### **Innovative projects**

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## Decrease in expenses for electrosupply at Development of an infrastructure of Arkhangelsk



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**Abstract.** In article the estimation of a technical condition of electric networks is given, is long maintained in the city of Arkhangelsk. Because of the big deterioration of networks expenses on their operation are very high, is not provided энергобезопасность northern city, new building and reconstruction is broken. Deterioration of networks influences electric power cost. Experience of formation of the state tariffs for the electric power is analysed. The comparative analysis of tariffs for different categories of consumers of the Arkhangelsk area and other subjects of the Russian Federation is carried out. The building concept in Arkhangelsk a new cable line for the purpose of modernisation of an existing infrastructure of electrosupply is developed. Project realisation will allow to raise reliability, энергобезопасность and efficiency of electrosupply. There will be a possibility of technological joining of new consumers, demonopolizations of the power market and development of an infrastructure of a city.

#### Keywords: an infrastructure, development, electrosupply, tariffs, a city, power safety.

Operated by the electrical system of Arkhangelsk was founded over 30 years ago and since then has undergone significant changes. [1] The steadily growing problem of physical and moral deterioration of equipment and electrical networks leads to a decrease in the reliability, safety and efficiency of the entire power system, which is the basic component of all urban infrastructure engineering services. The high demand for investment in the modernization of networks and equipment, as well as the systematic increase in fuel prices imply a significant increase in tariffs for electricity and heat that activates the decline in industrial production. Because of the wear and tear of electrical networks in the regional capital of the northern region of strategic importance in a critical situation with the reliable power supply existing customers, as well as the implementation of technological connection to the sources of supply of new construction and renovation. This hinders the development of the city.

Worn operation of the electrical networks is much more expensive than new ones. Electricity is widely used in all branches of industry, urban transport, housing and communal services, as well as in everyday life. Therefore, its cost is the most important determinant of prices and has a big impact on the level and quality of life of the population, especially in cold climates. Therefore, all the energy is controlled by the state in accordance with the Federal Law "On state regulation of tariffs for electricity and heat in the Russian Federation." However, it should be recognized that effective mechanisms to regulate sound levels of profitability natural monopolies in the electricity sector is currently in our country is not formed.

For the population have lower rates than for the industry. However, increasing the cost of electricity causes an increase in the cost of goods and services producers. As a result, buyers still make up the difference in rates between the population and industry, and not once for a particular item or service, and with every purchase.

We analyze the formation of tariffs for electricity for example 2011. In accordance with the Federal Law of 26.03.2003 N $_{\odot}$  35-FZ "On Electric Power Industry", based on the provisions of the Federal Tariff Service (FTS of Russia), approved by the Government of the Russian Federation of 30.06.2004 N $_{\odot}$  332, it was established tariff ceiling for electrical energy from 01.01.2011. Limit minimum and maximum levels of tariffs for electricity supplied to the population and equalized with the consumer categories for each subject of the Russian Federation (Order of 07.10.2010 N $_{\odot}$  245-e / 3 "On the threshold levels of tariffs for electricity supplied to the population, and equivalent it consumer categories for 2011 ") are set without regard to their regulation within the social norms and social norms over the consumption of electric energy, and excluding special pricing procedures in respect of electrical energy consumed by the population as provided by the Government of the Russian Federation of 07.12.1998 N $_{\odot}$  1444 "On the basis of the pricing in the respect of the electrical energy consumed by the population."

19 subjects of the Russian Federation within one week provided the FTS of Russia divisions: 6 (7.14% of the total number of subjects) petitioned for tariff decrease, 12 (14.28% of the total number of subjects) - increase, and the Jewish Autonomous Region - about expanding the range (to reduce the minimum (min) limit of 0.48% and an increase in the maximum (max) limit of 1.41%). In accordance with the provisions of the socio-economic development of the Russian Federation for 2011 and the planning period of 2012 and 2013, and taking into account the additional costs of organizations considered and adopted the FTS of Russia as part of the pre-trial settlement of differences and disputes, rates of 19 subjects have been clarified (order from 07.10.2010 N $_{0}$  246-e / 4 "On the threshold levels of tariffs for electric energy (power) supplied to customers in the retail markets, with the exception of electric energy (power) supplied to the population and equalized with the categories of consumers in areas that are not organized in a price band of the wholesale market in 2011 "). These rates have been specified using the index and are on average for each

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subject of the Russian Federation without differentiation by consumer groups, the voltage levels, annual number of hours for use of the power zones (hours) of day and calendar schedule for 2011. Table. 1 fares, according to the order of 07.10.2010 N $_{2}$  245-e / 3, are shown in the numerator, and after verification (Order of 07.10.2010 N $_{2}$  246-e / 4) - in the denominator.

Table 1

No n / n	The subjects of the Russian Federation		Уровень тарифа, руб/кВти (с. НДС)	
11/11	Name of the subject	FO1	min	ч (с пдс)
				man
1	2	W	4	5
1	Belgorodskaya region	W1	2,59	2,60
2	Bryanskiy region		2,40	2,42
3	Vladimirskiy region	W	2,78	2,81
4	Voronejskiy region	W	2,39	2,41
5	Ivanovskiy region	W	2,65	2,68
6	Kalujskiy region	W	2,92	2,97
7	Kostromskoy region	W	2,73	2,75
8	Kurskiy region	W	2,58	2,61
9	Lipezkiy region	W	2,32	2,35
10	Moscow region	W	3,37	3,38
11	Orlovskiy region	W	2,49	2,51
12	Ryazanskiy region	W	2,70	2,73
13	Smolenskiy region	W	2,42	2,45
14	Tambovskiy region	W	2,40	2,42
15	Tverskaya region	W	2,87	2,88
16	Tulskiy Region	W	2,81	2,84
17	Yaroslavskiy Regon	W	2,43	2,46
18	Moscow	W	3,76	3,80
19	Republic Karelia	NW <sup>1</sup>	2,00	2,03
20	Republic Komi	NW	<u>2,69</u> 2,9328 <sup>2</sup>	$\frac{2,74}{3,0896^2}$
21	Arkhangelsk region	NW	<u>3,08</u> 3,3082	<u>3,13</u> 3,6347
22	Nenetskiy Autonomous District (HAO) <sup>(3</sup>	NW	<u>3,15</u> 2,5791 <sup>3</sup>	$\frac{3,19}{2,6963^3}$
23	Vologodskiy region	NW	2,79	2,80
24	Kaliningradskiy region	NW	<u>2,69</u> 2,4458	<u>2,72</u> 2, 4519
25	Leningradskiy region	NW	2,56	2,59
26	Murmansk region	NW	1,91	1,93
27	Novgorodskiy region	NW	2,77	2,80
28	Pskov region	C3	2,84	2,86
29	Saint Petersburg	C3	2,76	2,81
30	Republic Dagestan	CK1	1,67	1,69
31	Republic Ingushetiya	СК	2,34	2,37
32	Republic Kabardino-Balkariya	СК	2,54	2,59
33	Republic Karachaevo-Cherkessiya	СК	2,91	2,94
34	Republic Severnaya Osetiya alaniya	СК	2,66	2,69
35	Chechenskiy republic	СК	1,79	1,80
36	Stavropolskiy region	СК	2,79	2,82
37	Kalmikiya Republic	Ю1	2,92	2,95
38	Krasnodarskiy region	Ю	3,06	3,10
39	Adigeya Republic	Ю	3,06	3,10

