   | p. 55                  | no |
| G4-EN23                             | Total weight of waste by type and disposal method                 | Environmental Sustainability: Industrial waste generation  | pp. 57-59              | no |

| <b>Aspect “Compliance”</b>                            |   |   |                    |    |
|---|---|---|--------------------|----|
| G4-EN29   | Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations | Environmental Sustainability: Fines and non-financial penalties imposed on the Company for violation of environmental laws  | p. 59              | no |
| <b>Aspect “Overall”</b>                               |   |   |                    |    |
| G4-EN31   | Total environmental protection expenditures and investments by type   | Environmental Sustainability: Environmental costs and investments   | p. 60              | no |
| <b>Aspect “Environmental Grievance Mechanisms”</b>    |   |   |                    |    |
| G4-EN34   | Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanism                        | Environmental Sustainability: Environmental complaints received by the companies in 2012–2013   | p. 61              | no |
| <b>Category “Social”</b>                              |   |   |                    |    |
| <b>Sub-category “Labor Practices and Decent Work”</b> |   |   |                    |    |
| G4-DMA  |   | Labour Sustainability: Management’s approach to HR policy and occupational health and safety  | p. 62              | no |
| <b>Aspect “Employment”</b>                            |   |   |                    |    |
| G4-LA1  | Total number of new employee hires and employee turnover by age group, gender and region  | Labour Sustainability: Corporate human resources  | p. 64              | no |
| <b>Aspect “Labor/Management Relations”</b>            |   |   |                    |    |
| G4-LA4  | Minimum notice periods regarding operational changes, including whether these are specified in collective agreements                      | Labour Sustainability: Occupational health and safety at workplace  | p. 67              | no |
| <b>Aspect “Occupational Health and Safety”</b>        |   |   |                    |    |
| G4-LA6  | Rates of injury   | Labour Sustainability: Occupational health and safety at workplace  | pp. 69-70          | no |
| G4-LA8  | Health and Safety Topics Covered in Formal Agreements with Trade Unions   | Labour Sustainability: Protection of employees’ interests and rights; collective bargaining<br>Labour Sustainability: Occupational health and safety at workplace | p. 67<br>pp. 68-69 | no |



| <b>Aspect “Training and Education”</b>               |  |   |           |    |
|--|--|---|-----------|----|
| G4-LA9   | Average hours of training per year per employee by gender, and by employee category  | Labour Sustainability: Raising the quality of human resources   | p. 71     | no |
| G4-LA10  | Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career ending                     | Labour Sustainability: Raising the quality of human resources   | pp. 71-72 | no |
| <b>Aspect “Diversity and Equal Opportunities”</b>    |  |   |           |    |
| G4-LA12  | Composition of governance bodies and breakdown of employees per employee category according to gender, age, minority group membership, and other indicators of diversity | Labour Sustainability: Corporate human resources  | p. 63     | no |
| <b>Aspect “Equal Remuneration for Women and Men”</b> |  |   |           |    |
| G4-LA13  | Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation   | Labour Sustainability: Staff remuneration   | p. 65     | no |
| <b>Sub-category “Society”</b>                        |  |   |           |    |
| G4-DMA   |  | Social sustainability: Management’s approach to corporate projects that have an impact on society; availability of grievance mechanisms   | p. 74     | no |
| <b>Aspect “Local Communities”</b>                    |  |   |           |    |
| G4-SO1   | Percentage of operations with implemented local community engagement, impact assessments, and development programs   | Social sustainability: Cooperation with local communities on safety   | pp. 76-77 | no |
|  |  | Social sustainability: Cooperation with local communities on energy saving  | pp. 78-79 |    |
|  |  | Social sustainability: Cooperation with local communities on the environment  | pp. 79-80 |    |
|  |  | Social sustainability: Cooperation with local communities on culture and sports   | pp. 81-82 |    |
|  |  | Comment: 100% of our generating companies’ affiliates in different regions took part in implementing local community engagement and development programs. We do not implement any special impact assessments programs |           |    |

| <b>Aspect “Anti-corruption”</b>                                       |  |  |           |    |
|---|--|--|-----------|----|
| G4-SO4  | Communication and training on anti-corruption policies and procedures  | Labour Sustainability: Preventing corruption among the Company’s employees   | p. 73     | no |
| <b>Aspect “Public Policy”</b>   |  |  |           |    |
| G4-SO6  | Total monetary value of political contributions by country and recipient/beneficiary   | Social sustainability: Management’s approach to corporate projects that have an impact on society; availability of grievance mechanisms  | p. 74     | no |
| <b>GENERAL STANDARD DISCLOSURES FOR THE ELECTRIC UTILITIES SECTOR</b> |  |  |           |    |
| EU1   | Installed capacity, broken down by primary energy source and by regulatory regime  | About Our Companies: Company overview  | p. 13     | no |
| EU2   | Net energy output broken down by primary energy source and by regulatory regime  | About Our Companies: Company overview  | p. 14     | no |
| EU3   | Number of residential, industrial, institutional and commercial customer accounts  | About Our Companies: Company overview<br>Comment: We have no information on exact number of residential, industrial, institutional and commercial customers, as our generating companies trade electric energy on the wholesale market | p. 15     | no |
| EU4   | Length of above and underground transmission and distribution lines by regulatory regime                                     | Environmental Sustainability: Fuel use and energy efficiency   | p. 46     | no |
| <b>SPECIFIC STANDARD DISCLOSURES FOR THE ELECTRIC UTILITY SECTOR</b>  |  |  |           |    |
| <b>Category “Economic”</b>  |  |  |           |    |
| <b>Aspect “Availability and Reliability”</b>                          |  |  |           |    |
| G4-DMA (former EU6)   | Management approach to ensure short and long-term electricity availability and reliability                                   | Social sustainability: Ensuring reliable energy supply in the short and longer terms   | pp. 74-76 | no |
| EU10  | Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime | Economic Sustainability: Increased demand from private, commercial, institutional, and industrial consumers  | pp. 34-35 | no |
|   |  | Economic Sustainability: Infrastructure investment projects  | pp. 36-38 |    |

