



**COMPLEX
ENGINEERING
PROJECTS
CONSTRUCTION
ON TURNKEY**
1-100 MW BASIS



MKC[®]
группа компаний

SINCE 2005

About the company



MKS® GROUP OF COMPANIES IS:

- ✓ International energy generating company
- ✓ Mini-MPP turnkey construction
- ✓ Industrial engineering
- ✓ Implementation of projects of any degree of complexity
- ✓ Implementation of power supply contracts' projects
- ✓ Research and development
- ✓ Extensive geography of works

GEOGRAPHIC FOOTPRINT



The MKS® Group of Companies in figures

- ✓ Power facilities engineering
- ✓ Mini-MPP turnkey
- ✓ Package solutions
- ✓ Innovative equipment production
- ✓ MWM® official dealer and service-partner
- ✓ Implementation of power supply contracts
- ✓ Integrator of effective power solutions
- ✓ Team of manufacturers and engineers
- ✓ 3D design, teamwork at a BIM-server
- ✓ Computer-Aided Manufacturing
- ✓ EPC-contracts
- ✓ Unit production



15 YEARS
IN THE MARKET



244 MW
OF CAPACITY
IN OPERATION



53
IMPLEMENTED
PROJECTS



MWM®
OFFICIAL DEALER
AND SERVICE-PARTNER



20,000
ITEMS AVAILABLE IN
THE COMPANY'S
WAREHOUSE



20 TYPES
OF PRODUCED
INNOVATIVE
EQUIPMENT



4,200 sq.m
OF PRODUCTION
FACILITIES



8
BRANCHES



250
EMPLOYEES



2
INTERNATIONAL
AWARDS



The MKS[®] Group of Companies - MWM[®] official dealer and service-partner



The MKS[®] Group of Companies is the official dealer and service-partner of MWM[®] – one of the leading brands in the sphere of cogeneration installations of autonomous power supply production. From 2017 to 2019 the MKS[®] Group of Companies is dealer No. 1 in Russia by the results of the MWM[®] engines' sales.

The official dealer and service-partner of MWM[®] status allows the MKS[®] Group of Companies to resolve all complex of issues connected with sales and further technical maintenance of engines of this brand. All MKS[®] engineering personnel underwent the certified training at the manufacturing plant in Germany. Specialists of MKS[®] can carry out balancing and commissioning of all levels of complexity. Besides, the status of the official dealer allowed the MKS[®] Group of Companies to significantly reduce the MWM[®] equipment delivery timeframe and also to organize an expanded warehouse of the MWM[®] spare parts based on the own workshop in Chelyabinsk and other cities of presence.

