SOUTHERN CORRIDOR

Expanding Unified Gas Supply System to secure natural gas supply to South Stream gas pipeline
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About Southern Corridor project

Expanding Unified Gas Supply System (UGSS) of Russia


The UGSS of Russia expansion (construction of the Southern Corridor gas pipeline system) is OAO Gazprom’s large-scale project that will help supply additional natural gas volumes to central and southern regions of Russia in order to develop the industrial, agricultural and utility sectors as well as improve the living conditions.

The Southern Corridor gas pipeline system will run across eight Russian regions and will consist of two elements: the Western route and the Eastern route.

Phase 1 of the project stipulates construction of the Western route that will cross the Voronezh and Rostov Regions and the Krasnodar Territory.

The Eastern route will be built within Phase 2. It will pass through the Nizhny Novgorod Region, the Republic of Mordovia, the Penza, Saratov and Volgograd Regions and will be connected to the Western route in the Rostov Region and the Krasnodar Territory.

63 bln m³/year
Southern Corridor gas pipeline system throughput

1516 MW
Total design capacity of ten compressor stations (CS)

2506.2 km
Total projected length of the route
Geographic area of construction

Southern Corridor project facilities

The Southern Corridor gas pipeline system will considerably increase the pace of socio-economic development, create new industrial facilities and new workplaces and reinforce the energy potential in Russian regions.

Voronezh Region – the Cradleland of Russian Navy
Capital of the Black Earth Belt.
- Pisarevka CS, 47 km of the gas pipeline.

Nizhny Novgorod Region – the Purse of Russia
Center of folk arts and crafts.
- Pochinki CS, 41 km of gas pipeline.

Rostov Region – the Lower Don
Center of Russia’s motor vehicles and agricultural machinery production.
- Shakhtinskaya CS, 393 km of the gas pipeline.
- Salskaya CS, 253 km of the gas pipeline.

Republic of Mordovia – the Land of Craftsmen
Region with one of the most multinational population in Russia.
- Pochinki CS, 41 km of gas pipeline.
- KCS  Pisarevka CS, 47 km of the gas pipeline.

Krasnodar Territory – the Granary of Russia
Russia’s largest resort center.
- Korenovskaya CS, Kazachya CS, Russkaya CS, Kubanskaya CS.
- Linear facilities – Western (383.6 km) and Eastern (394.6 km) routes.

Penza Region – the Sura Area
Sole region where medical implants (artificial hearts) are produced.
- Mokshanskaya CS, 208 km of the gas pipeline.

Rostov Region – the Lower Don
Region with one of the most multinational population in Russia.
- Pochinki CS, 41 km of gas pipeline.
- KCS  Pisarevka CS, 47 km of the gas pipeline.

Saratov Region – the Wheaten Land
Region that includes 3 natural and climatic zones: forest steppe, steppe and semidesert.
- Petrovsk CS, 172 km of the gas pipeline.

Volgograd Region – the Military Glory of Russia
Shipping center of Russia.
- Zhirnovskaya CS, Volgogradskaya CS, 485 km of the gas pipeline.
### Western route

#### Construction Phase 1

**574 MW**
Total design capacity of compressor stations

**880.6 km**
Total length of gas pipelines, (700-1,400 mm pipes), including Kubanskaya - Korenovskaya CS interconnector

**57 km**
Kubanskaya - Korenovskaya CS interconnector, (700 mm pipes)

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<tr>
<th>Compressor stations</th>
<th>Equipment / Units</th>
<th>Capacity, MW</th>
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<tr>
<td>Pisarevka</td>
<td>GCU-C6.3 / 6, GCU-10-4 / 8, GCU-16 / 7*</td>
<td>229.8</td>
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<tr>
<td>Shakhtinskaya</td>
<td>GCU-25 / 5</td>
<td>125</td>
</tr>
<tr>
<td>Korenovskaya</td>
<td>GCU-25 / 5</td>
<td>125</td>
</tr>
<tr>
<td>Kazachya</td>
<td>GCU-25 / 4</td>
<td>100</td>
</tr>
<tr>
<td>Russkaya</td>
<td>GCU-32 / 7</td>
<td>224</td>
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</tbody>
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* After retrofitting Pisarevka CS.
**Eastern route**

**Construction Phase 2**

**942 MW**
Total design capacity of compressor stations

**1625,6 km**
Total length of gas pipelines, large-diameter pipes (800 - 1,400 mm)

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<thead>
<tr>
<th>Compressor stations</th>
<th>Equipment / Units</th>
<th>Capacity, MW</th>
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</thead>
<tbody>
<tr>
<td>Pochinki</td>
<td>GCU-16 / 6</td>
<td>96</td>
</tr>
<tr>
<td>Mokshanskaya</td>
<td>GCU-25 / 6</td>
<td>150</td>
</tr>
<tr>
<td>Petrovskaya</td>
<td>GCU-16 / 5</td>
<td>80</td>
</tr>
<tr>
<td>Zhimovskaya</td>
<td>GCU-16 / 4</td>
<td>64</td>
</tr>
<tr>
<td>Volgogradskaya</td>
<td>GCU-16 / 4</td>
<td>64</td>
</tr>
<tr>
<td>Salskaya</td>
<td>GCU-16 / 4</td>
<td>64</td>
</tr>
<tr>
<td>Korenovskaya</td>
<td>GCU-25 / 4</td>
<td>100 / 225*</td>
</tr>
<tr>
<td>Kazachya</td>
<td>GCU-25 / 4</td>
<td>100 / 200*</td>
</tr>
<tr>
<td>Russkaya</td>
<td>GCU-32 / 7</td>
<td>224 / 448*</td>
</tr>
</tbody>
</table>