| <b>Aspect “Demand-Side Management”</b>                |   |  |           |    |
|---|---|--|-----------|----|
| G4-DMA (former EU7)                                   | Demand-side management programs including residential, commercial, institutional and industrial programs                        | Economic Sustainability: Increased demand from private, commercial, institutional, and industrial consumers  | pp. 34-35 | no |
| <b>Aspect “Research and Development”</b>              |   |  |           |    |
| G4-DMA (former EU8)                                   | Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development | Economic Sustainability: R&D for more reliable energy supply and sustainable business growth   | pp. 39-40 | no |
| <b>Aspect “Plant Decommissioning”</b>                 |   |  |           |    |
| G4-DMA (former EU9)                                   | Provisions for decommissioning of power sites   | Economic Sustainability: Decommissioning of inefficient facilities   | p. 35     | no |
| <b>Aspect “System Efficiency”</b>                     |   |  |           |    |
| EU11  | Average generation efficiency of thermal plants by energy source  | Environmental Sustainability: Fuel use and energy efficiency   | p. 46     | no |
| EU12  | Transmission and distribution losses as a percentage of total energy  | Environmental Sustainability: Fuel use and energy efficiency   | p. 46     | no |
| <b>Category “Social”</b>                              |   |  |           |    |
| <b>Sub-category “Labor Practices and Decent Work”</b> |   |  |           |    |
| <b>Aspect “Employment”</b>                            |   |  |           |    |
| G4-DMA (former EU14)                                  | Programs and processes to ensure the availability of a skilled workforce  | Labour Sustainability: Raising the quality of human resources  | pp. 71-73 | no |
| <b>Sub-category “Society”</b>                         |   |  |           |    |
| <b>Aspect “Local Communities”</b>                     |   |  |           |    |
| G4-DMA (former EU19)                                  | Stakeholder participation in decision making processes related to energy planning and infrastructure development                | Stakeholder Relations: Ways of stakeholder interaction   | pp. 24-27 | no |
| EU22  | Number of people physically or economically displaced and compensation, broken down by type of project                          | Comment: According to our information, within the reporting period there were no people physically or economically displaced due to our companies’ activities. |           | no |

| <b>Aspect “Disaster/Emergency Planning and Response”</b> |   |  |           |    |
|--|---|--|-----------|----|
| G4-DMA (former EU21)                                     | Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans                             | Environmental Sustainability: Management’s approach to environmental aspects of the Company’s activities   | pp. 42-44 | no |
|  |   | Social sustainability: Cooperation with local communities on safety  | pp. 76-77 | no |
| <b>Aspect “Customer Health and Safety”</b>               |   |  |           |    |
| EU25   | Number of injuries and fatalities to the public involving company assets including legal judgments, settlements and pending legal cases of diseases | Comment: According to our information, within the reporting period there were no injuries and fatalities to the public involving company assets.   |           | no |
| <b>Aspect “Access”</b>                                   |   |  |           |    |
| EU27   | Number of residential disconnections for non-payment, broken down by duration of disconnection and by regulatory regime                             | Stakeholder Relations: Organisation’s approach to risk management  | p. 28     | no |
|  |   | Comment: According to the existing legislation, electricity supply can be limited for regular non-payers only on the retail market. Our companies operate on the wholesale market and, therefore, are not involved in this process. Heat supply limitation can be implemented only after a number of notices and only with respect to facilities other than socially significant facilities or facilities that can not be disconnected by virtue of law. There were no heat limitations implemented by our generating companies within the reporting period. |           |    |
| EU28, EU29   | Power outage frequency<br>Average power outage duration   | Social sustainability: Ensuring reliable energy supply in the short and longer terms   | p. 75     | no |
|  |   | Comment: There were no power and heat outages of consumers, served by OAO “Mosenergo”, OAO “TGC-1”, OAO “OGK-2” within the reporting period.   |           |    |
| EU30   | Average plant availability factor by energy source  | Social sustainability: Ensuring reliable energy supply in the short and longer terms   | p. 76     | no |