# Tariff levels for the electricity on the subjects of the Russian Federation

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Instantia         10         2.73         2.73         2.73           11         Volgogradsky region         10         2.48         2.53           42         Rostovsky region         10         3.05         3.08           43         Republic Basknorstan         11         1.90         1.92           44         Republic Many EI         11         2.35         2.38           45         Republic Unmuritya         11         2.40         2.42           47         Republic Unmuritya         11         2.40         2.42           48         Kirovskiy region         11         2.43         1.87           50         Orenburgskiy region         11         2.28         2.31           51         Pernaskiy region         11         2.25         2.56           54         Saratovskiy region         11         2.25         2.56           54         Saratovskiy region         11         2.23         2.38           55         Ulyanovskiy region         11         2.43         2.46           57         Kurganskiy region         Y         2.80         2.83           58         Sererolovskiy region         Y         1.82	40	Astrahanskiv region	Ю	2 94	2 97
Подержите         <	41	Volgogradskiv region	Ю	2,91	2,51
Term         Term <thterm< th="">         Term         Term         <th< td=""><td>42</td><td>Rostovskiv region</td><td>Ю</td><td>3 05</td><td>3.08</td></th<></thterm<>	42	Rostovskiv region	Ю	3 05	3.08
10         11         13         13         13         13           44         Republic Marry EI         II         2,33         2,33         2,34           45         Republic Marry EI         II         2,37         2,39           46         Republic Churvashiya         II         2,40         2,42           47         Republic Churvashiya         II         2,40         2,42           47         Republic Churvashiya         II         2,40         2,42           47         Republic Odmurviya         II         2,40         2,42           47         Republic Odmurviya         II         2,42         2,42           49         Nigeorodskiy Region         II         2,42         2,42           50         Orenburgskiy region         II         2,47         2,49           51         Permskiy region         II         2,28         2,30           55         Ulyanovskiy region         II         2,28         2,30           56         Republic Atarstan         II         2,43         2,46           57         Kurganskiy region         Y         1,82         1,84           60         Chelyabinskiy region	43	Republic Bashkorstan	Π <sup>1</sup>	1 90	1.92
1       1 <th1< th=""> <th1< th=""> <th1< th=""></th1<></th1<></th1<>	44	Republic Mariy El	П	2.35	2.38
Inc.         Inc. <thinc.< th="">         Inc.         Inc.         <th< td=""><td>45</td><td>Republic Morodoviva</td><td>П</td><td>2,37</td><td>2,30</td></th<></thinc.<>	45	Republic Morodoviva	П	2,37	2,30
Topological and the second	46	Republic Ildmurtiva	П	2,07	2,09
1       1       2,40       2,42         48       Kirovsky region       11       2,240       2,42         49       Nijegorodskiy Region       11       2,240       2,42         49       Nijegorodskiy Region       11       2,242       2,31         50       Orenburgskiy region       11       2,18       2,20         51       Penzensky region       11       2,47       2,49         53       Samarsky region       11       2,42       2,30         55       Uliyanovskiy region       11       2,28       2,30         56       Republic Tatarstan       11       2,43       2,46         57       Kurganskiy region       Y       1,82       1,84         60       Chelyabinskiy region       Y       1,82       1,84         60       Chelyabinskiy region       Y       1,82       1,84         61       Inti -Mansiiskiy autonomous District <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1,82       1,84         63       Republic Altai <sup>3</sup> C       3,14       3,17       3,30         65       Tiva republic       C	47	Republic Chuyashiya	П	2,10	2,12
10       11       2,29       2,31         11       11       1,85       1,87         12       11       1,85       1,87         13       0       11       2,18       2,20         14       1,85       1,87       2,18       2,20         15       0       11       2,17       2,49         14       2,47       2,49       2,30         15       11       2,47       2,49         16       11       2,28       2,30         17       3       3       2,28       2,30         18       12,43       2,44       2,42       2,30         18       12,43       2,44       2,42       2,43         19       1       11       2,43       2,43         19       11       1,82       1,84       2,44         19       1       1,82       1,84       3,49         10       Chelyabinskiy region       Y       1,82       1,84         11       1.43       1.17       8,66613       8,70233         16       Hati-Mansiiskiy autonomous District <sup>3</sup> Y       1,82       1,84         10	48	Kirovskiv region	П	2,07	2,09
10       Top-grammation region       11       1.85       1.87         50       Orenburgsky region       11       1.85       1.87         51       Penzensky region       11       2.18       2.20         52       Permskiy region       11       2.47       2.49         53       Samarskiy region       11       2.25       2.56         54       Saratovskiy region       11       2.23       2.33         55       Uliyanovsky region       11       2.43       2.46         57       Kurganskiy region       Y       2.82       1.84         60       Chelyabinskiy region       Y       1.82       1.84         61       Hnti-Mansiiskiy region       Y       1.82       1.84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1.82       1.84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3.14       3.12         64       Hatakiya republic       C	49	Nijegorodskiv Region	П	2,10	2,31