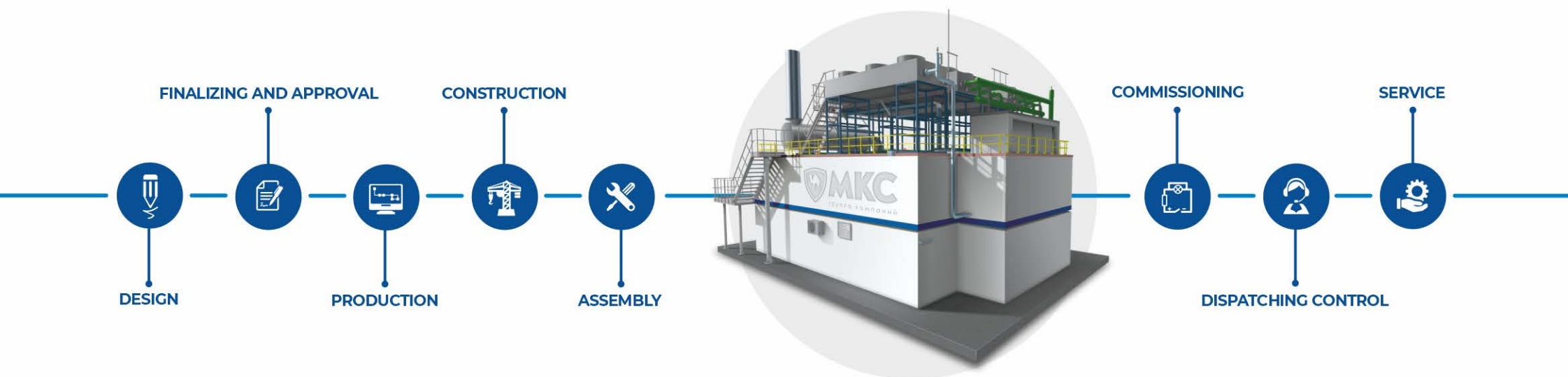
Caterpillar Energy Solutions GmbH



Mini-MPP turnkey



The MKS® Group of Companies is one of the leaders of the distributed power generation industry in the Russian Federation. Its' main activity is construction of turnkey power objects. The company designs, builds and operates gas genset power plants. In 15 years the company constructed 53 mini-MPPs — in the Chelyabinsk, Sverdlovsk, Kurgan, Tambov regions, Krasnodar Territory, Khanty-Mansiysk Autonomous Region and also in the Republic of Kazakhstan. The total amount of the implemented energy projects - 240 MW.



Our construction capabilities



The invariable principle of the MKS® Group of Companies is engineering of turnkey works. MKS® has admission on a wide range of project and construction works and offers the customer the complete and effective solutions. MKS® carries out all types of works: from the site preparation – to construction, commissioning and field service of an object.

- ✓ Buildings and constructions
- ✓ Main step-down substations
- ✓ Gas distribution integrated objects
- ✓ Gas preparation and oil products' receiving units
- ✓ Gas treatment units
- ✓ Complete objects of power distribution
- ✓ Gas-network infrastructure linear objects
- ✓ Power grid infrastructure linear objects
- ✓ Heat distribution network linear objects
- ✓ Fuel gas preparation unit (FGPU)

Modular execution



The **MKS® Group of Companies** offers services in turnkey construction of both fixed-site (in the building) and modular (container) mini-MPPs. The choice of construction technology depends on technical specifications' requirements.

BENEFITS OF THE MODULAR MINI-MPP:

- ✓ **Versatility** Combines benefits of a container (fast installation) and a building (sufficient service zone).
- ✓ **Fast launching** The 4 MW mini-MPP can be constructed and launched in 15 days.
- ✓ **Optimum costs** Modular assembly and advance-prepared modules allow to considerably reduce the project cost.
- ✓ **Mobility** Possibility of expeditious transfer of mini-MPP on a new installation site
- ✓ **Easy capacities' expanding** Modular execution allows to quickly increase the mini-MPP's power via installation of additional modules.
- ✓ **Easy maintenance** Modular execution allows to quickly dismantle the engine for repair.
- ✓ **Easy shipment** Modules are manufactured in the dimensions providing fast and inexpensive shipment.

Modules' production



The **MKS® Group of Companies** produces the modules (containers) turnkey at the own workshop for generating installations of various power:

⚡ **4,5MW**

⚡ **2MW**

⚡ **1,2MW**

⚡ **0,6MW**

Modules are made of extra quality materials which provide a reliable functioning of installations in severe climatic conditions and in the open areas. In low or increased temperature conditions the module maintains the normal temperature conditions that guarantees the MPP's engine start and trouble-free operation of the additional equipment.

In 2018-2019 the **MKS® Group of Companies** was the first in Russia to design the module for the TCG 2032B V16 4,5 MW engine, having started an object with a total power capacity of 18 MW in the Chelyabinsk region. Dimensions of one 4,5 MW module are 18 m x 12 m. The term one module installation does not exceed 20 days.



