



The Republic of Kazakhstan Energy System Researches LLP

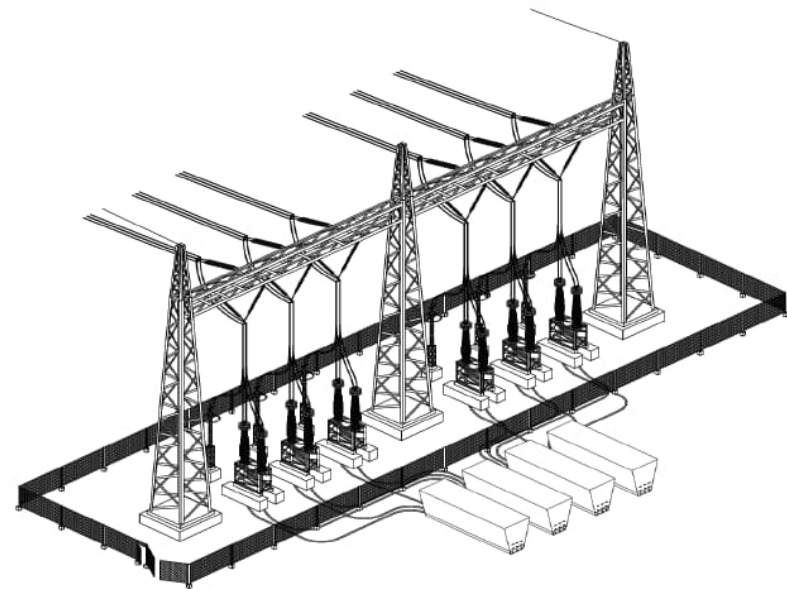
Presentation of the company

**Almaty
2026**

Presentation content



- About company
- Main activities
- Our Analytic tools
- Our Projects
- Our Customers
- Contact Information
- Key indicators of Kazakhstan UPS



About us (beginning)



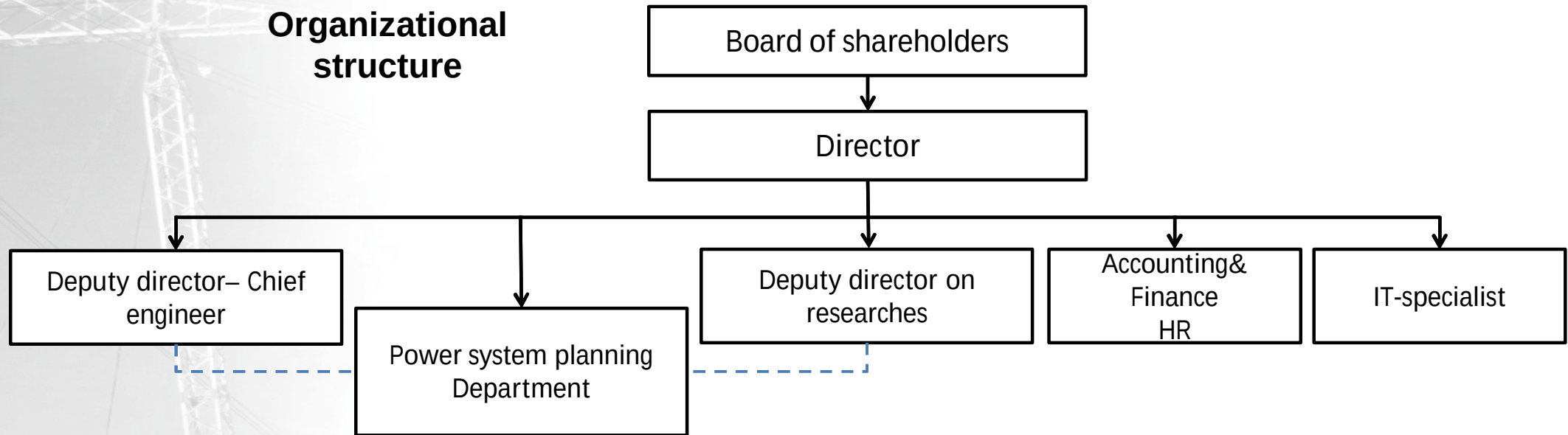
- **Energy System Researches LLP** was founded in 2011 and has key competencies in the search for optimal solutions for the prospective development of power supply to industrial enterprises, cities and regions in conjunction with the development of generating sources and system-wise electric networks of the UPS of Kazakhstan;
- **Unique experience** in designing the electric power system of the Republic of Kazakhstan using the latest achievements and planning methods, fundamental knowledge and progressive approaches of specialists with international certificates and specialized degrees from leading universities of Kazakhstan (JSC "Almaty University of Power Engineering and Telecommunications named Gumarbek Daukeyev"), Russia (National Research University "Moscow Power Engineering Institute", St. Petersburg and Peter the Great St. Petersburg Polytechnic University) and the USA (Arizona State University);
- **Up-to-date systematic information** on the current state and future development of 35-500 kV electric networks of UPS of Kazakhstan, industrial enterprises, transportation infrastructure and power plants, cities and towns. All our studies are performed using modern licensed software tools;
- **Experience in cooperation with foreign companies and partners**, the ability to conduct business negotiations, correspondence and presentations in English;
- **Orientation and commitment** for a final result, technical support of engineering solutions and decisions made up to the implementation stage and commissioning.

Our mission - Optimal solutions empowering the future

About us (continued)

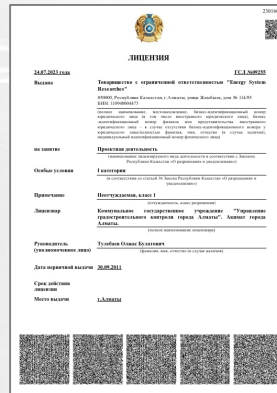


Organizational structure



- **Employee ethics, motivation and commitment** is maintained by the "Code of Conduct for Employees", "Social Policy", «Employer sponsored Health Insurance Program», "Bonus Policy" and "Career Development / Succession Plan";
- **Competencies of employees** are supported by ongoing trainings and experience exchange workshops. Our employees are regularly trained in new software products, as well as advanced planning and analysis methodologies;
- **International projects** are constantly conducted by our company in English, our employees speak and able to work in Kazakh, Russian and English languages.