51       Penzenskiy region       II       2,18       2,20         52       Permskiy region       II       2,18       2,20         53       Samarskiy region       II       2,47       2,49         53       Samarskiy region       II       2,28       2,30         55       Uliyanovskiy region       II       2,28       2,30         55       Uliyanovskiy region       Y       2,43       2,46         57       Kurganskiy region       Y       2,41       2,42         59       Tumenskiy region       Y       1,82       1,84         60       Chelyabinskiy region       Y       1,97       1,82       1,84         61       Hnti-Mansiiskiy autonomous Districtr <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous Districtr <sup>3</sup> Y       1,82       1,84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3,14       3,17         64       Buryatiya republic       C       3,27       3,30         65       Tra republic       C       1,30       1,32         64       Buryatiya region       C       2,16       2,18         65       Tra republic	50	Orenhurgskiv region	П	1.85	1.87
52       Permskiy region       II       2,47       2,49         53       Samarsky region       II       2,47       2,49         53       Samarsky region       II       2,28       2,30         54       Saratovsky region       II       2,35       2,38         56       Republic Tatarstan       II       2,43       2,46         57       Kurgansky region       Y       2,80       2,83         58       Sverdlovsky region       Y       2,41       2,42         59       Tumensky region       Y       1,82       1,84         60       Chelyabinsky region       Y       1,82       1,84         61       Hnti -Mansiisky autonomous District <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1,82       1,84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3,14       3,7022 <sup>3</sup> 64       Buryatiya republic       C       1,30       1,32         67       Ataiskiy region       C       1,20       1,32         68       Krasnoyarsky region       C       2,49       2,52         71       Omskiy region       C	51	Penzenskiv region	п	2.18	2 20
33       Samarsky region       11       2,15       2,55         53       Saratovsky region       11       2,28       2,30         55       Uliyanovsky region       11       2,23       2,38         56       Republic Tatarstan       11       2,43       2,46         57       Kurgansky region       Y       2,80       2,83         58       Sverdlovsky region       Y       1,82       1,84         60       Chelyabinsky region       Y       1,95       1,97         61       Hnti -Mansiisky autonomous Districtr <sup>3</sup> Y       1,82       1,84         60       Chelyabinsky region       Y       1,82       1,84         61       Hnti -Mansiisky autonomous Districtr <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1,82       1,84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3,14       3,17         64       Buryatiya republic       C       2,16       2,18         65       Tiva republic       C       1,207       1,301       1,32         66       Hakasiya republic       C       1,1277       1,1816 <sup>3</sup> 1,127 <tr< td=""><td>52</td><td>Permskiv region</td><td>п</td><td>2,10</td><td>2,20</td></tr<>	52	Permskiv region	п	2,10	2,20
54       Saratovský region       II       2,28       2,30         55       Ulyanovský region       II       2,35       2,38         56       Republic Tatarstan       II       2,43       2,46         57       Kurganský region       YI       2,80       2,83         58       Sverdlovský region       Y       2,80       2,83         58       Sverdlovský region       Y       2,41       2,42         59       Tumenský region       Y       1,82       1,84         60       Chelyabinský region       Y       1,82       1,84         61       Hnti –Mansiiský autonomous Districtr <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous Districtr <sup>3</sup> Y       1,82       1,84         63       Republic Atai <sup>3</sup> C <sup>1</sup> 3,14       8,7022 <sup>3</sup> 64       Buryatiya republic       C       1,30       1,32         67       Ataisky region       C       1,52       1,1277 <sup>3</sup> 1,151         68       Krasnoyarskiy region       C       2,74       2,82         68       Krasnoyarskiy region       C       2,48       2,51         71       Omski	53	Samarskiv region	п	2,17	2,19
55       Uliyanovský region       II       2.35       2.38         56       Republic Tatarstan       II       2.43       2.46         57       Kurganský region       Y <sup>1</sup> 2.80       2.83         58       Sverdlovský region       Y       2.41       2.42         59       Tumenský region       Y       1.82       1.84         60       Chelyabinský autonomous District <sup>3</sup> Y       1.82       1.84         60       Chelyabinský autonomous District <sup>3</sup> Y       1.82       1.84         61       Hnti -Mansiiský autonomous District <sup>3</sup> Y       1.82       1.84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1.82       1.84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3.14       3.17         64       Buryatiya republic       C       3.01       3.02         65       Tiva republic       C       1.30       1.32         66       Hakasiya repion       C       1.50       1.52         70       Novosibirskiy region       C       2.48       2.51         70       Novosibirskiy region       C       2.48       2.51         71       Omskiy	54	Saratovskiv region	П	2,33	2,30
303       Ditylationally region       11       2,03       2,36         56       Republic Tatrastan       II       2,43       2,46         57       Kurganskiy region       Y       2,41       2,42         59       Tumenskiy region       Y       1,82       1,84         60       Chelyabinskiy region       Y       1,95       1,97         61       Hnti -Mansiskiy autonomous Districtr <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous Districtr <sup>3</sup> Y       1,82       1,84         8,70223       64       Buryatiya republic       C       3,214       3,17         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3,14       3,17         64       Buryatiya republic       C       1,30       1,32         67       Altaiskiy region       C       1,00       1,32         68       Krasnoyarskiy region <sup>3</sup> C       1,50       1,52         71       Omskiy region       C       2,49       2,52         71       Omskiy region       C       2,49       2,52         71       Omskiy region       C       2,49       2,52         71       Omskiy region <td>55</td> <td>Ulivanovskiv region</td> <td>п</td> <td>2,20</td> <td>2,30</td>	55	Ulivanovskiv region	п	2,20	2,30
