

6. GROUP'S SIGNIFICANT RISKS: DESCRIPTION AND MEASURES FOR RISK MANAGEMENT

The functioning of Inter RAO Group as a diversified energy holding is fraught with risks, the effective management of which is a fundamental element of the strategy and a constituent part of the Group's successful operation.

Refer to Strategic Report for detailed information about the Company's Enterprise Risk Management Framework.

No	Risk name, description	Risk management measures
1	<p>CORRUPTION RISKS</p> <p>The Group takes all efforts to exclude the probability of corrupt practices that may entail penalties and sanctions for the Group's legal entities and officials or compromise the Group's business reputation and affect the trust of stakeholders. Conducting their labor activity, employees of the Company and the Group companies strictly adhere to the law and the highest ethical standards which implies a rejection of any forms of fraud and corruption.</p>	<p>To prevent the risks of corruption and fraud, the Group takes appropriate measures. The Company and the Group companies have an anti-fraud and corruption system, an approved anti-corruption policy¹, and authorized commissions and workgroups competent to address the issues pertaining to the counteraction of fraud and corruption and the management of conflicts of interest. Procedures for identifying and assessing corruption risks², followed by the creation and maintenance of a list of corruption-hazardous functions and a list of posts related to corruption risks³, are held on a regular basis. The Board of Directors is provided with regular reports on the anti-corruption measures taken and the efficiency of the anti-fraud and corruption system.</p>
2	<p>FINANCIAL RISKS</p> <p>In the reporting period, the Group focused on managing the following financial risks:</p>	
2.1	<p>Currency risk</p> <p>The nature of the Group's activities, including cross-border supplies of electricity, management of foreign assets, implementation of international investment projects, etc., makes the Group exposed to currency risk which may lead to changes in cash flows and revaluation of the Group's assets and liabilities denominated in foreign currencies.</p>	<p>To manage the currency and interest rate risks, the Group:</p> <ul style="list-style-type: none"> assesses the currency and interest rate risks using simulation modeling, scenario modeling, and stress testing; manages the Group's currency position, credit and deposit portfolios in accordance with the approved methodology; makes transactions on the financial derivative market with a view to hedge currency and interest rate risks.
2.2	<p>Interest rate risk</p> <p>The revision of credit rates for borrowed funds upon their refinancing, the exercise by the banks of their rights to change the interest rate on credits (loans) within a fixed agreement term, and the sensitivity of certain financial liabilities to changes in market interest rates expose the Group to interest rate risk.</p>	

¹ Fraud and Corruption Management Policy of PJSC Inter RAO (Approved by the decision of the Board of Directors of PJSC Inter RAO of September 29, 2016 (Minutes No. 180 of November 3, 2016).

² In accordance with the Methodology for identifying and evaluating (analyzing) corruption risks (Order No. IRAO / 618 of December 29, 2016).

³ The lists based on the results of the evaluation in 2018 were approved by Order No. IRAO / 674 of December 25, 2018