About us (continued)



State license for design and survey works (1-st category)

Quality Management System ISO 9001-2016



Health&Safety Management system OHSAS 18001-2008



Social policy for employees

Independent Audit of Financial Statements

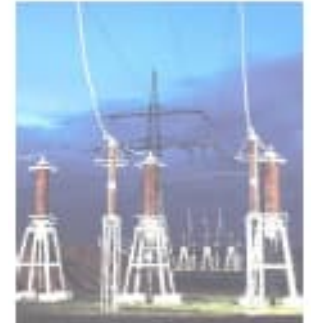


Employee Code of Conduct

Main activities



- ❑ **Marketing research and future demand forecasting** of electricity consumption, electrical loads, development of generation, electric power and energy balances elaboration etc;
- ❑ **Grid expansion planning** (35 kV and above) for industrial enterprises, cities and regions, 220 kV and above networks of UPS of Kazakhstan;
- ❑ **Grid connection schemes** elaboration for power plants, both traditional (TPPs, CHPs, GTPPs, CCGTs, HPPs), and renewable energy sources (small HPPs, wind farms and solar power plants, etc.);
- ❑ **External power supply schemes** for industrial enterprises, deposits and mining&processing enterprises, electrified traction, oil and gas pipelines, water carrying facilities;
- ❑ **Feasibility studies** elaboration for the construction of electrical grid infrastructure and renewable energy sources;
- ❑ **Electrical and system studies** in industrial and distribution networks, micro-energy systems (electromagnetic and electromechanical transients, transient stability of parallel and isolated operation, quasi-stationary and switching overvoltage),
- ❑ **Justifying calculations on the Integration (stable operation) of renewable energy sources in UPS of Kazakhstan.**
- ❑ **Power system dispatch modeling and generation curtailment analysis, including the development of an optimal generation portfolio based on least-cost generation planning** using PLEXOS software.
- ❑ **Forecast of Single Buyer tariffs** for electricity and capacity



Our Analytic tools

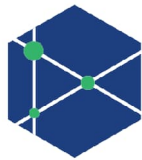


№	Types of Calculations	Used Programs
1 	Flow distribution and voltage levels, losses, aperiodic static stability and stability of load nodes, optimization of operating modes of electric networks. The steady-state values of currents of single and multiple short circuits taking into account real EMF and mutual angles.	RastrWin RastrTKZ (Russia)
2 	Electric modes and energy losses, calculations of aperiodic static and dynamic stability, allows you to simulate advanced network elements (frequency converters RES, HVDC, FACTS, etc.).	PSS/E (USA)
3 	Electric modes and energy losses, calculations of aperiodic static and dynamic stability, allows you to simulate advanced network elements (frequency converters RES, HVDC, FACTS, etc.).	Power Factory (Germany)
4 	The productivity of wind power plants, the optimization of the location of wind turbines within a given site, the statistical processing of wind potential measurement data and the construction of resource maps.	WindPRO, WAsP (Denmark)
5 	Planning, modeling, optimization and analysis of the efficiency of solar power plants, taking into account the geographical location and climatic conditions of a particular site, the type of equipment used, the orientation of solar panels, natural and artificial obstacles.	PVsyst (Switzerland)
6 	Advanced research modeling, optimization, and development forecasting for complex multi-carrier energy systems. Long-term strategic generation mix planning, analysis of renewable energy integration and storage systems, medium- and short-term simulation of power markets, etc., as well as reliability and stability stress-testing of grid infrastructure.	PLEXOS (Australia / USA)

Our Customers (beginning)



Our Customers (continued)



TOO «КАЭС»



TOO «Гиперборея»



Hub Energy



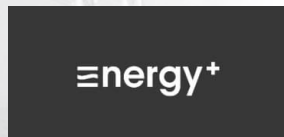
MINERAL
PRODUCT
INTERNATIONAL



ALCOR ENERGY



TOO «МТ и К»



Our projects (beginning)



List of relevant projects completed by our team
(as of January 2026)

No	Project name	Year	Results
1	Grid connection study of cascade of Shelek HPPs Customer: KAZHYDRO LLP	2011	Approved by KEGOC, JSC, AZHK, JSC, MINT Rsk
2	Grid connection study of WPP with installed capacity of 48 MW on Aktau site Customer: SYNERGY ASTANA LLP	2011	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
3	Feasibility study for the construction of WPP with installed capacity of 48 MW in Aralysk site Customer: SYNERGY ASTANA LLP	2011	Approved by RSGP "Gosenergetik" and MINT Rsk, in-dustrial tariff is selected
4	Feasibility study "Construction of OHTL 500 kV Semey - Atkaysay - Taldykorgan - Almaty" Customer: EnergoBytPower LLP	2012	Approved by RSGP "Gosenergetik"
5	Grid connection study of Agni KCO GTPP in Aralysk region Customer: KAZHYDERGOPROM JSC	2012	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
6	Grid connection study of Unak GTPP with installed capacity of 200 MW in West Kazakhstan region Customer: Baty Power LLP	2012	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
7	Grid connection study of Batamaina WPP with installed capacity of 48 MW in Aralysk region Customer: SYNERGY ASTANA LLP	2013	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
8	Grid connection study of Make HPPs with installed capacity of 18 MW in Zhambyl region Customer: Tala Green Power LLC	2013	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
9	Grid connection study of Kabaikha CHP with installed capacity of 240 MW in Aralysk region Customer: local authority - Aralysk of Aralysk region	2013	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC

No	Project name	Year	Results
10	External power supply study of Lomonsoskaya deposit in Kostanay region Customer: Lomonsoskaya LLP	2013	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
11	Detailed design of 500 kV OHTL Chibrikovskaya-Semey (line length 400 km) Customer: EnergoBytPower LLP	2013	Approved by RSGP "Gosenergetik"
12	Analysis of Steady-State and Transient Stability of the Parallel Operation of Power Systems of the Kyrgyz Republic and the Republic of Tajikistan under CASA-1000 Project Customer: TETRA TECH on behalf of USAID	2013	Final report is accepted and approved by USAID
13	Grid connection study of Semey CHP-3 with installed capacity of 180 MW in Aralysk region Customer: Baty Green NS LLP	2013	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
14	Feasibility study for the construction of 500 kV cross border OHTL Kazakhstan-Kyrgyzstan Customer: KEGOC, JSC	2014	Approved by RSGP "Gosenergetik"
15	The feasibility study for the connection of West Kazakhstan power system with UPS of Kazakhstan region Customer: KEGOC, JSC	2014	PhP is approved by the customer, KEGOC, JSC
16	External power supply study of Aralysk OMBs Customer: PetrolKazakhstan Kurmuk Resources JSC	2014	Approved by KEGOC, JSC, technical conditions are issued by KEGOC
17	Grid connection study of Batamaina WPP with installed capacity of 100 MW in Aralysk region Customer: EUROFINA KZ LLP	2014	Approved by KEGOC, JSC and ME Rsk, technical conditions are issued by KEGOC
18	Grid connection study of Shapay WPP with installed capacity of 100 MW in South Kazakhstan region Customer: EUROFINA KZ LLP	2014	Approved by KEGOC, JSC and ME Rsk, technical conditions are issued by KEGOC