30       Republic Hadasian       11 $2,1^{-0}$ $2,1^{-0}$ 57       Kurganskiy region       Y $2,80$ $2,83$ 58       Sverdlovskiy region       Y $2,41$ $2,42$ 59       Tumenskiy region       Y $1,82$ $1,84$ 60       Chelyabinskiy region       Y $1,82$ $1,84$ 60       Chelyabinskiy autonomous Districtr <sup>3</sup> Y $1,82$ $1,84$ 61       Hnti -Mansiiskiy autonomous District <sup>3</sup> Y $1,82$ $1,84$ 62       Yamalo-Nenets autonomous District <sup>3</sup> Y $1,82$ $1,84$ 63       Republic Altai <sup>3</sup> C <sup>1</sup> $3,14$ $3,17$ 64       Buryatiya republic       C $1,30$ $1,32$ 65       Tiva republic       C $1,30$ $1,32$ 66       Hakasiya republic       C $1,1277^3$ $1,1816^3$ 67       Altaiskiy region       C $2,18$ $2,20$ 70       Novosibirskiy pegion       C $2,18$ $2,21$ 71       Omskiy region       C $2,15$ $2,17$ <td>56</td> <td>Republic Tatarstan</td> <td>п</td> <td>2,00</td> <td>2,30</td>	56	Republic Tatarstan	п	2,00	2,30
37       Ragansky region       97       2,40       2,40         58       Sverdlovsky region       Y       2,41       2,42         59       Tumenskiy region       Y       1,82       1,84         60       Chelyabinskiy autonomous District <sup>3</sup> Y       1,82       1,84         60       Chelyabinskiy region       Y       1,82       1,84         60       Chelyabinskiy autonomous District <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1,82       1,84         63       Republic Altai <sup>3</sup> C <sup>3</sup> 3,14       3,7022 <sup>3</sup> 64       Buryatiya republic       C       2,16       2,18         65       Tiva republic       C       1,30       1,32         66       Hakasiya region       C       1,1277 <sup>3</sup> 1,1816 <sup>3</sup> 67       Attaisky region       C       2,18       2,20         70       Novosibirskiy region       C       2,48       2,51         71       Omskiy region       C       2,48       2,51         72       Tomskiy region       C       2,48       2,51         73       Irkiytskiy region	57	Kurganskiv region	11 V1	2,43	2,40
35       3       2,71       2,72       2,74         59       Tumenskiy region       Y       1,82       1,84         60       Chelyabinskiy region       Y       1,82       1,84         61       Hnti -Mansiiskiy autonomous Districtr <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1,82       1,84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3,14       3,17         64       Buryatiya republic       C       3,27       3,30         65       Tiva republic       C       1,30       1,32         66       Hakasiya republic       C       1,30       1,32         67       Altaiskiy region       C       2,74       2,82         68       Krasnoyarskiy region <sup>3</sup> C       1,1277 <sup>3</sup> 1,1816 <sup>3</sup> 69       Kemorovskiy District       C       2,18       2,20         70       Novosibirskiy region       C       2,18       2,17         73       Irkiytskiy region       C       1,1277 <sup>3</sup> 1,1816 <sup>3</sup> 74       Zabaikalskiy District       C       1,91       1,92         75       Saha republic Yakutia <td>58</td> <td>Sverdlovskiv region</td> <td>y - V</td> <td>2,00</td> <td>2,00</td>	58	Sverdlovskiv region	y - V	2,00	2,00
39       Fullefisky region       3       1,92       1,93         60       Chelyabinskiy region       Y       1,95       1,97         61       Hnti-Mansiiskiy autonomous Districtr <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1,82       1,84         62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1,82       1,84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3,14       3,17         64       Buryatiya republic       C       3,27       3,30         65       Tiva republic       C       2,16       2,18         66       Hakasiya region       C       1,30       1,32         67       Altaiskiy region       C       1,20       1,52         68       Krasnoyarskiy region       C       2,18       2,20         70       Novosibirskiy region       C       2,48       2,51         71       Omskiy region       C       2,15       2,17         73       Irkiytskiy region <sup>3</sup> C       0,69       9,0312 <sup>3</sup> 74       Zabaikalskiy District       C       1,91       1,922         75       Saha republic Ya	50		y V	2,41	1.84
60         Chelyabinskiy region         Y         1,95         1,97           61         Hnti-Mansiiskiy autonomous Districtr <sup>3</sup> Y         1,82         1,84           62         Yamalo-Nenets autonomous District <sup>3</sup> Y         1,82         1,84           63         Republic Altai <sup>3</sup> C <sup>1</sup> 3,14         8,17           63         Republic Altai <sup>3</sup> C <sup>1</sup> 3,14         8,7022 <sup>3</sup> 64         Buryatiya republic         C         2,16         2,18           65         Tiva republic         C         1,30         1,32           66         Hakasiya republic         C         1,120         1,127           67         Altaiskiy region         C         2,16         2,18           68         Krasnoyarskiy region <sup>3</sup> C         1,1277 <sup>3</sup> 1,1816 <sup>3</sup> 69         Kemorowskiy District         C         2,48         2,51           70         Novosibirskiy region         C         2,48         2,51           71         Omskiy region         C         2,48         2,51           72         Tomskiy region         C         1,91         1,92           75         Saha republic Y	59		y	1,02	1,04
