

# COMPLEX INDEX EVALUATION DETERMINING INVESTMENT POTENTIAL OF HYDROGENERATING ASSETS

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DOI: 10.13165/IE-19-13-2-12

**Abstract:** Power Engineering restructuring has led to the new industry enterprises formation, which requires the development of modern investment attractiveness methods. An objective comparative analysis of Russian power companies is vital to make the valid financial and economic decisions by strategic owners and outside investors. Stock indicators currently in use do not take into account the specific characteristics of power engineering and Russian power companies. The comparison of the energy facilities should be carried out, taking into account the technical state of the generating capacity. The scientific article proposes the inclusion of the specific energy indicators in the consolidated group of the energy companies' investment attractiveness factors. This component reflects the businesses ability of the sustainable cash flow generation, representing the participants' investment potential of the Russian competitive electricity and power market.

**Keywords:** rating agencies, the energy market, financial and economic indicators, the credit rating boundaries, regional and industry indicators, specific energy indicators, trend analysis, investment attractiveness rating.

## Introduction

### Main trends in research of energy enterprises potential investment

Power engineering restructuring had led to formation of new energy enterprises which requires objective evaluation of their operating activity efficiency and investment potential. Many specialists [1, 2, 3, 4, 5, 6, 7, 8, 16] mark that foreign rating grades are difficult to use for Russian power companies without taking into account the specific features of enterprises functioning in conditions of the Russian competitive market.

At present the relevant trend is the formation of objective rating grades of Russian enterprises [5, 6, 7, 8]. The work experience of Russian rating agencies is calculated in some cases by several years, in a better case one or two decades. Moody's, S&P, Fitch – are among the most influential foreign agencies which represent the so-called “world three” and their analytical researches are universally recognized all over the world. Along with its long-term economic history testifies serious mistakes and slips of rating analytical leaders. Credit ratings assigned to some companies (AIG, Enron, Lehman Bros., Parmalat) were high and didn't reflect the real market situation. Their securities kept their high rating of solvency in spite of serious problems with financial stability, business activity and profitability. Some specialists [2] also agree in opinion that 2008 the whole world financial crisis was provoked by high investment ratings assigned to enterprises having serious financial difficulties.

As to Russian rating agencies they are often accused in jaundice and decision making subjectivity within the framework of analytical research. National rating, even high, is not able to affect world capital market accessibility, which is particularly important for Russian enterprises, because a company stable development directly depends on the possibility of attracting inexpensive credit resources.

### **Methodological Aspects**

For the rating of a companies' investment attractiveness the following functional constituents package is proposed to use.

1. Resource-based component calculated on the basis of weighted average fuel availability at structural power company departments.
2. Reserve component - total reserve of energy company capacity.
3. Technological component - average evaluation of physical and moral deterioration of energy equipment.
4. Customer's component - average energy and power demand in a region.
5. Infrastructural component - evaluation of a network infrastructure development.
6. Innovational component - R&D development level in an energy company.
7. Personnel component, calculated on the basis of employees number and labour productivity data.
8. Institutional component, understood as a development degree of leading institutes of market economics in a region.
9. Financial component, described as a total sum of taxation and other money contributions to the budget from power companies.

Functioning and development peculiarities of Russian hydrogenating assets are described in this article. The largest Russian and foreign hydropower stations are analyzed.

### World largest hydro power stations

Sl. No	Name of a plant	Country	River	Construction year	Total capacity, thousand MW	Maximum power production, billion kWh
1	Sanxia («Three Canyons»)	China	Yangtze	2003	18.3 (October 2008)	80.8
2	Itaipu	Brasil/ Paraguay	Parana	1984	14	94.7
3	Guri (Simon Bolivar)	Venezuela	Caroni	1978	10.2	46
4	Tucuruí	Brasil	Tocantins	1984	8.4	21
5	Sajano-Shushenskay	Russia	Enisey	1978	6.4	26.8
6	Krasnojarskay	Russia	Enisey	1967	6	20.4
7	Grand-Coulee	USA	Columbia	1942	6*	
8	Robert-Bourassa	Canada	La-Grande	1979	5.6	...
9	Churchill-Falls	Canada	Churchill	1971	5.4	35
10	Longtan	China	Hongshui	2009	4.9	18.7
11	Bratskaya	Russia	Angara	1961	4.5	22.6

According to some estimates 6.8 thousand MW

Source: <https://infourok.ru/prezentaciya-po-fizike-gidravlicheskie-elektrostantsii-proekt-energetika-mira-3364892.html>

The largest hydropower producers are: China– 585 TWh, Canada – 370 TWh, Brazil – 363 TWh, USA – 250,6 TWh, Russia – 176 TWh, Norway – 140 TWh, India – 116 TWh, Venezuela – 87 TWh, Japan – 69 TWh, Sweden – 66 TWh, Island is an absolute leader in hydropower production per head – 20 % of the whole world power generation.