No	Project name	Year	Results
19	Grid connection study of Baty SPP with installed capacity of 2 MW in Mangista region Customer: Group Independent LLP	2014	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
20	Grid connection study of Baty SPP with installed capacity of 5 MW in Mangista region Customer: Best Group NS LLP	2014	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
21	Grid connection study of Aktau WPP with installed capacity of 180 MW in Mangista region Customer: Best Group NS LLP	2014	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
22	External power supply study of NPS-603 (Kazakhstan) JSC pumping station Customer: Electroservice LLP	2014	Approved by KEGOC, JSC and ME Rsk, technical conditions are issued by KEGOC
23	Feasibility study for the construction of Babashkaya TFP grid connection objects Customer: KEGOC, JSC	2014	Approved by RSGP "Gosenergetik"
24	Grid connection study of Zhambyl GTPP heating Gas Processing Unit #3 in Aralysk region Customer: CMC-KazakhstanEnergy JSC	2014	Approved by KEGOC, JSC and ME Rsk
25	Grid connection study of Gas field power plant Baty 1.5 MW in North-West Kazakhstan region Customer: PetrolKazakhstan Kurmuk Resources JSC	2014	Approved by KEGOC, JSC and ME Rsk, technical conditions are issued by KEGOC
26	Construction of emergency auxiliary supply for restoration of GTPP in Kyrgyzstan region Customer: "Tutkayev" LLP	2014	Adopted by the Customer
27	Feasibility study for the construction of WPP with installed capacity of 48 MW on Batamaina site Customer: "KazGreen" LLP	2014	Approved by RSGP "Gosenergetik"

No	Project name	Year	Results
28	External power supply study of NPS-603 (Kazakhstan) JSC water pumping station Customer: Electroservice LLP	2014	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
29	Grid connection study of 24 MW small hydro power plant cascade on Baykand river in Baykand district of Aralysk region Customer: "KazGreen" LLP	2014	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
30	Grid connection study of 37.5 MW small hydro power plant cascade on Baykand river in Baykand district of Aralysk region Customer: "KazGreen" LLP	2014	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
31	Grid connection study and Feasibility study for the construction of WPP with installed capacity of 50 MW on Fort-Shovkenskaya site in Mangista region Customer: "CM Green Energy" LLP	2014	Approved by KEGOC, JSC, MINT Rsk, technical conditions are issued by KEGOC
32	External power supply study of Karamayevskiy gold deposit concentrator plant in Zhelkarsk town of Kostanay region Customer: "KSPM-519" LLP	2014	Approved by KEGOC, JSC
33	Grid connection study of small HPP-2 on Lepsey river in Aralysk region Customer: "KazGreen" LLP	2014	Approved by KEGOC, JSC and ME Rsk
34	Grid connection study of small WPP on Kura river in Aralysk region Customer: "KazGreen" LLP	2014	Approved by KEGOC, JSC and ME Rsk
35	Feasibility study of Batamaina WPP with installed capacity of 48 MW in Aralysk region Customer: "KazGreen" LLP	2014	Approved by KEGOC, JSC and ME Rsk
36	Grid connection study and Feasibility study for the construction of SPP with installed capacity of 40 MW in Aralysk region Customer: "KazGreen" LLP	2014	Approved by KEGOC, JSC and ME Rsk
37	Grid connection study and Feasibility study for the Second stage (SPP expansion) of SPP on Bume site in Zhambyl region Customer: "United Green Energy" Limited	2014	Approved by KEGOC, JSC, technical conditions issued, PS approved by RSGP "Gosenergetik"

No	Project name	Year	Results
38	Research on Renewable energy integration capabilities of the Kazakhstan power system at current and future prospects Customer: "KEGOC" JSC and ME Rsk	2015	Approved by the customer "KEGOC" JSC and ME Rsk
39	Power and energy balance of the Kazakhstan power system for 2016-2022 period with long-term prospects till 2025, 2030 Customer: "KEGOC" JSC	2016	Approved by the customer "KEGOC" JSC
40	Grid connection study and Feasibility study for the SPP on Batamaina in Kyrgyzstan region Customer: "United Green Energy" Limited	2016	Approved by KEGOC, JSC, technical conditions issued, PS approved by RSGP "Gosenergetik"
41	Grid connection study and Feasibility study for the SPP on Karamayevskiy-Gold in Aralysk region Customer: "United Green Energy" Limited	2016	Approved by KEGOC, JSC, technical conditions issued, PS approved by RSGP "Gosenergetik"
42	Grid connection study for 10 MW gas piston power plant OPCS-UTPL in West Kazakhstan region Customer: "KazGreen" LLP	2016	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
43	Grid connection study for 4.5 MW WPP in Kapshagay region Customer: "KazGreen" LLP	2016	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
44	Detailed design of 500 kV OHTL Semey - Atkaysay (line length 400 km) Customer: "KazGreen" LLP	2016	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
45	Grid connection study for 4.5 MW WPP in Aralysk region Customer: "KazGreen" LLP	2016	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
46	Technical-economic research for construction of solar power plant near the village of Shaulder in Turalistan region Customer: "Almaty Solar" LLP	2016	Final report is accepted by the Customer
47	External power supply study for gold mining complex "KazGold" in Aralysk region Customer: "KazGold" LLP	2016	Approved by KEGOC, JSC, technical conditions issued
48	External power supply study for one min. processing complex "KazGold" in Aralysk region Customer: "KazGold" LLP	2016	Approved by KEGOC, JSC, technical conditions issued