№	Risk name, description	Risk management measures
2.3	<p>Credit risk of counterparty banks A delay or failure by the Group's counterparty banks to fulfill their obligations, including as a result of their banking license revocation, a moratorium imposed on creditor claims, etc., entails the Group's exposure to credit risk that may lead to changes in the amount of reserves and deviation of the Group's net profit from the value set in the business plan.</p>	<p>To manage credit risk, the Group:</p> <ul style="list-style-type: none"> assesses the banks' creditworthiness, following which internal ratings are assigned to the banks, and limits on operations with counterparty banks are set and monitored. Maintains overall group limits on deposit operations with counterparty banks approved by the Company's executive governing body, and monitors the financial status of the counterparty banks on a monthly basis (Russian perimeter). Makes the decision to revise the group limits as may be necessary. Controls compliance with the established group limits on deposit operations with counterparty banks; takes measures to reduce overdue receivables; analyzes the counterparties for their solvency and financial stability and the accounts receivable are monitored on an annual basis; prepares legislative initiatives and works as a member of inter-agency commissions for the settlement of payment arrears for heat and power resources; arranges pretrial and claim-related work with nonpaying counterparties; assesses the solvency and financial stability of the controlled entities based on their Internal Credit Rating, which implies a qualitative and quantitative assessment of their activities; takes measures directed towards maintaining and increasing the Internal credit rating of subsidiaries.
2.4.	<p>Credit risk of counterparties (the risk of receivables from electricity and heat buyers, grid organizations, buyers' receivables in the Wholesale Electricity and Capacity Market) A delay or failure by the Group's counterparties to fulfill their obligations, including as a result of reduced solvency or bankruptcy of power supply companies, deprivation of counterparty companies of their WECM subject and GS statuses, and a decline of payment discipline in the key groups of electricity and heat consumers expose the Group to credit risk.</p>	
3.	<p>INDUSTRY RISKS The nature of the activities of Inter RAO Group as a diversified energy holding determines its exposure to the industry risks that are inherent in various segments of the power industry.</p>	
3.1	<p>RISKS OF THE GENERATION SEGMENT</p>	
3.1.1	<p>The risk of changes in the Wholesale Electricity and Capacity Market and/or restrictive measures imposed by the government Making amendments to the existing rules of the wholesale electricity and capacity market may cause the Group's financial performance to deteriorate from the sale of electricity and capacity. Changes in the mechanism for selecting a composition of included generating equipment (SCIGE) may lead to increasing the volume of the price-taking offers on the DAM and creating low DAM prices, which would reduce the marginal profit of the Group.</p>	<p>To manage these risks, the Group:</p> <ul style="list-style-type: none"> takes part in the workgroups of the Ministry of Energy of the Russian Federation and submits proposals regarding generation issues to the Methodological Council of the Federal Antimonopoly Service and the Supervisory Council of the NP Market Council Association; _ forecasts change in the workflows and modes, optimizes the composition of the operating equipment in case of such changes, and interacts with JSC SO UES; _ controls the measures taken within the scope of repair and investment programs, including in terms of schedules, volumes and quality of repair, construction and assembly works; audits technical safety and controls the measures taken based on investigations of process violations; develops plans of organizational and technical measures based on the analysis of the breakdown rate with regard to the indicators and the specifics of each branch and intended to ensure efficient repair and maintenance of the primary and ancillary equipment to reduce the breakdown rate, to increase reliability and efficiency, and to control the fulfillment of measures based on the investigation reports of process violations;
3.1.2	<p>Day-ahead market (DAM) price risk Changes in the market environment related to increased competition on DAM through changes in the volumes of production by industrial generating assets (NPPs, HPPs, CCGTs introduced under the CDA, and new CCGTs), as well as the dynamics of fuel prices (gas, coal) cause price fluctuation on the energy markets, which leads to deviations from the planned value of the Group's marginal profit.</p>	

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3.1.3	<p>The risk of reduced guaranteed return on investments under the capacity delivery contracts (CDA) and the share of costs of a CDA object compensated at the expense of capacity fees</p> <p>The dependence of the guaranteed return on investments under CDA on the average return on long-term government liabilities (LGL) determines a possible deviation from the estimated capacity price under CDAs and the proceeds from a capacity sale under CDAs with respect to the values established in the business plan. The necessity to specify the value of compensable costs reflecting the expected profit from electricity sales as regards the actual value of profits for the period preceding the adjustment leads to the deviation of the proceeds earned by CDA objects as regards the values established in the business plan..</p>	<ul style="list-style-type: none"> • plans production repair, reconstruction and re-equipment programs based on the breakdown rate analysis; • monitors on an ongoing basis the condition of the equipment and the climate factors, and informs the core units in a timely manner of any significant risks that may affect the condition of the equipment; • optimizes fuel balance, uses long-term fuel supply contracts, creates fuel reserves, and monitors the quality of the fuel supplied; • promptly provides supporting materials and estimates, taking into account all expected expenses and shortfalls in the income of past periods while handling tariff applications and approving the necessary gross proceeds; • disputes any tariff and balance resolutions in compliance with industry laws;
3.1.4	<p>The risk of reduced productive supply of heat energy</p> <p>The decrease in the productive supply of heat power due to seasonal temperature variations, cessation/reduction of consumption by major heat consumers, the establishment of standard consumption rates below actual consumption, and excessive consumption of utility services for communal needs may lead to adverse deviations from the target marginal profits.</p>	<ul style="list-style-type: none"> • optimizes the balance of thermal energy and participates in the actualization of heat supply schemes for municipal entities in the regions where the Group's thermal assets are present, in order to ensure that the heat supply schemes are in accordance with the interests of the Group's thermal controlled entities; • mitigates harmful and hazardous production factors, meets the mandatory fire, health, and safety requirements, and observes its local safety regulations;
3.1.5	<p>The risk of unfavorable tariff balance resolutions in the field of heat supply made by the regulator</p> <p>Unfavorable tariff balance resolutions may lead to a decrease in the Group's necessary gross proceeds (NGP) received from the sale of heat energy on the retail market down to a level which would not allow it to compensate for the expenses of functioning as a unified heat supply organization.</p>	<ul style="list-style-type: none"> • implements measures to optimize the process of revising or establishing standard consumption rates for utility services that exclude insufficient receipt of proceeds in the territories of presence of Inter RAO Group's controlled heat supply and power supply companies; • elaborates measures aimed at preventing departure or returning previously departed consumers of thermal energy, expanding existing supply markets for thermal energy while connecting with new consumers and setting unregulated prices for consumers of heat energy released by steam;
3.1.6	<p>The risk of reduced equipment availability</p> <p>Equipment failures at the Group's production units, high rate of fixed asset depreciation, and changes in the work schedules of power generating units enhance the likelihood of emergencies, which reduces equipment availability and may lead to financial losses for the Group (including in the form of unpaid available capacity, losses on the balancing market at own instance, costs for repairs and commissioning or lost profit from underproduction of electricity).</p>	<ul style="list-style-type: none"> • ensures that the interests of Inter RAO Group are reflected in the regulatory legal acts in the field of heat supply in order to create conditions for improving the efficiency of the heat supply activities of Inter RAO Group's controlled entities; • takes part in actualizing heat supply schemes for municipal entities in the regions where thermal assets of Inter RAO Group are present.
3.1.7	<p>Fuel supply risks</p> <p>Value appreciation of the fuel component (being the main item in the cost of electricity production) due to increased prices for energy carriers and/or their transportation may lead to a decrease in marginal profits..</p>	
3.1.8	<p>Risks of industrial injury</p> <p>Violations of the occupational safety rules, negligence while on duty, and the effect of harmful production factors may cause accidents/professional disease precedents among personnel.</p>	
3.1.9	<p>Environmental risks</p> <p>Changing the balance of burning carbon fuels towards the solid ones leads to an increase in the impact on the atmosphere through emission of pollutants and greenhouse gases. The use of coals with greater ash content determines the growth of ash and slag wastes and the need to organize additional space for their placement.</p>	