A Public Joint Stock Company “Federal Hydrogenerating Company “RusHydro” (PAO “RusHydro”) is a Russian power generating company, the owner of the greater part of the country’s hydropower stations, one of the largest Russian generating companies as to installed capacity and second largest hydrogenerating company after Eletrobrás. It is registered in Krasnojarsk, the headquarters are in Moscow.

In October 2011 the company got in its property the generating assets in the Far East, the largest of which is RAO Unified Energy System of the East. In March 2013 PAO “RusHydro” signed a contract with a German company Voith Hydro about the creation of a joint venture Volga Hydro, oriented to hydroturbine equipment production in Balakovo, Saratov region.

At present the key projects of PAO “RusHydro” are: construction of power stations in the Far East – heat and electric power stations in the city Sovjetskaya Gavan’ (Habour), Khabarovsk region, the first stage of Sakhalin thermal power station-2, Nizhne-Bureiskaya hydropower station in Amur region, Ust-Srednekanskaya hydropower station in Magadan region. Other projects of PAO “RusHydro” are – Zaramagskaya hydropower station in North Osetia, Zagorskaya pumped hydroelectric station in Moscow region. The company implements a number of projects in the field of renewable energy (the construction of small hydropower stations, wind and solar stations). PAO “RusHydro” also implements the program of complex modernization of existing assets.

As of January 1, 2018 the stated capacity of “RusHydro” exceeded 39 GW. The total thermal capacity is 18,497.1 GCal/h. Nineteen branches in 17 regions of Russia, including 47 hydropower stations and pumped hydroelectric stations, 3 Geo power Stations, and the enterprises of “PAO Power Systems of the East” are included in the Company.

All in all the “RusHydro” Group controls more than 90 objects of renewable energy. The largest in Russia-Sajano-Shushenskaya hydropower station after P.S. Neporozhny (6,400 MW), 9 plants of Volgo-Kama region cascade, having installed capacity (more than 10,150 MW), Zeya hydropower station (1,330 MW) - the first one of big hydropower plants in the Far East, Bureja hydropower station (2,010 MW).

The cumulative power output was 140.25 billion kWh in 2017.

Sajano-Shushtnskaya hydropower station (10 hydraulic units with the capacity of 640 MW each) is a powerful source of loads' covering in the Power Grid of Russia and Siberia with an average power production of 24 billion kWh. In 2014 the recovery work were finished on the elimination of accident consequences of August 17, 2009.

“RusHydro” holding also comprises the scientific research, design and survey works engineering organizations and retail power sale companies.

Besides the operation of active hydropower stations and renewable energy sources PAO “RusHydro” continues to execute hydropower construction projects investment in different parts of the Russian Federation.

The largest of them are the construction projects of Nizhne-Bureisk hydropower station (320 MW) in Amur region, 342 MW hydropower station No.1 of Zaramag cascade in North Osetia, Ust-Srednekanskaya hydropower station (570 MW) in Magadan region.

“RusHydro” supplies power to the Far East region almost in full. The company's assets in the region include power stations having total capacity of more than 13 GW ensuring more than 90% of power production in the Far East. “RusHydro” also supplies power transmission (group assets in the region include more than 100 thousand kilometers of electrical network) and its sale to the end-user.

### Analysis of investment potential of PAO “RusHydro”

Let's make a complex economical analysis of PAO “RusHydro” to form a set of indicators, characterizing the investment potential of hydrogenerating assets (tables 1-5).

Table 1.