No	Project name	Year	Results
49	Grid connection study and Feasibility study for the 100 MW SPP Kapshagay in Aralysk region Customer: "ENERGIE KAZAKHSTAN" LLP	2017	Approved by KEGOC, JSC, technical conditions issued, PS approved by RSGP "Gosenergetik"
50	External power supply study and feasibility study for external power supply objects for metallurgical complex based on Naasokov iron ore deposit in Aralysk region Customer: "KazGreen" LLP	2017	Approved by KEGOC, JSC, technical conditions issued, PS approved by RSGP "Gosenergetik"
51	Grid connection study and Feasibility study for the 18 MW SPP Buzhynskiy in South Kazakhstan region Customer: "United Green Energy" Limited	2017	Approved by KEGOC, JSC, technical conditions issued, PS approved by RSGP "Gosenergetik"
52	Elaboration of external power supply options for Kazakhstan hydro-metallurgical company assets with future prospects Customer: "Kazakhstan Technology" LLP	2017	Final report is accepted by the Customer
53	Grid connection study for 4.5 MW WPP Hury-2 in Aralysk region Customer: "Hury-2" WPP LLP	2017	Approved by KEGOC, JSC, AZHK, JSC, technical conditions issued
54	Grid connection study for Buzhynskiy HPP in Kazakhstan district Aralysk region Customer: "KazGreen" LLP	2017	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
55	Grid connection study for SPP Shalysk in Kyrgyzstan region Customer: "Shalysk Solar (Gleam Group)" LLP	2017	Approved by KEGOC, JSC, technical conditions issued
56	Grid connection study for 30.4 MW gas piston power plant in Zhambyl region Customer: "CafuKazakhstan" LLP	2017	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
57	Detailed design for the second stage (SPP expansion) of Bume Solar Power Plant in Zhambyl region Customer: "United Green Energy" Limited	2017	Detailed design is finalized and approved by out-of-departmental expertise
58	Grid connection study and Feasibility study for the waste treatment gas piston power plant in the city of Kengir Mangista region Customer: "KazGreen" LLP	2017	Approved by KEGOC, JSC and ME Rsk, technical conditions issued, PS approved by RSGP "Gosenergetik"

No	Project name	Year	Results
59	Actualization of power and energy balance for power system of the Republic of Kazakhstan with future prospects till 2015-2024 and 2030 Customer: "KEGOC" JSC	2017	Approved by Ministry of Energy (order No 127) dated 25.12.2017
60	Grid connection study for HPP-2 on Chizha river in Aralysk region Customer: "KazGreen" LLP	2017	Approved by KEGOC, JSC, technical conditions issued
61	Grid connection study for 18 MW SPP in Zhambyl region Customer: "KazGreen" LLP	2018	Approved by KEGOC, JSC, technical conditions issued
62	Grid connection study for 5 MW SPP in Zhambyl region Customer: "KazGreen" LLP	2018	Approved by KEGOC, JSC, technical conditions issued
63	Grid connection study and a part of Feasibility study for waste utilization plant in Kengir village of Mangista region Customer: "Kazakhstan Sarmatoprok" LLP	2018	Approved by KEGOC, JSC, technical conditions issued, Feasibility study is approved by RSGP "Gosenergetik"
64	Detailed design for 14 MW Zabayra Solar Power Plant in South Kazakhstan region Customer: "KazGreen" LLP	2018	Detailed design is finalized and approved by out-of-departmental expertise
65	Grid connection study and a part of Feasibility study for Karamayevskiy gold extracting plant in Aralysk district of Mangista region Customer: "KazGreen" LLP	2018	Approved by KEGOC, JSC, technical conditions issued, Feasibility study is approved by RSGP "Gosenergetik"
66	Grid connection study and a part of Feasibility study for copper extracting plant in Aygaysk district of East Kazakhstan region Customer: "KazGreen" LLP	2018	Approved by KEGOC, JSC, technical conditions issued, Feasibility study is approved by RSGP "Gosenergetik"
67	Detailed design for 50 MW Bakhmetyev Solar Power Plant in Kyrgyzstan region Customer: "United Green Energy" Limited	2018	Detailed design is finalized and approved by out-of-departmental expertise
68	Grid study of Feasibility study "Reinforcement of West Kazakhstan zone transmission grid" Customer: "EnergyStrategy" LLP	2018	Feasibility study is finalized and approved by RSGP "Gosenergetik"

No	Project name	Year	Results
69	Grid connection study and a part of Feasibility study for 1st-grade line production plant in Kostanay region Customer: "KazGreen" LLP	2018	Approved by Kostanay Energy (order No 127) dated 25.12.2017
70	Pre-review of the assessment report on current state of the emergency automatic protection system (EAPS) in Kazakhstan due to cross-border inter-connection needs with Uzbekistan Customer: "KazGreen" LLP (on behalf of USAID)	2018	Report is finalized and approved by USAID and Uzbekistan
71	Grid connection study for 40 MW SPP in Pavlodar district of Aralysk region Customer: "KazGreen" LLP	2018	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
72	Grid connection study for Zhetysay extracting plant in Aralysk region Customer: "KazGreen" LLP	2018	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
73	Grid connection study for 3 MW SPP in Kapshagay city of Aralysk region Customer: "KazGreen" LLP	2018	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
74	Actualization of power and energy balance for power system of the Republic of Kazakhstan with future prospects till 2015-2023 and 2030 Customer: "KEGOC" JSC	2018	Approved by Ministry of Energy (order No 127) dated 25.12.2017
75	Detailed design for 100 MW Naryn Solar Power Plant near the city of Kapshagay in Aralysk region Customer: "KazGreen" LLP	2019	Detailed design is finalized and approved by out-of-departmental expertise
76	Grid connection study for 50 MW WPP in Kostanay region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
77	Grid connection study for 50 MW WPP in Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
78	Grid connection study for 100 MW WPP in Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
79	Justifying calculations on power system integration of 43.6 MW WPP Fort-Shovkenskaya with power generation "KT Rametel Company" LLP	2019	Justifying calculations on power system integration of 43.6 MW WPP Fort-Shovkenskaya with power generation "KT Rametel Company" LLP