61         Hnti -Mansiiskiy autonomous Districtr <sup>3</sup> Y $1.82$ 9.99143 $1.849.01623$ 62         Yamalo-Nenets autonomous District <sup>3</sup> Y $1.827.19073$ $7.25473$ 63         Republic Altai <sup>3</sup> C <sup>1</sup> $3.148.68613 8.7022^3           64         Buryatiya republic         C         3.27 3.30           65         Tiva republic         C         2.16 2.18           66         Hakasiya republic         C         1.32 1.484           67         Altaiskiy region         C         2.74 2.82           68         Krasnoyarskiy region3         C         1.50 1.52           70         Novosibirskiy region         C         2.148 2.20           71         Omskiy region         C         2.49 2.52           71         Omskiy region         C         2.49 2.52           73         Irkiytskiy region3         C         0.68 0.69           74         Zabaikalskiy District         C         1.91 1.92           75         Saha republic Yakutia         2.43 2.6563$	60	Chelyabinskiy region	У	1,95	1,97
Image: Second strict of the	61	Hnti –Mansiiskiy autonomous Districtr <sup>3</sup>	У	1,82	1,84
62       Yamalo-Nenets autonomous District <sup>3</sup> Y       1.82       1.84         63       Republic Altai <sup>3</sup> C <sup>1</sup> 3.14       3.17         64       Buryatiya republic       C       3.27       3.30         65       Tiva republic       C       2.16       2.18         66       Hakasiya republic       C       1.30       1.32         67       Altaiskiy region       C       2.16       2.18         68       Krasnoyarskiy region <sup>3</sup> C       1.50       1.52         70       Novosibirskiy region       C       2.18       2.20         70       Novosibirskiy region       C       2.18       2.20         70       Novosibirskiy region       C       2.18       2.20         70       Novosibirskiy region       C       2.49       2.52         71       Omskiy region       C       2.48       2.51         72       Tomskiy region       C       1.91       1.92         75       Saha republic Yakutia $\mathcal{A}^{11}$ 3.33       3.49         74       Zabaikalskiy District       C       1.91       1.92         75       Saha republic Yakutia $\mathcal{A}_1$		, , , , , , , , , , , , , , , , , , ,		8,9914 <sup>3</sup>	9,0162 <sup>3</sup>
63         Republic Altai <sup>3</sup> C <sup>1</sup> $3.14$ 8,68613 $3.72$ 8,7023           64         Buryatiya republic         C $3.27$ $3.30$ 65         Tiva republic         C $2,16$ $2,18$ 66         Hakasiya republic         C $1.30$ $1.32$ 67         Altaiskiy region         C $2,16$ $2,18$ 68         Krasnoyarskiy region <sup>3</sup> C $1.50$ $1.52$ 69         Kemorovskiy District         C $2,18$ $2,20$ 70         Novosibirskiy region         C $2,48$ $2,51$ 71         Omskiy region         C $2,18$ $2,20$ 71         Omskiy region         C $2,48$ $2,51$ 72         Tomskiy region         C $2,18$ $2,17$ 73         Irkiytskiy region <sup>3</sup> C $0,68$ $9,0066^3$ $9,0312^3$ 74         Zabaikalskiy District         C $1,91$ $1,92$ $3,6314$ $3,9256$ 76         Primorskiy region $\mathcal{I}$ $2,4$	62	Yamalo-Nenets autonomous District <sup>3</sup>	У	$\frac{1,82}{7,1907^3}$	<u>1,84</u> 7,2547 <sup>3</sup>
64         Buryatiya republic         C $3,27$ $3,30$ 65         Tiva republic         C $2,16$ $2,18$ 66         Hakasiya republic         C $1,30$ $1,32$ 67         Altaiskiy region         C $2,74$ $2,82$ 68         Krasnoyarskiy region <sup>3</sup> C $1,52$ $1,1277^3$ $1,1816^3$ 69         Kemorovskiy District         C $2,49$ $2,52$ $1,1277^3$ $1,1816^3$ 70         Novosibirskiy region         C $2,48$ $2,51$ $2,17$ 73         Irkiytskiy region <sup>3</sup> C $0,68$ $0,69$ 74         Zabaikalskiy District         C $1,91$ $1,92$ 75         Saha republic Yakutia $\mathcal{I}^1$ $3,6314$ $3,9256$ 76         Primorskiy region $\mathcal{I}$ $2,40$ $2,424$ $2,6563$ 76         Primorskiy region $\mathcal{I}$ $2,420$ $2,2554$ $2,5325$ 78         Amurskiy region $\mathcal{I}$ $2,455$ $2,484$	63	Republic Altai <sup>3</sup>	C1	<u>3,14</u> 8,6861 <sup>3</sup>	$\frac{3,17}{8,7022^3}$
65         Tiva republic         C         2,16         2,18           66         Hakasiya republic         C         1,30         1,32           67         Altaiskiy region         C         2,74         2,82           68         Krasnoyarskiy region <sup>3</sup> C         1,50         1,52           69         Kemorovskiy District         C         2,18         2,20           70         Novosibirskiy region         C         2,49         2,52           71         Omskiy region         C         2,48         2,51           72         Tomskiy region         C         2,15         2,17           73         Irkiytskiy region <sup>3</sup> C         0,68         0,69           9,0066 <sup>3</sup> 9,0312 <sup>3</sup> C         1,91         1,92           75         Saha republic Yakutia $\mathcal{I}^1$ 3,33         3,49           3,6314         3,9256         76         Primorskiy region $\mathcal{I}$ 2,40         2,425           78         Amurskiy region $\mathcal{I}$ 2,49         2,5325         2,8071         2,8352           78         Amurskiy region $\mathcal{I}$ 2,45         2,5325 <t< td=""><td>64</td><td>Buryatiya republic</td><td>C</td><td>3,27</td><td>3,30</td></t<>	64	Buryatiya republic	C	3,27	3,30
66         Hakasiya republic         C         1,30         1,32           67         Altaiskiy region         C         2,74         2,82           68         Krasnoyarskiy region <sup>3</sup> C         1,50         1,52           69         Kemorovskiy District         C         2,18         2,20           70         Novosibirskiy region         C         2,18         2,20           71         Omskiy region         C         2,49         2,52           71         Omskiy region         C         2,48         2,51           72         Tomskiy region <sup>3</sup> C         0.68         0,69           9,0066 <sup>3</sup> 9,0312 <sup>3</sup> 74         Zabaikalskiy District         C         1,91         1,92           75         Saha republic Yakutia $\mathcal{I}^1$ $3.33$ 3,49         3,6314         3,9256           76         Primorskiy region $\mathcal{I}$ $2,40$ $2,42$ $2,6632$ $2,6563$ 77         Habarovskiy region $\mathcal{I}$ $2,93$ $2,96$ $2,8372$ 78         Amurskiy region $\mathcal{I}$ $4.48$ $3,4185$ $3,4192$	65	Tiva republic	C	2,16	2,18