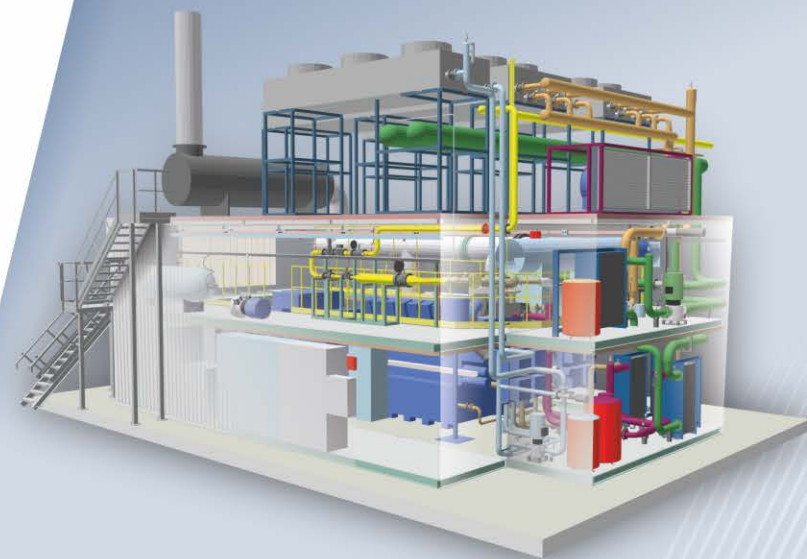
Design engineering



The **MKS® Group of Companies** has its' own project design department with competencies and experience for complex design of the power supplying objects of different degree of complexity.

Distinctive feature of the design department working process is simultaneous work of the team in the **BIM server** which allows to aggregate, select to purpose, calculate, assemble and approve the components and the systems of the future object created by different specialists in the virtual mode.

The program complex allows to carry out **3D - design** of particular units and all object in general, increasing thereby presentation and accuracy of the project documentation accomplishment.



Own workshop



Gas supply
modules



Ventilation modules



Switchboard equipment



Automation control
panels



Smoke exhaust
systems



Cooling modules



Module containers



Heatmechanical
modules



Metalware



Production: switchboard equipment



Since 2008 the **MKS® Group of Companies** started own production of the switchboard equipment, supply and exhaust ventilation systems, modules, including non-standard dimensions for the purpose of quality improvement and project deadlines' reduction. It allowed to build objects according to the individual project decisions concerning any customers' requirements. Experts of the distributed power generation market recognized that today the products under the MKS® brand are among the top best in Russia.

The **MKS® Group of Companies** produces the following

- ✓ Single-end service assembled chamber of 6 (10) kV;
- ✓ Unilateral maintenance switchgears 70 of 0.4 kV;
- ✓ Complete-transformer substations of an outdoor installation of 6 (10) kV;
- ✓ Panels of instrumentation and automated control systems, ACS;
- ✓ Complete outdoor installation cells of 6 (10) kV;
- ✓ Low-voltage complete devices;
- ✓ Complete distributing devices of an outdoor installation



Production: ventilation systems



The MKS[®] Group of Companies carries out design, production, installation, automation and also field service of industrial ventilation systems of any degree of complexity. We use the hi-tech modern equipment in production. Our products conform to the highest requirements of the industry that is confirmed by certificates and licenses for all types of the performed works.

Today it is hard to imagine a modern workshop without an organized air exchange system. Timely air intake, cleaning and effective removal allow to support the necessary conditions for good health of personnel and correct operation of automatic equipment. The MKS[®] Group of Companies performs the ventilation systems' installation conforming all necessary parameters, providing the complete range of ventilating high-quality products.



Production: installations for gas supply systems

Specialists of the MKS® Group of Companies are capable to solve problems in the field of production of installations for gas supply systems of any level of complexity. Our employees are regularly trained which allows to implement difficult technical solutions and to increase the production speed and product quality.

All complex of works is carried out on the basis of technical conditions and certificates of conformity of GOST. The accumulated experience in GSS installation helps us to find necessary constructive solutions taking into account requirements of every customer.

Specialists of the MKS® Group of Companies design, produce, mount and serve the following types of gas equipment:

- ✓ Gas supply modules (units);
- ✓ Natural gas-sweetening plants (cyclones, industrial filters);
- ✓ Natural and associated petroleum gas separators;
- ✓ Gas storage and transportation tanks



Construction



The MKS® Group of Companies has own capital construction department with a considerable experience of the power supplying objects' turnkey construction. MKS® carries out all types of installation and construction works on-site: from site preparation up to the equipment commissioning.

✓ Professionalism

Specialists of capital construction department perform all works in strict accordance with the work execution plan approved with the Customer.

✓ Provision

The department is equipped with tools, consumable materials, individual protection equipment, devices, machines and special equipment, necessary for work.