No	Project name	Year	Results
80	Grid connection study for 50 MW SPP Aralysk in Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC, technical conditions issued
81	Justifying calculations on power system integration of 100 MW Naryn Solar Power Plant near the city of Kapshagay in Aralysk region Customer: "KazGreen" LLP	2019	Justifying calculations on power system integration of 100 MW Naryn Solar Power Plant near the city of Kapshagay in Aralysk region
82	Grid connection study for 8 MW small hydro power plant on Kural river in Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC and ME Rsk, technical conditions issued
83	Grid connection study for 100 MW WPP near Batamaina SPP in the city of Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC, technical conditions issued
84	Grid connection study for 4.35 MW WPP near Batamaina SPP in the city of Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC, technical conditions issued
85	Grid connection study for 10 MW WPP Zhambyl in Mangista region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC, technical conditions issued
86	Grid connection study for second phase (SPP expansion) of Batamaina SPP in the city of Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC, technical conditions issued
87	Grid connection study for Donkey extracting plant in Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC, technical conditions issued
88	Grid connection study for Logistic Hub in Aralysk region Customer: "KazGreen" LLP	2019	Approved by KEGOC, JSC, technical conditions issued

No	Project name	Year	Results
89	Pre-PS documentation for renewable energy source in preparation to RES auction - 32 MW solar power plants near the village of Shaulder in Turalistan region Customer: "KazGreen" LLP	2019	Based on Pre-PS documentation in the fall 2019 RES auction was successfully held
90	Author's supervision for the construction of Bakhmetyev SPP Customer: "Bakhmetyev Solar" LLP	2020	SPP was successfully built and commissioned
91	Grid connection study for 10 MW WPP in Zhambyl region Customer: "KazGreen" LLP	2020	Approved by KEGOC, JSC, technical conditions issued
92	Author's supervision for the construction of 14 MW Batamaina SPP in the city of Aralysk region Customer: "KazGreen" LLP	2020	SPP was successfully built and commissioned
93	Detailed design for SPP 5 MW Aralysk in the Turalistan region Customer: "KazGreen" LLP	2020	Detailed design is finalized and approved by out-of-departmental expertise
94	External power supply study of Roder energy node Customer: "KazGreen" LLP	2020	Approved by KEGOC, JSC, technical conditions issued
95	Grid connection study for WPP in the "KazGold" mine in the Shu district of the Zhambyl region Customer: "KazGreen" LLP	2020	Approved by KEGOC, JSC, technical conditions issued
96	Grid connection study for the southern pits of the "KazGold" mine in the Shu district of the Zhambyl region Customer: "KazGreen" LLP	2020	Approved by KEGOC, JSC, technical conditions issued

- As of January 2026, the company has completed about 183 projects, for each of them a positive result has been obtained (approval, agreement, technical conditions, positive conclusion of the non-departmental examination).



No	Project name	Year	Results
13	External power supply study for industrial enterprises from 12 districts in Aralyn region Company "Yula Energy" LLP	2002	Approved by KEGOC Technical conditions and approved
14	Grid connection study for 8 MW HP-P on Tenkiz Company "Kazakhstan Energy" LLP	2002	Approved by DSO and KEGOC, JSC, technical conditions tested and proved
15	External power supply study for Naurzakpog copper plant Company "Kazakhstan Copper" LLP	2002	Approved by KEGOC, Technical conditions and approved
16	Assessment grid connection study for Chirchik HP-2 and HP-3 on Kura river in Aralyn region Company "Koraykya HP-2 LLP" and "Naraltai HP-3" LLP	2002	Approved by DSO and KEGOC, JSC, technical conditions tested and proved
17	Pre-PS for the construction of additional REES with a capacity of 10 MW with a voltage of 10 kV in the city of Bishkek in the Republic of Kazakhstan Company "1010 MV" LLP	2002	PS-1 completed and accepted by the Customer
18	External power supply study for SARANI Industrial Company "KGE Power Line" LLP	2002	Approved by KEGOC, Technical conditions and approved
19	External power supply study for project "Construction of engineering and communication infrastructure for the industrial zone of the Osh-110 kV substation of the city of Temir, Kazakhstan" "IRPARENKORG" LLP	2003	Grid connection study proved by DSO and KEGOC, JSC, technical conditions tested and proved
20	External power supply study for the Health- recreational complex in the "Zhetysai" district of the Company "Energy Company Company" LLP	2003	Approved by DSO and KEGOC, JSC, technical conditions tested and proved

No	Project name	Year	Results
176	Grid connection study for the project "Construction of Shabbari (GPR) – 14 stage with a capacity of 2.640 MW in village of Shabbari, Pavlodar region Customer: STROYINDUSTRIAL LLP	2020	Approved by KEGOC technical conditions of the project
178	Development of the project "Principal Solutions for Energy Management with a special justification for 2024" at Aktyubinskoye Department Customer: AKBANK	2020	Approved by KEGOC technical conditions of the project
180	Development of the "External power supply study of the Saryarghane graphite deposit in the Altai region" of the Kargandinsky region Customer: USTOGHAN LLP	2020	Approved by KEGOC technical conditions of the project
182	Development of the "External power supply study of the plant for thermal cleaning of graphite carbon" of the Kargandinsky region Customer: KARGANDINSKY LLP	2020	Approved by KEGOC technical conditions of the project
184	Amended of the grid connection study of the wind farm of 1 GW with an electricity storage system in the area of the village of Mirny, Zhurtyy region Customer: Aktyubinsk Energy LLP	2020	Approved by KEGOC technical conditions of the project
186	Grid connection study for the 20 MW power gas reciprocating engine of the metallurgical enterprise Customer: KAZFERROUS LLP	2020	Approved by KEGOC technical conditions of the project
188	Substituting electrical calculations for the project "Hybrid Power Plant in Zhanakosgen. Design of the WABT system. Emergency Automation. Modernization of the Power Plant in Zhanakosgen. Design of the Customer: INFENERGY LLP	2020	Approved by KEGOC technical conditions of the project

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Our projects (continued)

SPP Burnoe 50 MW (The second stage)



- **Grid connection study** with approval and receipt of Technical conditions from transmission system operator;
- **Feasibility study** with approval and obtaining the conclusion of the State Expertise;
- **Detailed design** with approval and receipt of the conclusion of the State Expertise, as well as getting a construction permit;
- **Authors supervision for construction process**;
- **Justifying calculations on power system integration** of SPP Burnoe with power quality assessment and obtaining approval from KEGOC.