67         Altaiskiy region         C         2,74         2,82           68         Krasnoyarskiy region <sup>3</sup> C         1,50         1,52           69         Kemorovskiy District         C         2,18         2,20           70         Novosibirskiy region         C         2,49         2,52           71         Omskiy region         C         2,44         2,51           72         Tomskiy region         C         2,15         2,17           73         Irkiytskiy region <sup>3</sup> C         0,68         0,69           9,0066 <sup>3</sup> 9,0312 <sup>3</sup> 9         9,0312 <sup>3</sup> 3,49           75         Saha republic Yakutia $\mathcal{I}^1$ 3,33         3,49           3,6314         3,9256         76         Primorskiy region $\mathcal{I}$ 2,6332         2,6563           76         Primorskiy region $\mathcal{I}$ 2,49         2,452         2,48           78         Amurskiy region $\mathcal{I}$ 2,49         2,525         79         Kamchatskiy District $\mathcal{I}$ 4,98         5,03           7,5321         7,5324         2,534         2,534         3,4492         3,4185 <td< td=""><td>66</td><td>Hakasiya republic</td><td>C</td><td>1,30</td><td>1,32</td></td<>	66	Hakasiya republic	C	1,30	1,32
68Krasnoyarskiy region3C $1.50$ $1,12773$ $1.52$ $1,121773$ 69Kemorovskiy DistrictC $2,18$ $2,20$ 70Novosibirskiy regionC $2,49$ $2,52$ 71Omskiy regionC $2,48$ $2,51$ 72Tomskiy regionC $2,15$ $2,17$ 73Irkiytskiy region3C $0.68$ $9,00663$ $0.69$ $9,00663$ 74Zabaikalskiy DistrictC $1,91$ $1,92$ 75Saha republic Yakutia $\mathcal{I}^1$ $3,33$ $3,6314$ $3,49$ $3,6314$ $3,2256$ 76Primorskiy region $\mathcal{I}$ $2,40$ $2,6332$ $2,42$ $2,6563$ 77Habarovskiy region $\mathcal{I}$ $2,93$ $2,8071$ $2,96$ $2,8071$ 78Amurskiy region $\mathcal{I}$ $2,45$ $2,5254$ $2,48$ $2,5254$ 79Kamchatskiy District $\mathcal{I}$ $4,98$ $3,4185$ $5,03$ $7,5321$ 79Kamchatskiy Region $\mathcal{I}$ $4,77$ $3,6318$ $4,85$ $3,7338$ 82Evreiskaya Autonomous District $\mathcal{I}$ $2,64$ $2,667$ $2,6274$ $2,67$ $2,7076$ 83Chukotskiy Autononomous District $\mathcal{I}$ $6,20$ $9,5151$ $9,5391$ 84Baykonur3 $\mathcal{I}$ $2,78$ $2,86$	67	Altaiskiy region	C	2,74	2,82
69         Kemorovskiy District         C         2,18         2,20           70         Novosibirskiy region         C         2,49         2,52           71         Omskiy region         C         2,48         2,51           72         Tomskiy region         C         2,48         2,51           73         Irkiytskiy region <sup>3</sup> C         0.68         0.69           9,0066 <sup>3</sup> 9,0312 <sup>3</sup> 74         Zabaikalskiy District         C         1,91         1,92           75         Saha republic Yakutia $\mathcal{I}^1$ $\frac{3,33}{3,6314}$ $\frac{3,49}{3,6314}$ 76         Primorskiy region $\mathcal{I}$ $\frac{2,40}{2,6332}$ $2,422$ 76         Primorskiy region $\mathcal{I}$ $\frac{2,93}{2,8071}$ $2,962$ 77         Habarovskiy region $\mathcal{I}$ $\frac{2,45}{2,5254}$ $2,5325$ 78         Amurskiy region $\mathcal{I}$ $\frac{4,81}{3,4185}$ $\frac{4,85}{3,4192}$ 78         Amurskiy region $\mathcal{I}$ $\frac{4,81}{3,5321}$ $\frac{4,85}{7,5321}$ 79         Kamchatskiy District $\mathcal{I}$ $\frac{4,81}{3,6318}$ $\frac{4,85}{3,4185}$	68	Krasnoyarskiy region <sup>3</sup>	С	$\frac{1,50}{1,1277^3}$	$\frac{1,52}{1,1816^3}$
70Novosibirskiy regionC $2,49$ $2,52$ 71Omskiy regionC $2,48$ $2,51$ 72Tomskiy regionC $2,15$ $2,17$ 73Irkiytskiy region <sup>3</sup> C $0,68$ 9,0066 <sup>3</sup> $0,69$ 9,0066 <sup>3</sup> $9,0312^3$ 74Zabaikalskiy DistrictC $1,91$ $1,92$ 75Saha republic Yakutia $\mathcal{I}^1$ $3,33$ $3,6314$ $3,49$ $3,6314$ $3,9256$ 76Primorskiy region $\mathcal{I}$ $2,40$ $2,6332$ $2,42$ $2,6563$ 77Habarovskiy region $\mathcal{I}$ $2,40$ $2,8352$ $2,96$ $2,8071$ $2,93$ $2,8352$ 78Amurskiy region $\mathcal{I}$ $2,45$ $2,5254$ $2,5325$ 79Kamchatskiy District $\mathcal{I}$ $4,98$ $7,5321$ $5,03$ $7,5321$ 81Sakhalinskiy Region $\mathcal{I}$ $4,77$ $3,6318$ $4,85$ $3,7338$ 82Evreiskaya Autonomous District $\mathcal{I}$ $2,64$ $2,6274$ $2,67$ $2,707683Chukotskiy Autononomous District\mathcal{I}6,209,51519,539184Baykonur3\mathcal{I}2,782,86$	69	Kemorovskiy District	C	2,18	2,20
71Omskiy regionC2,482,5172Tomskiy regionC2,152,1773Irkiytskiy region <sup>3</sup> C $0,68$ 9,0066 <sup>3</sup> $0,69$ 9,0012 <sup>3</sup> 74Zabaikalskiy DistrictC1,911,9275Saha republic Yakutia $\mathcal{I}^1$ $3,33$ 3,6314 $3,9256$ 76Primorskiy region $\mathcal{I}$ $2,40$ 2,6332 $2,42$ 2,656377Habarovskiy region $\mathcal{I}$ $2,93$ 2,8071 $2,96$ 2,807178Amurskiy region $\mathcal{I}$ $2,45$ 2,5254 $2,48$ 2,532579Kamchatskiy District $\mathcal{I}$ $4,98$ 7,5321 $7,5344$ 80Magadanskiy region $\mathcal{I}$ $4,177$ 4,84 3,6318 $3,7338$ 82Evreiskaya Autonomous District $\mathcal{I}$ $2,64$ 2,6274 $2,677$ 2,707683Chukotskiy Autononomous District $\mathcal{I}$ $6,20$ 9,5151 $9,5391$ 84Baykonur <sup>3</sup> $\mathcal{I}$ $2,78$ $2,86$	70	Novosibirskiy region	C	2,49	2,52
72Tomskiy regionC2,152,1773Irkiytskiy region3C $0.68$ 9,00663 $0.69$ 9,0312374Zabaikalskiy DistrictC1,911,9275Saha republic Yakutia $\mathcal{I}^1$ $3.33$ 3,6314 $3,9256$ 76Primorskiy region $\mathcal{I}$ $2.40$ 2,632 $2.42$ 2,656377Habarovskiy region $\mathcal{I}$ $2.93$ 2,8071 $2.93$ 2,835278Amurskiy region $\mathcal{I}$ $2.45$ 2,835279Kamchatskiy District $\mathcal{I}$ $4.98$ 3,4185 $5.03$ 3,449280Magadanskiy region $\mathcal{I}$ $4.85$ 3,449281Sakhalinskiy Region $\mathcal{I}$ $4.77$ 2,6274 $4.84$ 3,631882Evreiskaya Autonomous District $\mathcal{I}$ $2.64$ 2,6274 $2.677$ 2,607183Chukotskiy Autononomous District $\mathcal{I}$ $2.62$ 9,5151 $9.5391$ 84Baykonur3 $\mathcal{I}$ $2.78$ $9.86$	71	Omskiy region	C	2,48	2,51