✓ Safety

Specialists of capital construction department (engineering-technical specialists, working personnel) have the existing protocols and certificates of necessary types of certification in the Ural Department of Federal Environmental, Industrial and Nuclear Supervision Service of Russia.



Mini-MPP turnkey Shop execution



Object:

Mini-MPP (boiler house) turnkey of shop design
with a total electric power capacity 4,5 MW
and thermal power capacity 25,2 MW

Main equipment:

Gas GENSET MWM
TCG2032B V16 (1 unit)
with unit installed electric
power capacity of 4,5 MW;
Hot water boiler units
Thermotechnik TT100 (3 units)
with unit installed thermal
power capacity of 7 MW



Commissioning and field service



Specialists of the MKS® Group of Companies have wide experience of carrying out commissioning of any degree of complexity. The company carries out field service of the power equipment put into operation in various regions of Russia. Thanks to modern maintenance shop, the wide range of spare parts and a high level of qualification of our specialists we ensure reliable and trouble-free functioning of power plants.

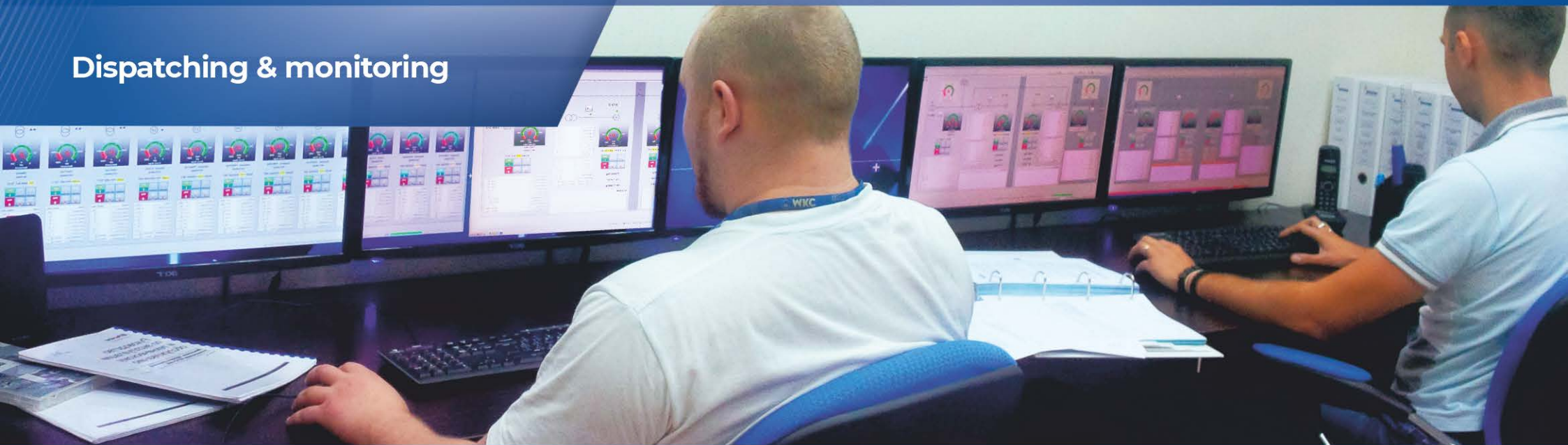
We perform:

- ✓ commissioning
- ✓ diagnostics
- ✓ scheduled & reconstructive maintenance
- ✓ remote monitoring
- ✓ redeveloping
- ✓ SPTA stockage formation
- ✓ consultation of the operating personnel of the customer

Our advantages:

- ✓ Expanded spare parts warehouse
- ✓ Original spare parts for MWM® engines available in a warehouse
- ✓ Modern maintenance shop
- ✓ Time of the service engineer arrival - 3 hours (city territory)
- ✓ Remote dispatching of an object

Dispatching & monitoring



The MKS® Group of Companies is ready to offer the remote dispatching and monitoring services of new or already operating gas genset power plants. In the MKS® headquarters we have an own dispatching point which provides the minimum time of reaction of the operation personnel.