Liquidity and Solvency indicators of PAO “RusHydro”

Sl. No.	Indicator	Value								Quadratic coefficient of variation
		2017	2016	2015	2014	2013	2012	2011	2010	
1	Net working capital	180,566,000	173,120,000	136,980,000	167,748,000	226,175,000	212,548,000	182,248,000	175,176,000	28,829,654
2	Coefficient of current liquidity	3.80	7.40	5.49	6.11	3.67	3.04	4.34	11.92	10.21
3	Coefficient of quick liquidity	3.74	7.24	5.36	6.00	3.64	3.02	4.31	11.87	10.24
4	Coefficient of	0.79	1.51	0.59	0.27	0.22	0.23	0.56	0.52	2.15

	absolute liquidity									
5	Coefficient of equity capital manoeuvrability	0.28	0.25	0.21	0.27	0.37	0.44	0.35	0.36	0.13
6	Coefficient of current assets manoeuvrability	0.21	0.20	0.11	0.05	0.06	0.08	0.13	0.04	0.29
7	Coefficient of internal circulating assets manoeuvrability	0.58	0.67	1.05	0.14	0.16	0.15	0.27	0.06	2.19
8	Coefficient of circulating assets covering with internal capital	0.36	0.30	0.10	0.32	0.38	0.49	0.47	0.76	0.62
9	Coverage ratio of inventories with	20.55	14.31	4.21	18.47	41.59	75.66	73.47	163.37	376.04

	internal and circulating assets									
10	Circulating assets portion in company's funds	0.25	0.22	0.19	0.23	0.38	0.42	0.36	0.35	0.17
11	Inventories portion in circulating assets	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.00	0.03
12	Accounts receivable portion in circulating assets	0.72	0.75	0.77	0.72	0.75	0.72	0.86	0.83	0.03
13	Coefficient of common solvency	2.31	2.28	1.70	2.33	1.66	2.03	1.77	4.98	3.46

It is evident that comparative analysis of different enterprises shall be conducted using relative but not absolute figures. It means that the magnitude of net circulating assets is interesting to analyze in dynamics, but it is necessary to consider it relatively to receipts data, net cost, profit and so on. The value of quadratic coefficient of variation characterizes the indicators coherency. A set of factors characterized by quadratic coefficient less than 0.33 is advisable to include in the rating of hydrogenerating assets.

Table 2.

Financial stability indicators of PAO “RusHydro”

Indicator	Value								Quadratic coefficient of variation
	2017	2016	2015	2014	2013	2012	2011	2010	
Concentration coefficient of borrowed funds	0.12	0.16	0.17	0.22	0.26	0.15	0.13	-0.04	0.37
Financial dependence coefficient	1.19	1.18	1.20	1.19	1.31	1.27	1.23	1.09	0.02
Coefficient of long-term investments structure	0.38	0.56	0.71	0.52	0.34	0.18	0.30	0.16	0.66
Financial dependence coefficient of capitalized funds	0.10	0.13	0.14	0.13	0.15	0.09	0.12	0.06	0.05
Financial independence coefficient of capitalized funds	0.90	0.87	0.86	0.87	0.85	0.91	0.88	0.94	0.01
Structure coefficient of borrowed funds	0.59	0.81	0.80	0.76	0.56	0.35	0.56	0.66	0.26
Financial leverage level (balance)	0.09	0.12	0.14	0.13	0.16	0.08	0.12	0.06	0.07

Financial leverage level (market)	0.30	-	0.49	0.52	0.52	0.61	0.25	0.23	0.33
Coefficient of coverage of constant nonfinancial costs	1.86	2.13	1.76	1.94	2.12	1.27	2.14	2.78	0.64
Provision coefficient of interest payable	7.35	7.73	7.11	7.09	8.50	9.33	16.37	34.76	52.42
Coefficient of coverage of constant financial costs	5.98	7.21	4.81	6,65	8,05	5.58	13.92	38.65	79.88
Concentration coefficient of equity capital	0.84	0.85	0.83	0.84	0.76	0.79	0.81	0.92	0.02
Autonomy coefficient	0.84	0.85	0.83	0.84	0.76	0.79	0.81	0.92	0.02
Manoeuvrability coefficient	0.11	0.08	0.02	0.09	0.19	0.26	0.21	0.29	0.40
Financial lever	0.19	0.18	0.20	0.19	0.31	0.27	0.23	0.09	0.14
Coefficient of loan capital structure	0.59	0.81	0.80	0.76	0.56	0.35	0.56	0.66	0.26
Functioning capital, thousand roubles	180,56 6, 000	173, 120, 000	136, 980, 000	167, 748, 000	226, 175, 000	212, 548, 000	182,2 48, 000	175, 176, 000	28,829,654

Financial stability indicators characterize the capital structure of power company, which in its turn reflects source formation structure of property complex, and consequently, characterize loan policy of enterprise management

Table 3.