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3.2	Risks of the supply segment	
3.2.1	The risk of unfavorable tariff balance resolutions made by the regulator Unfavorable tariff balance resolutions may lead to a decrease in the Group's necessary gross proceeds (NGP) received from the sale of electricity (capacity) on the retail market down to a level that does not allow it to compensate for the expenses of functioning as a guaranteed supplier.	To manage these risks, the Group: <ul style="list-style-type: none"> • promptly provides supporting materials and estimates, taking into account all expected expenses and shortfalls in the income of past periods while handling tariff applications and approving the necessary gross proceeds; • disputes any tariff and balance resolutions in compliance with industry laws; • constantly monitors the clients from the risk group and forms counter offers from the Group's independent power supply companies if any competitive retailers appear; • increases the quality of customer services and develops distance and interactive communication channels and client services.
3.2.2	The risk of reduced electricity and capacity sales (productive supply) Seasonal temperature variations, as well as the loss of clients because of their withdrawal in favor of competitive supply companies and WECM entry, may lead to a decrease in electricity and capacity output and failure to earn the expected marginal profit.	
3.3.	Risks of the trading segment	
3.3.1	Foreign trade price risk Adverse price changes, including changes in the prices for electricity and/or capacity in the spot segments of WECM, changes in the prices under foreign economic contracts, and increased cost of services provided by infrastructure organizations may lead to a decline of the Group's marginal profit.	To manage these risks, the Group: <ul style="list-style-type: none"> • manages its trade portfolio on the domestic and foreign markets to ensure return on its trade operations at the target level; • enters into contracts with counterparties for electricity (capacity) purchase/sale at a fixed price; • takes part in inter-agency working groups, such as the Association "NP Market Council," JSC SO UES, the Federal Grid System of Unified Energy System PJSC, and representatives of the market community, and forms joint proposals on making changes to the regulatory framework and models and rules of WECM to take into account the foreign trade specifics; • takes part in international working groups of the Electricity Council of the Commonwealth of Independent States, BRELL, KOTK, EurAsEC, and the Eurasian Economic Commission to reconcile the WECM rules with the rules of foreign power markets and to establish uniform technical standards and rules regulating the parallel IPS/UPS operation
3.3.2	The risk of changes in foreign trade supply volumes The growing competition on the export/import electricity market, reduced electricity consumption in the neighboring states, system electricity export/ import restrictions by the system operator, changes in the electricity export/ import laws of Russia or neighboring states, or the effect of various forcemajeure circumstances on the volumes of trade transactions cause changes in the supply volumes.	
4.	Country and regional risks Outside the Russian Federation, the Group operates in the Baltics, Scandinavia, Central and Eastern Europe, the Black Sea region, Central Asia and the Far East. In its foreign business operations, the Group factors in the political, macroeconomic and social risks in the countries and regions of its presence, as well as the risks associated with their geographical specifics. At the same time, Inter RAO Group places special emphasis on Russia's dialogue with the West concerning foreign policy prospects.	To manage these risks, the Group: <ul style="list-style-type: none"> • analyzes the markets, including the regulatory legal framework; • takes part in Russia's support programs, the work of intergovernmental commissions and the development of intergovernmental treaties; • organizes the interaction with governmental authorities and major companies in the countries of the Group's presence; • promotes projects for developing intergovernmental relations in prospective areas; • diversifies and makes a regular inventory of the Group's investments and contract portfolios to ensure a balance between its strategic opportunities and obligations; • develops scenarios of future work conditions in strategic areas based on the global forecast of economic, political and technological factors and the dynamics of their changes.