Our projects (continued)

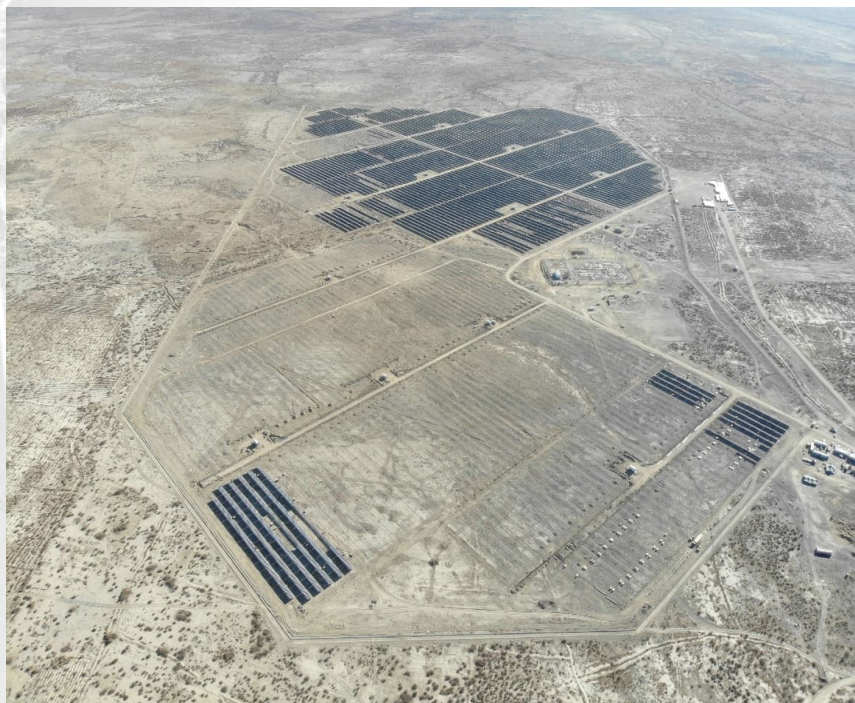
SPP Kapshagay (Nurgisa) 100 MW 2



- **Grid connection study** with approval and receipt of Technical conditions from transmission system operator;
- **Feasibility study** with approval and obtaining the conclusion of the State Expertise;
- **Detailed design** with approval and receipt of the conclusion of the State Expertise, as well as getting a construction permit;
- **Justifying calculations on power system integration of SPP Kapshagay (Nurgisa)** with power quality assessment and obtaining approval from KEGOC.

Our projects (continued)

SPP Baikonyr 50 MW



- **Grid connection study** with approval and receipt of Technical conditions from transmission system operator;
- **Feasibility study** with approval and obtaining the conclusion of the State Expertise;
- **Detailed design** with approval and receipt of the conclusion of the State Expertise, as well as getting a construction permit;
- **Authors supervision for construction process**;
- **Justifying calculations on power system integration of SPP Baikonyr** with power quality assessment and obtaining approval from KEGOC.

Our projects (continued)

SPP Zadarya 14 MW



- **Amendment of Grid connection study** with approval and receipt of Technical conditions from distribution system operator;
- **Detailed design** with approval and receipt of the conclusion of the State Expertise, as well as getting a construction permit;
- **Authors supervision for construction process;**
- **Justifying calculations on power system integration of SPP Zadarya** with power quality assessment and obtaining approval from KEGOC/OZhT.

Our projects (continued)

WPP Badamsha-1 48 MW, WPP Badamsha-2 48 MW



WPP Badamsha-1 48 MW



WPP Badamsha-2 48 MW

- **Grid connection study** with approval and receipt of Technical conditions from transmission system operator;
- **Feasibility study** with approval and obtaining the conclusion by out-of-departmental expertise;
- **Detailed design (cost estimate calculation)** with approval and receipt of the conclusion by out-of-departmental expertise, as well as getting a construction permit;
- **Justifying calculations on power system integration of WPP-1** approval from KEGOC JSC for WPP commissioning was obtained.

Our projects (continued)

SPP Shoulder 50 MW



- **Pre-FS documentation for renewable energy source** within preparation to RES auction - 50 MW solar power plants near the village of Shoulder in Turkestan region;
- **Preparation of technical documentation ITT.** Based on Pre-FS documentation in the fall 2019 RES auction was successfully held;
- **Author's supervision** for the construction of the SPP Shoulder Early works objects. Construction of Early works objects successfully completed.

Our projects (continued)

«Korinskaya GES» 28,5 MW



- **Grid connection study** of run-of-river HPP on Kora river in Zetysu region;
- **Obtainment of Grid connection permit** from KEGOC JSC and Karatal-Transit LLP.

Our projects (continued)

HPP-2 on Chizha river 25,8 MW



- **Grid connection study** for HPP-2 on Chizha river in Zhetysu region with approval from KEGOC JSC and Karatal Tranzit LLP;
- **Obtainment of Technical conditions.**

Our projects (continued)

WPP YBYRAI (ZHEL) 50 MW



- **Grid connection study** for 50 MW WPP in Kostanay region with approval from KEGOC JSC and MRET LLP;
- **Obtainment of Technical conditions.**

Our projects (continued)