## Profitability indicators of PAO "RusHydro"

№	Indicator	Value								Quadratic coefficient of variation
		2017	2016	2015	2014	2013	2012	2011	2010	
1	Generation coefficient of profits	0.050	0.060	0.044	0.047	0.058	0.030	0.062	0.088	0.04
2	Assets profitability	0.028	0.038	0.024	0.029	0.036	0.014	0.042	0.067	0.05
3	Investment capital profitability	0.030	0.039	0.025	0.030	0.040	0.016	0.046	0.069	0.05
4	Equity capital profitability	0.044	0.054	0.040	0.043	0.057	0.025	0.057	0.075	0.03
5	Gross profitability of sold product	0.421	0.510	0.403	0.397	0.459	0.406	0.524	0.490	0.04
6	Transaction profitability of sold product	0.342	0.476	0.370	0.372	0.435	0.242	0.446	0.545	0.15
7	Net profitability of sold product	0.250	0.364	0.280	0.283	0.325	0.156	0.331	0.427	0.15
8	Cost effectiveness	0.727	1.041	0.917	0.657	0.848	0.683	1.102	0.961	0.23
9	Equity common capital profitability	0.044	0.054	0.040	0.043	0.057	0.025	0.057	0.075	0.03

All profitability figures have low volatility in a relevant range, consequently, special attention must be paid to these coefficients in the frames of development of the combined investment rating.

Table 4.

Business activity indicators of PAO "RusHydro"

№	Indicator	Value								Quadratic coefficient of variation
		2017	2016	2015	2014	2013	2012	2011	2010	
2	Returns on assets	0.34	0.28	0.27	0.29	0.31	0.28	0.30	0.31	0.012
3	Resource productivity	0.15	0.13	0.12	0.13	0.13	0.12	0.14	0.16	0.01
4	Funds turnover in store (in circle)	19.68	13.25	15.55	19.05	20.58	27.24	28.88	51.26	41.66
5	Funds turnover in accounts receivable (in circle)	0.82	0.77	0.83	0.75	0.47	0.42	0.46	0.56	0.33
6	Funds turnover in store, days	18.54	27.54	23.48	19.16	17.74	13,40	12.64	7.12	16.54
7	Funds turnover in accounts receivable, days	447.26	474.73	440.63	486.42	783.32	877.07	800.34	654.44	366.5
8	Funds turnover of credit liabilities, days	46.00	62.70	56.04	47.81	480.29	376.96	426.27	66.66	1357.26

9	Duration of operating cycle, days	465.81	502.26	464.11	505.59	801.05	890.47	812.98	661.56	340.68
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We suggest the following composition of specific economic indicators, reflecting power production specific character and characterizing relative efficiency of generating capacities of stations (table 5). This is the so-called primary set of indicators for subsequent inclusion of separate indicators in the consolidated investment rating.

Table 5.

## Specific power production indicators of PAO “RusHydro”

(counting on 1 kW of installed capacity)

<b>Indicators characterizing activity efficiency of a power company</b>										
№	Specific indicators	2017	2016	2015	2014	2013	2012	2011	2010	Quadratic coefficient of variation
		counting on 1 kW of installed capacity								
<b>Indicators characterizing the efficiency of a power company assets management</b>										
1	Non-revolving assets, thousand roubles/ kW	18.93	18.17	18.59	16.79	12.96	11.21	10.86	9.23	109.21
2	<i>Fictitious</i> assets, thousand roubles/ kW	<i>0.06</i>	<i>0.06</i>	<i>0.05</i>	<i>0.05</i>	<i>0.05</i>	<i>0.04</i>	<i>0.02</i>	<i>0.01</i>	<i>0.002</i>
3	Fixed assets, thousand roubles/ kW	10.76	10.49	10.07	9.69	8.98	8.51	8.03	7.44	10.08
4	Financial investments,	8.00	7.49	8.21	6.78	3.67	2.40	2.59	1.77	53.34