Dispatching point



Remote monitoring

Round-the-clock observation

Operational management

Production base



Warehouse space of 1000 m²

Maintenance shop

Expanded spare parts warehouse

Logistics



Equipment for different tasks

Expeditious departure

Express delivery (avia)

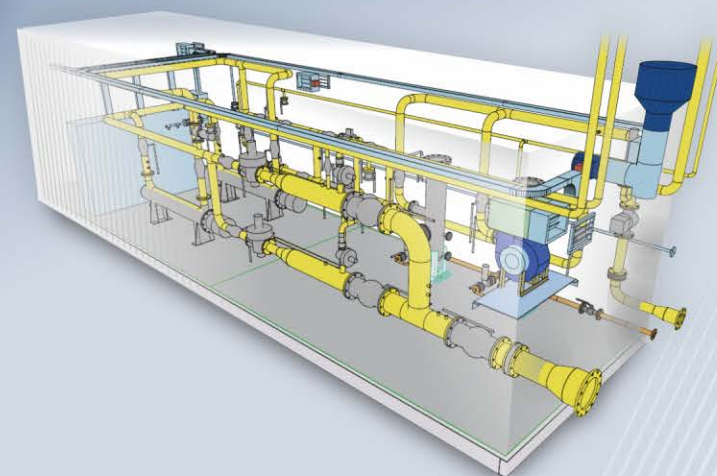
Mini-MPP at APG



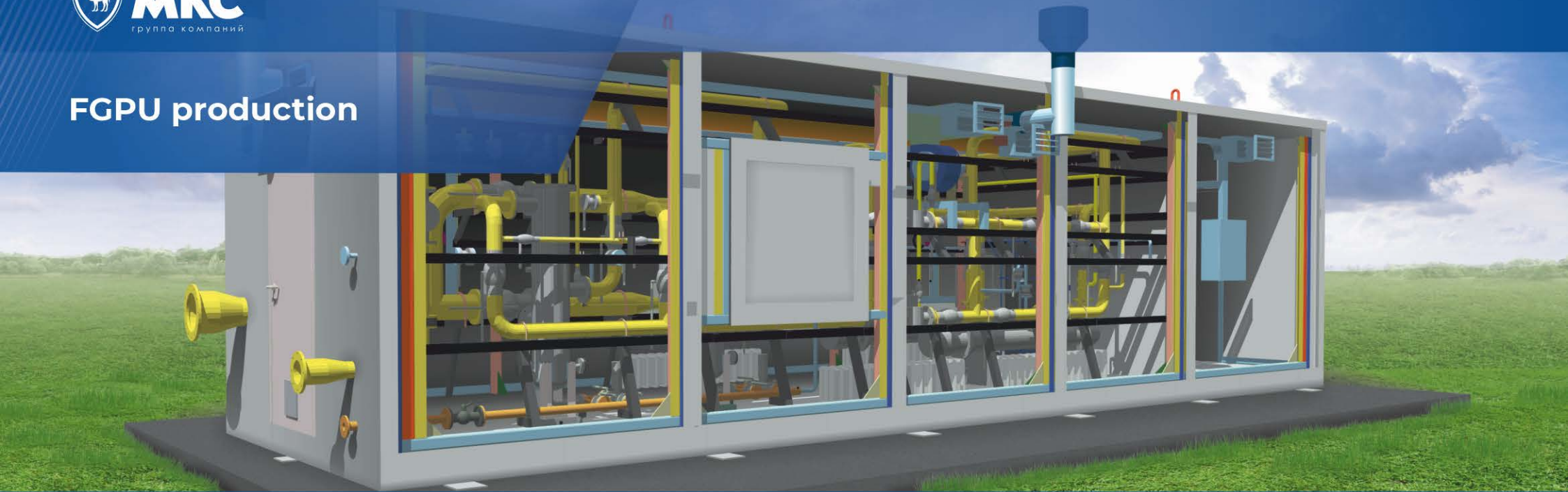
One of the priority directions of the MKS® Group of Companies' works is project implementation on the associated petroleum gas (APG). Specialists of the company are ready to offer complete solutions based on turnkey gas genset units for various compositions of APG. The complex systems of APG preparation designed by the MKS® Group of Companies allow to maintain working capacity and effective operation of the generating equipment even at the serious changes of the APG structure and quality inevitable upon production.