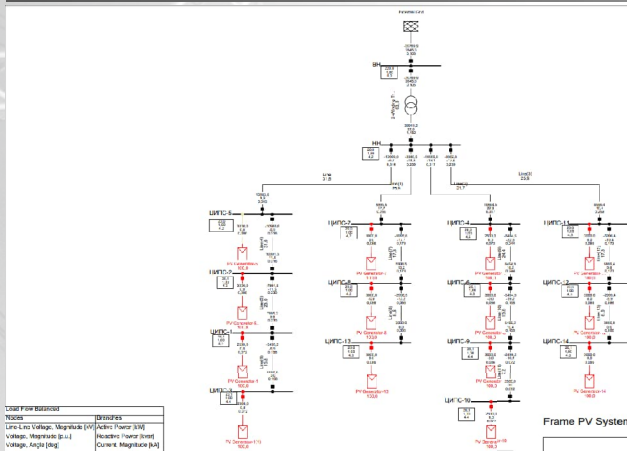
SPP Mukagali (Kaskelen) 50 MW



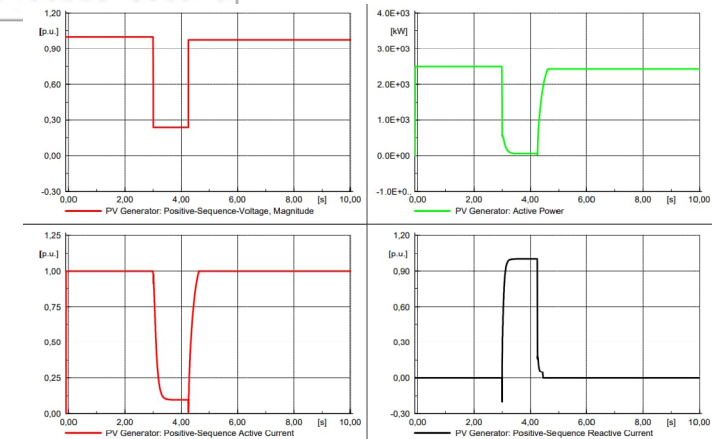
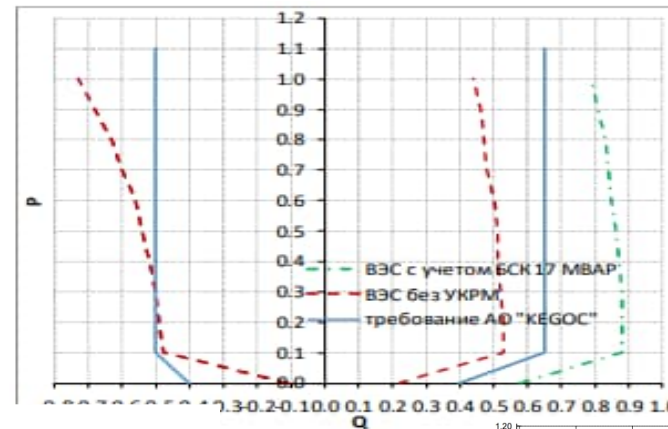
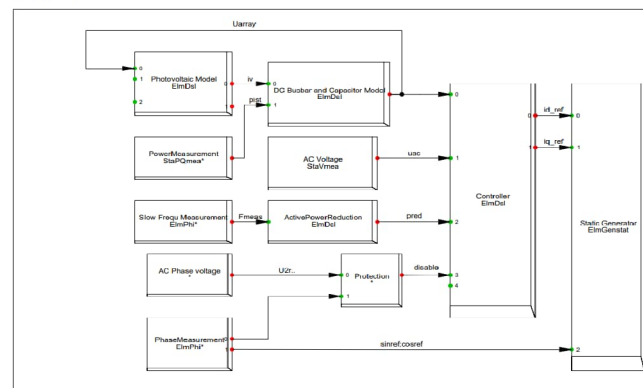
- **Grid connection study** for 50 MW SPP in Almaty region with approval from KEGOC JSC;
- **Obtainment of Technical conditions.**

Our projects (continued)

Justifying calculations on power system integration of RES with power quality assessment



Frame PV System:



- Comparative analysis of the characteristics of RES equipment with the requirements of the System Operator in terms of ensuring stable operation and power quality indicators;
- Making up a model of RES and performing justifying calculations on the Kazakhstan power system simulation model;
- Analysis of the results, conclusions/recommendations, coordination with the electric grid company and the transmission system operator.

Our projects (continued)

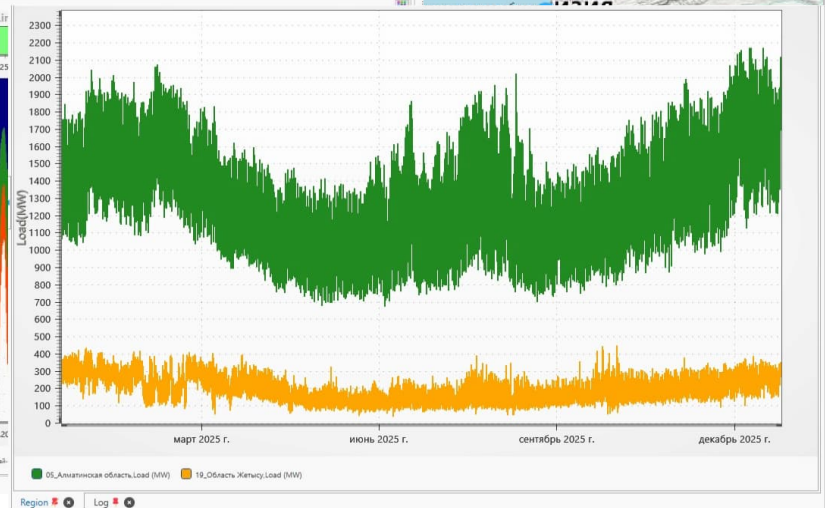
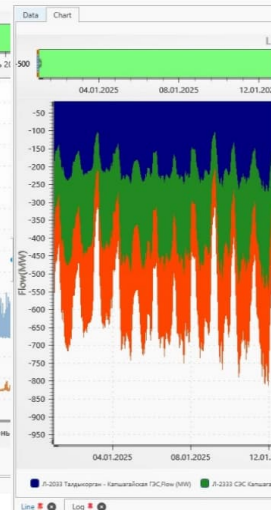
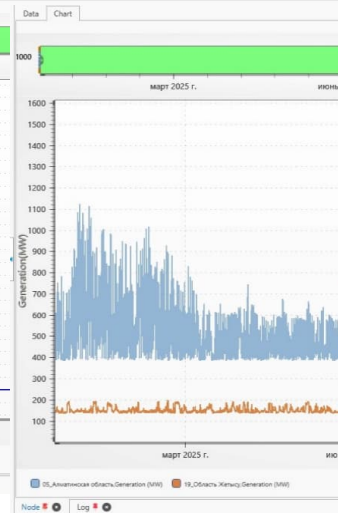
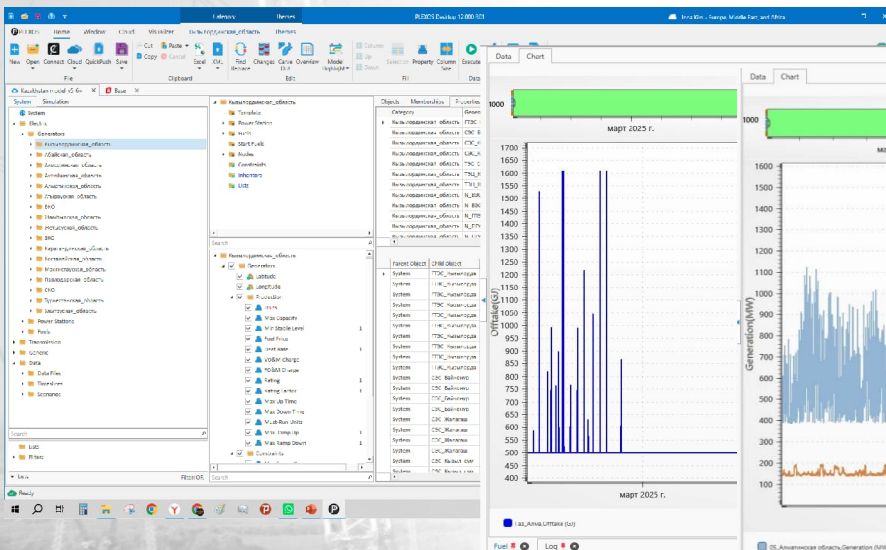
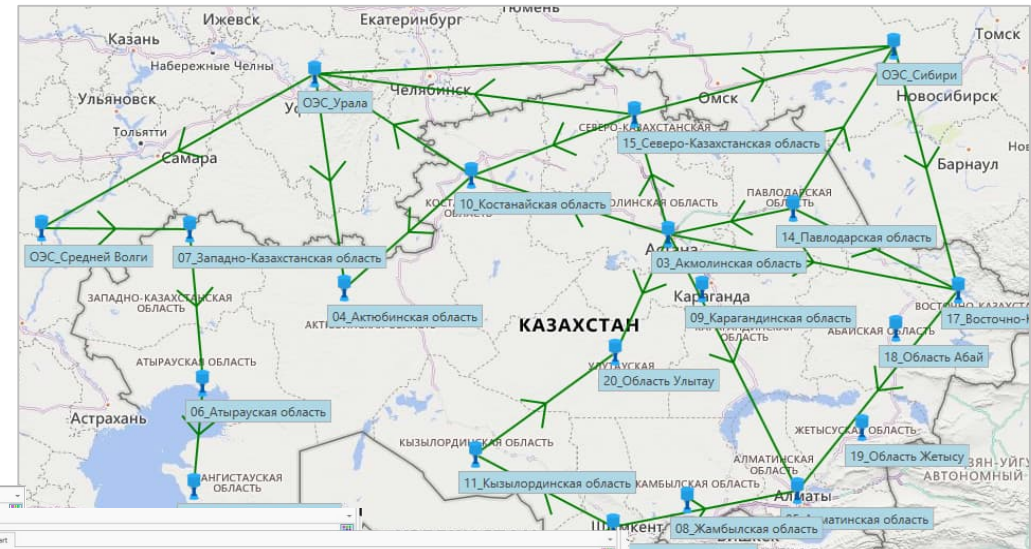
Application of PLEXOS for Power System Analysis and Planning