	thousand roubles/ kW									
5	<i>Resources,</i> thousand roubles/ kW	0.11	0.11	0.11	0.09	0.07	0.05	0.04	0.02	<b>0.008</b>
6	Accounts receivable, thousand roubles/ kW	4.55	3.84	3.32	3.71	5.99	5.80	5.20	4.09	7.017
7	Cash assets, thousand roubles/ kW	1.31	1.05	0.47	0.23	0.48	0.61	0.79	0.21	1.04
8	Revolving assets, thousand roubles/ kW	6.28	5.13	4.29	5.14	7.97	8.12	6.07	4.90	14.05
9	Non-revolving + revolving assets, thousand roubles/ kW	25.21	23.30	22.89	21.94	20.93	19.33	16.93	14.14	92.53
<b>Indicators, characterizing unit efficiency of financial sources management in a power company</b>										
10	Capital and reserve, thousand roubles/ kW	21.17	19.73	19.04	18.42	16.01	15.20	13.73	12.94	62.42
11	Fixed liabilities, thousand roubles/ kW	2.39	2.88	3.07	2.67	2.75	1.46	1.80	0.78	4.48
12	Current liabilities, thousand roubles/ kW	1.65	0.69	0.78	0.84	2.17	2.67	1.40	0.41	4.39

13	Authorized capital, thousand roubles/ kW	10.93	9.90	9.90	9.90	8.14	8.14	7.44	7.40	12.61
14	Retained income, thousand roubles/ kW	7.05	6.68	6.03	5.45	4.83	4.03	3.75	3.07	14.43
15	Borrowed funds, long term and short, thousand roubles/ kW	4.04	3.57	3.85	3.52	4.92	4.13	3.20	1.20	8.21
16	Account payable, thousand roubles/ kW	0.27	0.25	0.25	0.22	1.99	1.48	1.32	0.21	3.69
<b>Indicators characterizing the efficiency of a power company activity</b>										
17	Gain, thousand roubles/ kW	3.71	2.95	2.75	2.78	2.79	2.42	2.37	2.28	1.44
18	Sale cost price, thousand roubles/ kW	2.15	1.45	1.64	1.68	1.51	1.44	1.13	1.16	0.73
19	Gross profit, thousand roubles/ kW	1.56	1.50	1.11	1.10	1.28	0.98	1.24	1.12	0.29
20	Profit on sales, thousand roubles/ kW	1.56	1.50	1.50	1.10	1.28	0.98	1.24	1.12	0.33
21	Profits from taking part in other	0.07	0.24	0.02	0.01	0.01	0.01	0.02	0.00	0.05

	organizations, thousand roubles/ kW									
22	Interest obtainable, thousand roubles/ kW	0.22	0.23	0.24	0.24	0.25	0.14	0.08	0.07	0.04
23	Interest payable, thousand roubles/ kW	0.21	0.19	0.21	0.16	0.15	0.11	0.08	0.03	0.03
24	Other profits, thousand roubles/ kW	0.20	0.61	0.38	0.45	1.79	0.46	0.61	2.28	3.98
25	Other expenses, thousand roubles/ kW	0.57	0.98	0.52	0.61	1.96	0.90	0.83	2.19	2.91
26	Profit before taxation, thousand roubles/ kW	1.27	1.40	1.02	1.03	1.21	0.59	1.06	1.24	0.43
27	Profit tax, thousand roubles/ kW	0.25	0.29	0.17	0.18	0.25	0.16	0.25	0.28	0.02
28	Net profit, thousand roubles/ kW	0.93	1.07	0.77	0.79	0.91	0.38	0.79	0.97	0.31
29	Cumulative financial result of a time period, thousand roubles/ kW	0.93	1.07	0.77	0.79	0.91	0.38	0.79	0.97	0.31

30	Capitalization, thousand roubles/ kW	7.98	10.08	6.29	5.14	4.51	5.80	7.71	16.24	100.43
31	Net wealth, thousand roubles/ kW	20.16	19.22	0.00	18.54	16.06	15.16	13.62	0.00	472.88
<b>Indicators characterizing the efficiency of current, investment and financial activity of a power company</b>										
32	Money flow balance from current operations, thousand roubles/ kW	1.39	1.51	1.15	1.09	1.21	0.98	1.06	1.06	<b>0.23</b>
33	Money flow balance from investment operations, thousand roubles/ kW	1.98	0.23	0.94	1.42	1.43	3.04	1.32	2.74	5.99
34	Money flow balance from financial operations, thousand roubles/ kW	0.84	-0.70	0.02	0.08	0.09	1.89	0.83	0.94	4.34

Thus we propose the following set of indicators characterizing the investment potential of hydrogenating assets (table 6). This set of indicators is advisable to include in the integral rating of PAO “RusHydro” investment appeal. The proposed set of indicators cover the whole range of a power company operation and development: paying capacity, financial stability, profitability, business activity, and also takes into account the specific features of power engineering. Indicators calculation [7, 13, 14, 15] was accompanied with the quadratic coefficient of

variation (table 6). The basis for separate indexes inclusion in the unified base of investment potential evaluation was *the minimal value of variation coefficient* (less than 0.33) on all the economical indexes.