MINI-MPP at APG BENEFITS:

- + cost-effectiveness:** no need for main gas pipelines and also for diesel fuel delivery by vehicles. Fuel gas is produced on-site from APG;
- + self-sufficiency:** own generation at APG makes the oil processing enterprise autonomous in questions of heat and power supply;
- + versatility:** the gas preparation complex provides Mini-MPP with fuel and also allows to receive associated oil products (BFLH, natural gasoline and so forth)

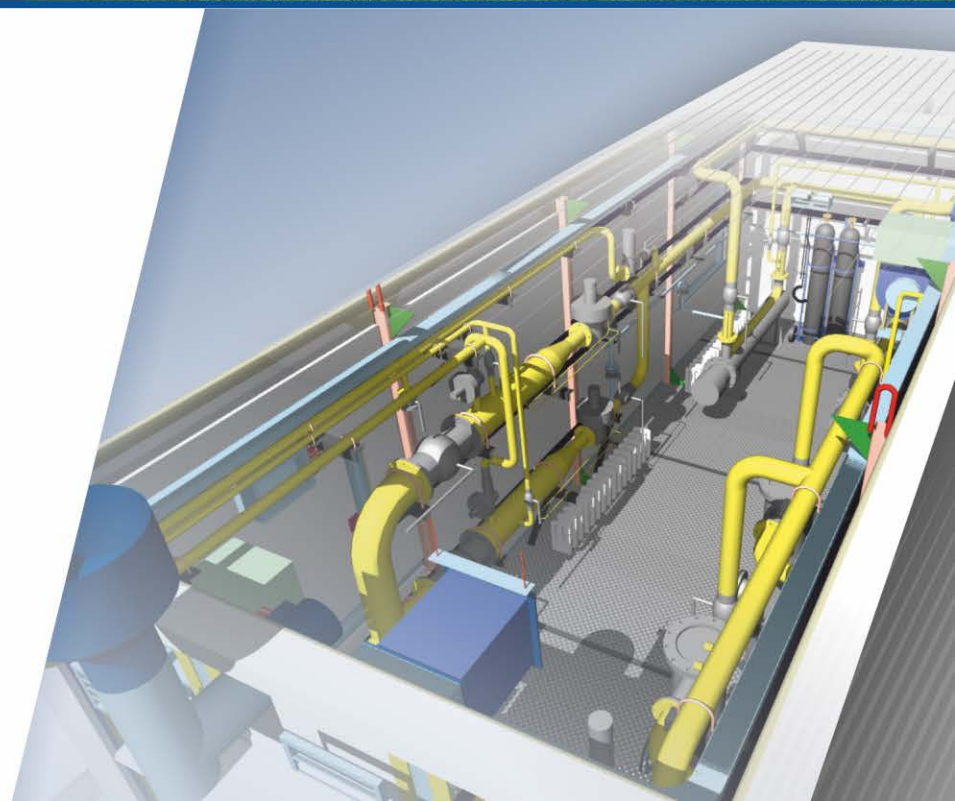


FGPU production



The **MKS® Group of Companies** designs and produces the modular fuel gas preparation units (FGPU) at the own workshop. FGPU are intended for fuel gas production from the associated petroleum gas (APG) with quality, relevant to the requirements imposed to fuel for gas genset power plants concerning the methane index and the heating value.

The modular fuel gas preparation units (FGPU) by the MKS® Group of Companies conform to all technical standards, are notable for their low weight and overall dimensions and also insignificant working costs. FGPU are transportable, reliable, effective, easy-to-work & service.