73Irkiytskiy region3C $0.68 \\ 9,00663$ $0.69 \\ 9,03123$ 74Zabaikalskiy DistrictC1,911,9275Saha republic Yakutia $\mathcal{I}^1$ $3.33 \\ 3.6314$ $3,9256$ 76Primorskiy region $\mathcal{I}$ $2.40 \\ 2.6332$ $2.6563$ 77Habarovskiy region $\mathcal{I}$ $2.93 \\ 2.8071$ $2.96 \\ 2.8352$ 78Amurskiy region $\mathcal{I}$ $2.45 \\ 2.5254$ $2.5325 \\ 2.5254$ $2.5325 \\ 2.5325 \\ 79 \\ 80 \\ 80 \\ 80 \\ 80 \\ 81 \\ 82 \\ Evreiskaya Autonomous District\mathcal{I}4.81 \\ 4.81 \\ 3.6318 \\ 3.7338 \\ 82 \\ Evreiskaya Autonomous District\mathcal{I}4.77 \\ 2.6274 \\ 2.6274 \\ 2.7076 \\ 2.6274 \\ 2.7076 \\ 9.5151 \\ 9.5391 \\ 9.5391 \\ 9.5391 \\ 9.5391 \\ 9.5391 \\ 9.5391 \\ 9.5391 \\ 1 \\ 2.78 \\ 2.86 \\ 1 \\ 1 \\ 2.78 \\ 2.86 \\ 1 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.62 \\ 1 \\ 2.5391 \\ 1 \\ 3.5391 \\ $	72	Tomskiy region	C	2,15	2,17
74Zabaikalskiy DistrictC1,911,9275Saha republic Yakutia $\mathcal{I}^1$ $\frac{3,33}{3,6314}$ $\frac{3,49}{3,6314}$ 76Primorskiy region $\mathcal{I}$ $2,40$ $2,42$ 2,63322,6563 $\mathcal{I}$ $2,93$ $2,96$ 77Habarovskiy region $\mathcal{I}$ $2,23$ $2,2653$ 78Amurskiy region $\mathcal{I}$ $2,45$ $2,4852$ 79Kamchatskiy District $\mathcal{I}$ $4,98$ $5,03$ 79Kamchatskiy District $\mathcal{I}$ $4,98$ $5,03$ 75,5321 $7,5324$ $7,5324$ $7,5344$ 80Magadanskiy region $\mathcal{I}$ $4,77$ $4,84$ 3,6318 $3,4185$ $3,4492$ 81Sakhalinskiy Region $\mathcal{I}$ $4,77$ $4,84$ 36318 $3,7338$ $32,6274$ $2,7076$ 83Chukotskiy Autonomous District $\mathcal{I}$ $6,20$ $6,26$ 9,51519,5391 $3,6391$ $3,6391$	73	Irkiytskiy region <sup>3</sup>	С	<u>0,68</u> 9,0066 <sup>3</sup>	<u>0,69</u> 9,0312 <sup>3</sup>
75Saha republic Yakutia $\mathcal{I}^1$ $3,33$ $3,6314$ $3,9256$ 76Primorskiy region $\mathcal{I}$ $2,40$ $2,6332$ $2,42$ $2,6563$ 77Habarovskiy region $\mathcal{I}$ $2,93$ $2,8071$ $2,93$ $2,8352$ 78Amurskiy region $\mathcal{I}$ $2,45$ $2,8071$ $2,48$ 	74	Zabaikalskiy District	С	1,91	1,92
76       Primorskiy region       Д       2,40       2,42         77       Habarovskiy region       Д       2,93       2,96         78       Amurskiy region       Д       2,45       2,8352         78       Amurskiy region       Д       2,45       2,48         2,5254       2,5325       2,5325       2,5325         79       Kamchatskiy District       Д       4,98       5,03         7,5321       7,5344       7,5321       7,5344         80       Magadanskiy region       Д       4,81       4,85         3,4185       3,4492       3,4185       3,4492         81       Sakhalinskiy Region       Д       4,77       4,84         82       Evreiskaya Autonomous District       Д       2,64       2,67         83       Chukotskiy Autonomous District       Д       6,20       6,26         9,5151       9,5391       9,5391       9,5391	75	Saha republic Yakutia	Д1	<u>3,33</u> 3,6314	<u>3,49</u> 3,9256
77Habarovskiy region $\mathcal{A}$ $\frac{2,93}{2,8071}$ $\frac{2,96}{2,8352}$ 78Amurskiy region $\mathcal{A}$ $\frac{2,45}{2,5254}$ $\frac{2,48}{2,5254}$ 79Kamchatskiy District $\mathcal{A}$ $\frac{4,98}{7,5321}$ $\frac{5,03}{7,5321}$ 79Magadanskiy region $\mathcal{A}$ $\frac{4,81}{3,4185}$ $\frac{4,85}{3,4185}$ 80Magadanskiy region $\mathcal{A}$ $\frac{4,81}{3,6318}$ $\frac{4,85}{3,7338}$ 81Sakhalinskiy Region $\mathcal{A}$ $\frac{4,77}{2,6274}$ $\frac{2,64}{2,7076}$ 83Chukotskiy Autonomous District $\mathcal{A}$ $\frac{6,20}{9,5151}$ $\frac{6,26}{9,5391}$ 84Baykonur <sup>3</sup> $\mathcal{A}$ $\mathcal{A}$ $2,78$ $2,86$	76	Primorskiy region	Д	<u>2,40</u> 2,6332	<u>2,42</u> 2,6563
78Amurskiy region $\mathcal{A}$ $\begin{array}{c} 2,45\\ 2,5254\end{array}$ $\begin{array}{c} 2,48\\ 2,5325\end{array}$ 79Kamchatskiy District $\mathcal{A}$ $\begin{array}{c} 4,98\\ 7,5321\end{array}$ $\begin{array}{c} 5,03\\ 7,5321\end{array}$ 80Magadanskiy region $\mathcal{A}$ $\begin{array}{c} 4,81\\ 3,4185\end{array}$ $\begin{array}{c} 4,85\\ 3,4185\end{array}$ 81Sakhalinskiy Region $\mathcal{A}$ $\begin{array}{c} 4,77\\ 3,6318\end{array}$ $\begin{array}{c} 3,7338\\ 3,7338\end{array}$ 82Evreiskaya Autonomous District $\mathcal{A}$ $\begin{array}{c} 2,64\\ 2,677\\ 2,6274\end{array}$ $\begin{array}{c} 2,67\\ 2,6274\end{array}$ 83Chukotskiy Autonomous District $\mathcal{A}$ $\begin{array}{c} 6,20\\ 9,5151\end{array}$ $\begin{array}{c} 9,5391\\ 9,5391\end{array}$ 84Baykonur3 $\mathcal{A}$ $\mathcal{A}$ $\begin{array}{c} 2,78\\ 2,86\end{array}$	77	Habarovskiy region	Д	<u>2,93</u> 2,8071	<u>2,96</u> 2,8352
79Kamchatskiy District $\mathcal{A}$ $\begin{array}{c} 4.98 \\ 7,5321 \end{array}$ $\begin{array}{c} 5.03 \\ 7,5321 \end{array}$ 80Magadanskiy region $\mathcal{A}$ $\begin{array}{c} 4.81 \\ 3.4185 \end{array}$ $\begin{array}{c} 4.85 \\ 3.4185 \end{array}$ 81Sakhalinskiy Region $\mathcal{A}$ $\begin{array}{c} 4.77 \\ 3.6318 \end{array}$ $\begin{array}{c} 3.7338 \\ 3.7338 \end{array}$ 82Evreiskaya Autonomous District $\mathcal{A}$ $\begin{array}{c} 2.64 \\ 2.677 \\ 2.6274 \end{array}$ $\begin{array}{c} 2.677 \\ 2.6274 \end{array}$ 83Chukotskiy Autonomous District $\mathcal{A}$ $\begin{array}{c} 6.20 \\ 9.5151 \end{array}$ $\begin{array}{c} 9.5391 \\ 9.5391 \end{array}$ 84Baykonur <sup>3</sup> $\mathcal{A}$ $\mathcal{A}$ $\begin{array}{c} 2.78 \\ 2.86 \end{array}$	78	Amurskiy region	Д	<u>2,45</u> 2,5254	<u>2,48</u> 2,5325
80Magadanskiy region $\mathcal{A}$ $\begin{array}{c} 4.81 \\ 3.4185 \\ 3.4185 \\ 3.4185 \\ 3.4492 \end{array}$ 81Sakhalinskiy Region $\mathcal{A}$ $\begin{array}{c} 4.77 \\ 3.6318 \\ 3.7338$	79	Kamchatskiy District	Д	<u>4,98</u> 7.5321	<u>5,03</u> 7,5344
81       Sakhalinskiy Region       Д       4,77       4,84         82       Evreiskaya Autonomous District       Д       2,64       2,67         83       Chukotskiy Autonomous District       Д       6,20       6,26         84       Baykonur <sup>3</sup> Л       2,78       2,86	80	Magadanskiy region	Д	<u>4,81</u> 3 4185	<u>4,85</u> 3,4492
82       Evreiskaya Autonomous District       Д       2,64       2,67         83       Chukotskiy Autonomous District       Д       6,20       6,26         84       Baykonur <sup>3</sup> Л       2,78       2,86	81	Sakhalinskiy Region	Д	<u>4,77</u> 3,6318	<u>4,84</u> 3 7338
83     Chukotskiy Autononomous District     Д     6,20     6,26       9,5151     9,5391	82	Evreiskaya Autonomous District	Д	<u>2,64</u> 2,6274	<u>2,67</u> 2,7076
84 Baykonur <sup>3</sup> $\Pi$ 2.78 2.86	83	Chukotskiy Autononomous District	Д	<u>6,20</u> 9.5151	<u>6,26</u> 9.5391
A <u>2,10</u> <u>2,00</u>	84	Baykonur <sup>3</sup>	Д	2,78	2,86

