



IBR™ – International Business Relations, LLC
Business Development through Technology Development

Business Profile

Moscow, Russia
Established in 1991

IBR™ – International Business Relations, LL

Business Development through Technology Development

IBR™ was established in 1991. The company focuses on consulting and engineering in energy generation and chemical industry sectors. IBR™ is the first private Russian company embarking on business in nuclear power engineering and nuclear fuel cycle. The company staff has a great experience and high qualification resting on the previous service background at leading Russian nuclear and chemical research institutes and design bureaus, as well as on the working experience due to project implementation for IBR™ customers.

IBR™ is trusted by a great number of companies worldwide. We are proud of the fact that IBR™ has become a technical advisor on foreign energy and chemical technologies and industries for many Russian companies. Also we appreciate the confidence of our foreign customers who make use of IBR™ products for developing and improving the efficiency of their business in Russia and on a global basis.



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Industrial sectors:

- ✓ Nuclear engineering and nuclear fuel cycle (NFC)
- ✓ Thermal power
- ✓ Energy generation systems making use of renewable energy sources
- ✓ Energy storage and energy transmission systems
- ✓ Chemical industry

IBR Products and Services (1)

Strategic Consulting

- ✓ **Company development strategy generation**
- ✓ **Market analysis and forecast, inclusive of price indices dynamics**
- ✓ **Risks analysis and management**
- ✓ **Benchmarking**
- ✓ **Development and optimization of the company resource procurement system**
- ✓ **Development and optimization of the company capacity building program**
- ✓ **Development of sales programs for finished equipment and services**
- ✓ **Development of consulting IT-systems**

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IBR Products and Services (2)

Technical Consulting & Advisory Services:

- ✓ Technical analysis of a client's project and making recommendations on advisability of its updating or new construction
- ✓ Development of a detailed design and a project plan for updating a facility
- ✓ Technical analysis of the world best practices (for operating facilities)
- ✓ Technical analysis of facilities under development and designing
- ✓ Long-term Technological Foresight
- ✓ Development of engineering data for technical safety substantiation of a facility
- ✓ Development of engineering data for the facility Environmental Impact Assessment

Technical consulting objects:

- ✓ Technology
- ✓ Installation
- ✓ Plant

IBR Products and Services (3)

Economic & Investment Consulting

- ✓ Economic and investment analysis of a client's project based on the technical recommendations made as regards advisability of the project updating or new construction
- ✓ Economic and investment analysis of the world best practices (for operating facilities)
- ✓ Economic and investment analysis of facilities under development and designing
- ✓ Economic and investment analysis of promising technologies
- ✓ Economic appraisal of a facility

Technical consulting objects:

- ✓ Technology
- ✓ Installation
- ✓ Plant

IBR Products and Services (4)

Engineering

- ✓ Development and justification of engineering and design approaches
- ✓ Development of patterns for simulation of complex dynamic chemical process systems

Engineering objects:

- ✓ Technology
- ✓ Installation
- ✓ Plant

IBR Products and Services (5)

Project Management

- ✓Project Development
- ✓Project Planning & Design
- ✓Project Execution
- ✓Project Monitoring & Control
- ✓Management of finished equipment and services sales programs

Nuclear engineering and nuclear fuel cycle (1)

Due to exhaustibility of fossil fuel resources and adverse environmental impact of “thermal” electric energy generation, nuclear engineering in foreseeable future will remain one of the most important sources of global electric energy generation. Most of nuclear energy development forecasts suggest that installed capacity of NPP by year 2030 will increase approximately by 50%.

Reliability, safety and economic efficiency are the main requirements to nuclear energy systems (NPP). The best indices in terms of reliability, safety and economic efficiency of reactor systems are attained by employment of optimal technical and economic solutions at all stages of NPP life cycle, i.e. designing, construction, commissioning, operation and decommissioning.

Reliable supplies and nuclear fuel cycle cost (procurement of fresh fuel to NPP and spent fuel / radioactive waste handling) can be mentioned among the most important parameters governing reliability of operation and economic efficiency of nuclear energy systems (NPP).