№	Risk name, description	Risk management measures
5.	Investment risks	
5.1	<p>Risk of failure to meet the commissioning deadlines (failure to meet the capacity supply schedules under capacity supply agreements)</p> <p>As a result of a number of factors mostly related to failure/improper fulfilment of obligations by the counterparties leading to construction and commissioning delays (general contractors' insolvency, incompleteness, defects in the equipment supplied, failure by the manufacturers to meet the delivery deadlines, etc.), as well as organizational factors, there is a probability that the commencement date of capacity supplies under the capacity supply agreements will not be met, which may lead to profit deficiencies from the sale of electricity and capacity on WEEM and, in a number of cases, penal sanctions under the capacity supply agreements.</p>	<p>To manage these risks, the Group:</p> <ul style="list-style-type: none"> • uses the competencies of its own engineering company LLC Inter RAO – Engineering when implementing projects; • organizes project management in accordance with the best Russian and international practices; • interacts with its contractors to make a plan of compensatory measures, revises the construction schedule and controls the work schedules; • manages claims and complaints with respect to the contractors that do not meet the construction time schedule or other terms of the agreements. <p>To manage these risks, the Group:</p> <ul style="list-style-type: none"> • monitors the antimonopoly and tax laws of Russia and engages counselors (under the prescribed procedure) for any disputable interpretations of legal regulations; • protects the Group's interests in administrative proceedings initiated against the Company/ Group assets by the officials of FAS, Federal Tax Service of Russia or their regional authorities; • controls the appeals against the decisions of antimonopoly authorities that do not meet the interests of the Group's power supply/heat supply assets and resolutions on bringing to administrative responsibility in courts of appeal, cassation or supervisory instances; • analyzes the Group's corporate standards to identify the algorithms of actions that may be viewed as an abuse of dominance in the relations of the Group's power supply/heat supply assets with the competing power supply/heat supply companies. Updates the Group's corporate standards. • makes a timely expert review of correct costs recognition on corporate and tax accounts and their effect on the formation of accounting statements to prevent distortions in the Company's statements.
6.	Legal risks	
The Group also identifies and controls the following key risk zones in terms of legal risks that may result in court orders, not in the Group's best interests:		
6.1.	The risk of the antimonopoly regulation activities of the Company/Group assets being discovered to be in violation of Russian law	The Group manages these risks by tracking and responding to legislation changes in a timely manner, as well as through active interaction with legislative and executive authorities and public organizations regarding the interpretation, law enforcement and improvement of law norms and mandatory legal expert review of the key business processes, as well as extensive application of out-of-court settlements with counterparties.
6.2.	The risk of the tax regulation activities of the Company/Group assets being discovered to be in violation of the law	
7.	<p>Reputational risks</p> <p>PJSC Inter RAO takes into account the reputational factor of its activities and takes measures to mitigate the adverse effect of risks on the Group's brand.</p>	The Group is highly focused on the interests of its investors and stakeholders, and to reduce the risks of sullyng the Group's image, it tries to inform the public about possible business threats with valid, transparent and timely disclosures in open sources. The Group also controls the risks of insider information disclosure to prevent fraud and price manipulation on the securities market, to which end the Regulations on Insider Information have been approved.

Information about possible circumstances objectively hindering the Company activities (including seismically dangerous territory, seasonal flood zones, terrorist acts and other circumstances).

In the course of its activities, PJSC Inter RAO faces a number of circumstances objectively having the opportunity to interfere with the activities of the Group. As part of the corporate risk management, the Company pays close attention to monitoring the impact of these factors on the results of activities in the Russian Federation and in the regions where the Group's assets are present. The Group's management cannot control most of these factors (including natural disasters, terrorist acts, and other force majeure circumstances) and, in case the probability of these factors increases, it will take all possible measures to limit their negative impact and prevent possible losses.

Information on investments of the Company, the expected income level of which is more than 10 percent per year

Investment investment with an estimated yield of more than 10% per annum (IRR>10%), which was financed in 2018, and the cost of which is more than 1% of the group's assets under IFRS (7.29 billion rubles.), is a successfully completed project "Construction of CCGT CHPP-5 in Ufa district of the Republic of Bashkortostan". Other projects with IRR>10% have a value of less than 1% of the group's assets under IFRS.

Item No.	Name of investment	Purpose of investing	Investment amount in 2017 ¹	Sources of funding in 2018
1	Construction of CCGT CHPP-5 in Ufa district of the Republic of Bashkortostan	Receiving income by increasing the supply of electricity and power	1,527,216	Own funds

¹ Financing amount, RUB thousand, VAT included