				4,00973	4,0312 <sup>3</sup>
No	otes: 1	- Federal District (FD): Central - C (18 subjects), th	e North We	st - NW (11 s	subjects), North-
Са	aucasiar	1 - UK (7 subjects), South - S (6 subjects), Volga - P (14 s	subjects), the	e Urals - I (6 su	ubjects), Siberian
- (	C (12 su	bjects), Far East - D (10 subjects of);			
~	<b>m1</b>				

2 - The rates after verification;

3 - to the extent not referred to the territories within which formed the equilibrium price.

On the part of the Arkhangelsk region, it was noted that the tariffs, according to the order of 07.10.2010 N $_{2}$  245-e / 3, do not include all the costs of production and delivery of electric power. Analysis of the data tab. 1 indicates that the representatives of the Arkhangelsk region, fought to increase the lower and upper limits of 7.41 and 16.1%, respectively. In this case, the NAO said step has managed to reduce tariffs, respectively, by 18.1 and 15.5%. As a result, the NAO rates lower than in the Arkhangelsk region, by 28.3 and 34.8%. Only 9 of the 84 subjects of the Russian Federation (N $_{2}$  61-63, 73, 75, 79, 81, 83, 84 in Table 1.) The upper limit of the electricity tariff is higher than in the Arkhangelsk region.

In the setting rates for the next financial year the executive authorities of the Russian Federation in the field of tariff regulation must take into the account the macro-economic indicators approved by the Government of the Russian Federation of the socio-economic development of the Russian Federation in 2011 and the planning period of 2012 and 2013, as well as changes in the structure, volumes and prices of fuels used to produce electricity, including due to natural factors. Also take into account changes in the volume of electricity purchased by power supply companies and delivered to consumers, including by increasing the purchase of electricity from the wholesale market of electric energy (power). If necessary, provide a breakdown of their calendar. One of the features is the unevenness of its electricity consumption and production over time. Therefore, in accordance with applicable law differentiation of tariffs made by consumer groups, the voltage levels, annual number of hours for use of the power zones (hours) a day.

Agency on tariffs and prices of the Arkhangelsk region has adopted a resolution on 28.12.2010 No 70-e / 1 "Electricity tariffs for the households and consumers equivalent to the category of the population, in the Arkhangelsk region, except Koryazhma." The following rates for the supplied electricity for the urban population living in homes without a fixed electric stoves and electric heating systems (up to 1 kW with VAT): one-part - 3.13 rubles., The two zones of the day: a day (from 7:00 am to 23 : 00) - 3.26 rubles., night - (23:00 to 7:00) - 0.81 rubles. For people living in rural areas, similar rates were, respectively, 2.19, 2.28 and 0.57 rubles.

Agency on tariffs and prices of the Arkhangelsk region has adopted a resolution on 17.06.2011 No 38-e/14 "Tariffs for electric energy (power) supplied by JSC" Arkhangelsk Sales Company "customers in areas that are not organized in the wholesale market price zones, except electric energy (power) supplied to the population and equalized with the categories of consumers. "Sampling rates of these major customers are given in Table. 2

Table 2

### Basic rates (excluding VAT) of consumers in the electric energy supplied by JSC "Arkhangelsk Sales Company"

N⁰	Indicators	measure.	Voltage rangers <sup>1</sup>			
			BH	CH1	CH2	HH
1	Consumption of less 5500	rubles./MB	3522,97	4173,20	4598,27	5209,94
	hours <sup>2</sup> (single rate)	т in an				
		hour				

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2	Electricity transmission (power) for two-part tariffs: 2.1. Bet on the maintenance of electric networks	rubles./MB т месс.	394664,57	407052,50	424128,05	540140,64
	2.2 Bet on the payment of electricity losses	rubles./MB т in an hour	123,15	364,33	466,73	648,38
3	Peak area <sup>3</sup> (in three zones on the area)	руб./МВт in an hour	4140,47	4790,70	5215,77	5827,44
4	Night zone (in 2 zones in the say)	rubles./MB т in an hour	2586,84	3237,07	3662,14	4273,81
5	Peak area (in 2 zones in the day)	rubles./MB т in an hour	3641,87	4292,10	4717,17	5328,84

Notes: 1 BH - 110 kV, CH1 - 35 kV, CH2 - 10.6 kV NN - 0.4 kV.

2 Basic tariff consumers, constituting about 90% of the total electricity consumption.

3 Peak load - between 12:00 - 14:00 h.

In order to enhance energy security of the existing worn-out electrical network in Arkhangelsk was developed innovative project to modernize the electricity grid through the construction of a new substation and cabling infrastructure Elias from it to the inner city and the developing campus of the Northern (Arctic) Federal University named after MV Lomonosov (Safa) [1]. With this solution provides not only energy security but also reduce the cost of the cost of running an electric network, and creates opportunities of technological connection of new customers to it. This will significantly shorten the payback on the implementation of the proposed project.

At the present, the regulatory framework retail market in the area of non-price Arkhangelsk region includes the following documents:

- ↓ The Federal Law of 26.03.2003 № 35-FZ "On Power";
- Resolution of the Government of the Russian Federation of 31.08.2006 № 530 "On approval of the main provisions of the functioning of retail electricity markets" (PO number 530 of 31.08.2006);
- ♣ Resolution of the Government of the Russian Federation of 26.02.2004 № 109 "On tsenoob Education in respect of electricity and heat in the Russian Federation";
- I order of the FTS of Russia from 10.06.2009 № 125-е / 1 "On Approval of the Procedure for the consolidated pro forma balance sheet of production and supply of electric energy (power) within the framework of the Unified Energy System of Russia on the subjects of the Russian Federation."закон от 26.03.2003 № 35-ФЗ «Об электроэнергетике»;

Existing regulations allow you to create in Arkhangelsk extra element of electricity infrastructure. As an investor in this case, developers may be involved - legal entities and individuals interested in technological connection to electricity. Involvement of the market power of the strategic northern region of a wide range of stakeholders from consumers will realize the state anti-monopoly policy in the energy sector.

The project to build a new section of the distribution network to 10 kV appropriate to implement in stages. At the first stage, the performance of the backbone cable from the transformer station 110/10 kV to the central district of the city of Arkhangelsk. [1] Based on the terms of the further development of the electrical network, a central distribution point should be built at the intersection of the Resurrection and Loginov.

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The proposed innovative project will not only solve the problem rationally reliable and economical electricity of NArFU, but to assist in the development of the entire infrastructure of the city of Arkhangelsk by addressing these pressing problems:improve the reliability of electricity supply and energy security of the city;

- $\checkmark$  reducing the cost of grid connection to the electricity grid for the applicants;
- ✓ formation of free electrical power in the central part of the city and promising areas of development.

### Literature

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