Renewable power generation

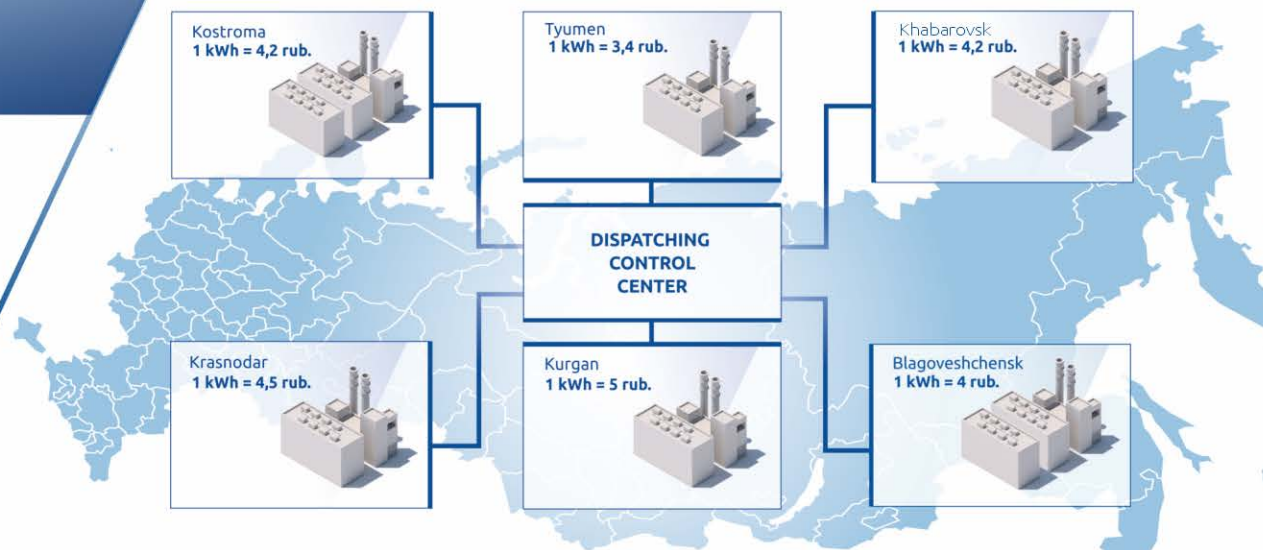


One of the promising directions of the MKS® Group of Companies' activity is alternative power engineering. Alternative power engineering is a possibility of obtaining the energy replacing the traditional sources (oil, natural gas, coal). The MKS® specialists are ready to perform works on alternative power engineering projects implementation turnkey (solar power, wind power, small hydropower, bioenergetics and so forth).

- ✓ project documentation development;
- ✓ innovative equipment and accessories supply;
- ✓ construction, installation and adjusting



Power supply contracts



Another promising activity of the MKS® Group of Companies is implementation of power supply contracts in the form of an agreement of direct delivery of the developed energy resources (electrical and heat energy) and (or) lease agreements of the generating equipment.

The simplest and mutually advantageous form of cooperation is the equipment lease agreement – the equipment is provided in lease, and the cost of lease payments is calculated depending on the electricity (and heat) consumption volume taking into account the current discount price. The equipment lease agreement has a number of advantages:

- ✓ **Mutually advantageous cooperation** The customer begins to gain the economic effect of the energy marketing right after the equipment launching. For the investor the power supply contract is a developing and highly profitable form of business.
- ✓ **Provision** At the moment the total pool of the MKS® investments (own and external) for the purpose of the power supply contracts' implementation makes over 1.62 billion rubles.
- ✓ **Flexibility** The Customer is given the right to choose the further development of the project upon the power supply contract validity period termination.
- ✓ **Scalability** The scheme of the power supply contract allows to increase the capacity of investments and economic effect of the project implementation by means of a single operator.

We are trustworthy



MKS® GROUP OF COMPANIES PARTNERS



MKS® GROUP OF COMPANIES CLIENTS



Team of professionals

Today the **MKS® Group of Companies** unites highly qualified personnel – young specialists and professionals with work experience in the industry over 15 years. Most of employees underwent the certified training at the manufacturing plants of the power equipment in Germany and the Czech Republic. The total number of employees, including the production site and branches, makes 250 persons at the moment.



Design department



Construction department



Production department



Logistics department



Sales department



Service department



MAKSIM A. ZAGORNOV

- ✓ CEO at the MKS® Group of Companies
- ✓ President of the Distributed Power Generation Association
- ✓ "Business Russia" General council member
- ✓ Business ambassador of the "Business Russia" in the UAE
- ✓ Assistant to the First Deputy Chairman of the Committee on power of the State Duma of the Federal Assembly of the Russian Federation
- ✓ Business ombudsman on power and natural monopolies in the Chelyabinsk region



**WE PERFORM ALL TYPES OF WORKS TURNKEY!
LOOKING FORWARD TO COOPERATION!**



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