Table 6.

A set of indicators characterizing the investment potential of power companies

No	Indicator	Quadratic coefficient of variation
<i>Paying capacity coefficient</i>		
1	Manoeuvrability coefficient of equity capital	0.13
2	Manoeuvrability coefficient of revolving assets	0.29
3	Circulating assets share in a company assets	0.17
4	Distributed stock share in revolving assets	0.03
5	Accounts receivable share in revolving assets	0.03
<i>Financial stability coefficients</i>		
5	Financial dependence coefficient	0.02
6	Financial dependence coefficient of capitalized sources	0.05
7	Financial independence coefficient of capitalized sources	0.01
8	Coefficient of outside funds structure	0.26
9	Level of financial leverage (balance)	0.07
10	Level of financial leverage (market)	0.33
11	Concentration of equity capital coefficient	0.02
12	Autonomy coefficient	0.02
13	Financial lever	0.14
14	Structure borrowed capital coefficient	0.26
<i>Efficiency and profitability coefficients</i>		

1 5	Coefficient of profit generation	0.04
1 6	Assets profitability	0.05
1 7	Invested capital profitability	0.05
1 8	Equity capital profitability	0.03
1 9	Gross profitability of sold product	0.04
2 0	Operating profitability of sold product	0.15
2 1	Net profitability of sold product	0.15
2 2	Cost effectiveness	0.23
2 3	Equity common capital profitability	0.03
<i>Business activity coefficients</i>		
2 4	Resource productivity	0.012
2 5	Returns on assets	0.01
2 6	Funds turnover in accounts receivable (in circle)	0.33
<i>Specific energy indicators (per 1kW of installed capacity)</i>		
2 7	Fictitious assets	0.002
2 8	Store, thousand roubles/ kW	0.008
2 9	Gross profit, thousand roubles/ kW	0.29

3 0	Profit on sales, thousand roubles/ kW	0.33
3 1	Profits from taking part in other organizations, thousand roubles/ kW	0.05
3 2	Interest obtainable, thousand roubles/ kW	0.04
3 3	Interest payable, thousand roubles/ kW	0.03
3 4	Profit tax, thousand roubles/ kW	0.02
3 5	Net profit, thousand roubles/ kW	0.31
3 6	Cumulative financial result of a time period, thousand roubles/ kW	0.31
3 7	Money flow balance from current operations, thousand roubles/ kW	0.23

It should be noted that the last block of indicators characterizes to a greater degree the potential for the development of energy companies. Estimation of specific energy indicators with account of the actual production of the stations will reflect the real possibilities of operating activities, and the difference between the potential and actual values will show the reserve capacities of energy companies.

Undoubtedly, an important indicator of the economic activity of energy companies is the cost of energy resources, however, within the framework of the study [13, 14, 15] this indicator has an extremely high quadratic coefficient of variation.

### Conclusions

Thus, it is advisable to include the above indicators in the integral investment rating (Table 6), although combining all the indicators into a single integral rating is associated with certain difficulties. The relevant range used in the calculations does not allow to form a long-term forecast taking into account changing environmental factors. Therefore, at this stage, it is advisable to accumulate analytical data for the formation of ranges of values

of the gradient scale of the power company. This is a necessary step in the formation of a set of management decisions on the investment policy of energy enterprises operating in a competitive electricity and a capacity market of Russia.

One should borne in mind that changes in the business environment in a competitive energy market occur fairly quickly, which, respectively, necessitates a systematic monitoring of the external environment. An advancing factor is also becoming increasingly important for the stable and reliable operation of the power company, and this necessitates the following actions:

- Determining competent strategic planning based on substantial strengthening of forecasting and analytical functions that are becoming an organic element of the modern investment mechanism for the sustainable development of energy companies;
- Improving the adaptation of the financial and investment management system to the company's accounting policies, which can only be achieved with the training and motivation of energy companies' personnel;
- Implementation of modern corporate information systems, without which prompt processing of financial information and making effective investment decisions becomes impossible.

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