Nuclear engineering and nuclear fuel cycle (2)

Use of IBR Products and Services permits a customer to:

- ✓ **Substantiate, approve and implement the optimal strategic solutions concerning the company development**
- ✓ **Optimize the choice and successfully license new nuclear energy systems (NPP) and nuclear fuel cycle facilities**
- ✓ **Improve reliability, safety and economic efficiency of the already operating nuclear energy systems based on analysis and implementation of the world best operation practices**
- ✓ **Introduce the world best process, design and engineering approaches when designing and engineering new or updating the existing nuclear energy systems and nuclear fuel cycle facilities**
- ✓ **Optimize supplies of state-of-the-art equipment and procurement of resources for nuclear energy systems (NPP), both under construction and in operation, and nuclear fuel cycle facilities, including nuclear fuel supplies, SNF and RW handling**

Thermal power (1)

As before thermal power remains the dominating technology of electric power generation globally. The share of thermal electric energy generation below 50% of total generation is characteristic just of few countries. Generally, the absolute amounts of electric energy generation by thermal power plants will increase in foreseeable future for 20-30 years worldwide.

The requirements of improving the efficiency and environmental friendliness of thermal generation are the determining ones in decision-making about new construction or updating of thermal power systems (TPS).

Thermal power (2)

Use of the IBR Products and Services permits a customer to:

- ✓ Justify, accept and implement the optimal strategic solutions concerning the company development
- ✓ Optimize the choice and to successfully license new thermal power systems (TPS) and facilities for handling the waste formed due to generation
- ✓ Optimize and successfully license projects aimed at updating thermal power systems and facilities for handling the waste formed due to generation
- ✓ Improve reliability and efficiency of the already operating thermal power systems (TPS) based on analysis and implementation of the world best operation practices
- ✓ Introduce the world best technological, engineering and design approaches into new project development or into updating the existing thermal power systems
- ✓ Optimize supplies of modern equipment and procurement with resources of thermal power systems (TPS) under construction and in service

Systems of energy generation based on renewable energy sources (1)

Use of renewable energy sources (solar, wind, bioenergy, etc.) is a vital trend in electric generation in some countries (European ones above all). The use of renewable energy sources is becoming increasingly popular and economically attractive in many countries, which stems from advance of generation technologies combined with state support of resorting to renewable energy sources. Accordingly, in 2013 in Germany the share of electric energy generation making use of renewable energy sources amounted to 23% of total electric generation.

It is contemplated that advance of generation technologies, as well as state support to renewable energy sources, will entail sustainable growth of the systems installed capacity in foreseeable future (20-30 years).

**Systems of energy generation based on
renewable energy sources (2)**

Use of the IBR Products and Services permits a customer to:

- ✓ Justify, accept and implement the optimal strategic solutions concerning the company development
- ✓ Optimize the choice and successfully license new systems of energy generation using renewable energy sources
- ✓ Improve reliability and efficiency of the already operating energy generation systems based on analysis and implementation of the world best operation practices
- ✓ Introduce the world best technological, engineering and design approaches into new project development or into updating the existing energy generation using renewable energy sources
- ✓ Optimize supplies of modern equipment and procurement with resources of energy generation using renewable energy sources under construction and in service

Chemical industry (1)

Throughout recent decade the main growth of chemical industry worldwide occurred in developing countries, China and Middle East countries, first of all. Highly developed countries actively switched to technology-intensive products along with transfer of processes yielding simple chemical products to foreign countries. Russia has found itself in a situation when prices for energy carriers, source materials and manpower restrict the development of the Russian chemical industry in line with the Middle East – Chinese scenario, whereas a relatively low development level of chemical technologies and high cost of credits do not permit development in line with the European trend.

Nonetheless, chemical industry remains one of the world leaders, both in terms of earned value and development outlooks. Updating of the existing and setup of new chemical processes, development of technologies for chemical industry and manufacture of equipment for chemical processes are among the most promising and profitable focus areas in business.

Chemical industry (2)

Use of the IBR Products and Services permits a customer to:

- ✓ Justify, accept and implement the optimal strategic solutions concerning the company development
- ✓ Optimize the choice and successfully license new chemical process equipment, chemical and technological systems
- ✓ Update the operating chemical process equipment, chemical and technological systems
- ✓ Improve reliability, safety and efficiency of the operating chemical process equipment, chemical and technological systems
- ✓ Introduce the world best technological, engineering and design approaches into designing and engineering of new chemical process equipment, chemical and technological systems
- ✓ Optimize supplies of modern chemical process equipment, chemical and technological systems

IBR is your responsible partner in the development and implementation of today's technical and economic decisions

Contacts

**Russia, 117628 Moscow,
Starokachalovskaya street, 18-24**

Tel. +7 (499) 613 87 18 / 06 88

Fax: +7 (499) 613 14 33

E-mail: office@ibr.ru

www.ibr.ru