* Capacity at connection between the Eastern and the Western routes.
Main facility of Southern Corridor system

Kazachya compressor station

The Kazachya compressor station is located in the Krasnodar Territory and is a crucial facility incorporated into the Southern Corridor gas pipeline system.

Natural gas is treated there prior its shipment to Europe and afterwards is conveyed to the Russkaya CS and, finally, to the South Stream system.

**Technical Specifications**

- **Gas discharge pressure**: 28.45 MPa
- **Compressor station capacity**: 63 bln m³/year
- **Total capacity**: 448 MW

- **Gas discharge pressure**: 11.8 MPa
- **Compressor station capacity**: 63 bln m³/year
- **Total capacity**: 200 MW
Reliability and security

Ensuring safe operation of Southern Corridor system

OAO Gazprom gives particular attention to the construction safety and operational reliability while designing and constructing such complicated systems as Southern Corridor.

OAO Gazprom pursues the following rules of construction:

- Monitoring closely every construction stage.
- Using cutting-edge equipment.
- Cooperating closely with supervisory bodies.
- Constructing gas trunklines away from residential areas.
- Giving priority to construction of underground gas trunklines.
- Giving priority to the directional drilling technology to avoid stripping of fertile soils and misbalancing of the local ecosystem.
- Specialized maintenance companies ensure operational reliability.
- Clearing the area from explosive objects.
- Implying the unique natural disaster protection system.
Environmental activities

Principles of OAO Gazprom environmental policy

The major principles of OAO Gazprom environmental policy are preserving and protecting the environment and rational management of natural resources. The Company adopted the OAO Gazprom Comprehensive Environmental Program for 2011–2015 with a view to preserve a healthy environment and follow the environmentally friendly development.

In 2011 the Gazprom Environmental Management System was certified for compliance with the requirements of the ISO 14001:2004 international standard. All design, technological, engineering and construction solutions are introduced with regard to natural and climatic as well as geological conditions of the area.

• Strict compliance with the environmental legislation of the Russian Federation.
• Conducting all necessary approval procedures (public hearings, ecological expertise).
• Cooperating closely with environmental and ecological organizations.
• Mitigating negative environmental impact during facilities construction.
• Including items on environmental protection into Cooperation Agreements between Gazprom and local authorities

Gazprom Group annually increases funds for environmental protection. In 2011 the Company allocated RUB 24.607 bln for this purpose, a 20 % rise versus 2010.
Duty to remember

Exploration activities

The World War II ended more than 65 years ago, but until now Russian soil keeps a memory of the epic events of the past. Quite often gas pipelines are laid in the areas of fierce battlefields.

Gazprom Group’s enterprises explore every inch of the ground with meticulous care trying to preserve memories of heroism of Soviet soldiers who defended their Motherland. The area is cleared from explosive objects before the facilities construction. A search of unknown soldiers to restore and perpetuate their names is ongoing.

A group of explorers managed to know the names of heroic dead during the construction of the Western route of Southern Corridor (the Voronezh and Rostov Regions, the Krasnodar Territory). The soldiers’ personal belongings were passed to the family members, and the soldiers themselves were buried with honor.

Over 150 artillery projectiles, mortar shells and grenades have been disposed during the operations. Currently, the operations are underway in the Eastern route of the Southern Corridor gas pipeline system.

A search is ongoing.
Our history

Archeological excavations

The works on land arrangement for facilities construction in the Western route of Southern Corridor included archeological excavations. Artifacts were discovered and examined by experts in the Voronezh and Rostov Regions and the Krasnodar Territory:

- The Yamna culture of the early Bronze Age (about III thousand years B.C.).
- The Catacomb culture of the middle Bronze Age (about III thousand years B.C.).
- The Srubna culture of the late Bronze Age (mid of II thousand years B.C.).

These finds will allow researchers to better interpret the processes that were occurring at the Russia’s South that time.

Besides, Khazars’ medieval cultural heritage of the 9–10th centuries was examined during archeological works that may turn to be the milestone in studying the Russian South ancient history.

Presently exploration works along the Eastern route of Southern Corridor are in progress in the Nizhny Novgorod Region, the Republic of Mordovia, the Penza, Saratov and Volgograd Regions.
Project participants

Construction investor

**OAO Gazprom**

A global energy company. The core activities are geological exploration, production, transmission, storage, treatment and marketing of gas, condensate and oil, as well as production and marketing of electric and thermal power.

Construction customer

**OOO Piter Gaz**

An engineering company focused on design & survey and management of building offshore and onshore production and transmission facilities for the petroleum industry.
Southern Corridor

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