PLEXOS is software for the comprehensive mathematical modeling, optimization, and analysis of energy markets and power systems.

Key modeling objectives:

- ✓ Optimizing the development of generation and network topology at minimum cost;
- ✓ Developing generation profiles;
- ✓ Determining power curtailment volumes;
- ✓ Modeling BESS (Battery Energy Storage System) operation;
- ✓ Forecasting tariffs;
- ✓ Calculating resulting power flows across monitored interfaces;
- ✓ etc.



Feedback and references from our clients (beginning)



- Over the years of operation ESR received loyalty from our regular customers
- Not a single unsatisfied customer or claim during the period of existence of the company

Feedback and references from our clients (continued)



- Over the years of operation ESR received loyalty from our regular customers
- Not a single unsatisfied customer or claim during the period of existence of the company

Thanks for attention!



Contact Information:

"Energy System Researches" LLP

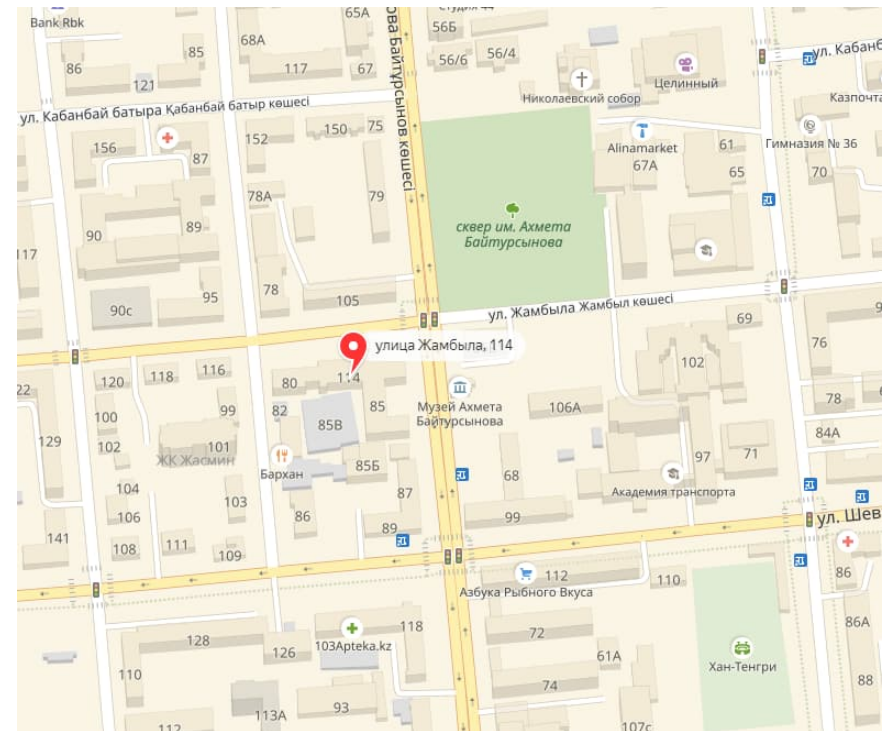
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Main data of Kazakhstan UPS

Reporting data 2025 (Δ to 2024)

- Peak Load– 17.72 GW (+1.12 GW; +6.75%)
- Electricity Consumption– 124.6 TWh (+4.6 TWh; +3.8%)
- Power Plant Generation– 123.1 TWh (+5.2 TWh; +4.4%)
- Installed Capacity – 26.8 GW (+1.5 GW; +5.9%)
- Available Capacity– 22.8 GW (+4.0 GW; +20.9%)

