An expanded asset base

SUEK’s operations in Russia extend from West to East across 11 regions. Our efficient coal mines and washing plants, with access to our own railcars and ports in the West and East of Russia, ensure we deliver quality products on time to our customers in the Russian, Asia-Pacific and Atlantic markets. Meanwhile, our efficient energy assets, fuelled by local coals, enable SUEK to be a leading heat and power producer in Siberia.

In the Kemerovo region, SUEK mines high-quality low-sulphur hard coal from underground and open-pit mines located in the Kuznetsk basin (Kuzbass).

To decrease ash content, we treat the mined coal at four washing plants. Products with calorific values of 5,800-6,100 kcal/kg are predominantly supplied to energy companies in Europe and Asia. High-quality washed coal from the Kirov mine and plant is supplied to metallurgical coal markets in Asia and Russia. Meanwhile, coal with a calorific value of 5,000-5,700 kcal/kg is mainly required by Russian power-generation companies and used at our own generating facilities.
In the Kemerovo region, SUEK generates heat and electricity at three CHPPs, three GRESs and one GCHPP with a total installed electric capacity of 4,155 MW and heating capacity of 5,051 Gcal/h, supplying heat to over 1.2 million people.

**Development projects**

Our main coal development projects relate to increasing the production efficiency at our existing mines and developing new high-quality coal sites, including:

- construction of the November 7th New mine with a capacity of 3.4 Mt per year, to be launched in 2020
- increasing the capacity at the Ruban mine to 5 Mt per year
- increasing the length of longwalls at the Kirov and Polysaevskaya mines to 350 metres and beyond

In the Kemerovo region, where 1.3 GW of new generating capacities were introduced as part of the DPM programmes, our current energy asset development projects are focused on equipment upgrades and environmental measures:

- further upgrading of equipment at Tom-Usinskaya GRES, significantly upgraded in the framework of the DPM
- reconstruction of ash dumps at the Kuznetskaya CHPP and Kemerovskaya GRES
- upgrade of the electric precipitators of the boiler unit at Kemerovskaya GRES
- completion of the modernisation of the Novo-Kemerovo CHPP in connection with the transfer to combustion of D grade coal, which resulted in a reduction in nitrogen oxide (NOx) emissions by 1.5 times
In the Altai region, SUEK operates energy facilities including three CHPPs and one thermal station with a total installed electric capacity of 720 MW and heating capacity of 2,864 Gcal/h, supplying heat and electricity to the cities of Barnaul, Rubtsovsk and Biysk, which have a total population of about 1 million people.

**Development projects**

- Modernisation of the Barnaulskaya CHPP-3
- Reconstruction of the Southern Thermal Station in Rubtsovsk
- Reconstruction of an electro-precipitator at the Biyskaya CHPP
- Reconstruction of the heating mains

**Generating facilities**

- Barnaulskaya CHPP-2
- Barnaulskaya CHPP-3
- Biyskaya CHPP
- Southern Thermal Station (Rubtsovsk)

**Heat distribution**

- 3 heat distribution companies

**Coal assets**

- 29.6 Mt
  - Coal production in 2018 (brown coal)

**Energy assets**

- 5.8 TWh
  - Electricity generation in 2018

- 7.9 M Gcal
  - Heat generation in 2018

- 9.9 TWh
  - Electricity generation in 2018

- 12.2 M Gcal
  - Heat generation in 2018
In the Krasnoyarsk region SUEK extracts brown coal from three open-pit mines in the Kansk-Achinsk basin. This coal is principally supplied to our own power generating plants, other heat and power stations and public utilities within the region.

We achieve here the lowest stripping ratio among all of SUEK’s production units. High operational efficiency is due to loading coal directly into railcars or onto conveyor belts by the excavators.

Our generating assets in the region include five CHPPs and one GRES with a total installed electric capacity of 2,581 MW and heating capacity of 5,189 Gcal/h, delivering heat and electricity to the cities of Krasnoyarsk, Kansk, Nazarovo and Minusinsk with a total population of over 1.2 million people.

**Development projects**

In the coal business, our development projects are focused on increasing capacity and measures to improve environmental performance:

- Increase the capacity of Borodinsky to 26 Mt per year by 2020 through the refurbishment and modernisation of equipment as well as the development of adjacent railway facilities.
- Construction of a plant at the Berezovsky open-pit to produce briquettes from coke breeze with reduced iron content for ferroalloys and silicon industries.

In the energy business, our development projects relate to the upgrading of Krasnoyarskaya CHPP-3 and the upgrade of boiler plants.

**Coal mines**
- Berezovskiy open-pit mine
- Borodinsky open-pit mine
- Nazarovskiy open-pit mine

**Processing facilities**
- 2 coal-sizing facilities

**Transport facilities**
- Borodinsky production and transport department

**Generating facilities**
- Kanskaya CHPP
- Krasnoyarskaya CHPP-1
- Krasnoyarskaya CHPP-2
- Krasnoyarskaya CHPP-3
- Minusinskaya CHPP
- Nazarovskaya GRES

**Heat distribution**
- 4 heat distribution companies
In the Novosibirsk region, SUEK operates five CHPPs with a total installed electric capacity of 2,523 MW and heating capacity of 11,605 Gcal/h, providing the cities of Novosibirsk and Kuibyshev (total population of over 1.6 million people) with heat and electricity.

**Development projects**
At the generation facilities, the key investment projects are focused on upgrading equipment at most stations, the reconstruction of heating networks and increasing the efficiency of automatic control, including:

- Upgrade frequency-dividing automation at Novosibirskaya CHPP-4
- Creation of an automated process control and accounting system at the control points of the heating system
- Replacement of inefficient boiler plants

**Generating facilities**
Barabinskaya CHPP
Novosibirskaya CHPP-2
Novosibirskaya CHPP-3
Novosibirskaya CHPP-4
Novosibirskaya CHPP-5

**Heat distribution**
2 heat distribution companies
Our open-pit mines in the Minusinsk basin in Khakassia produce premium hard thermal coal with a high calorific value. We export more than half of the coal from this region (including deliveries of premium sized thermal coal) to Europe and Asia.

An integral part of the company’s strategy is to increase sales of washed, sized coal with a calorific value of 5,500-5,700 kcal/kg from Khakassia to the Atlantic market, where it is sold at a premium compared to un-sized thermal coal. Our largest Russian customers are power plants and coal-distribution companies supplying households and public utilities and we also use this coal at our own generating facilities.

In Khakassia, SUEK also runs a co-generation power plant with a total installed electric capacity of 406 MW and heating capacity of 700 Gcal/h, which is the main supplier of heat and electricity for more than 250,000 people.

**Development projects**
In the coal facilities, our development projects aim to increase the production of high-quality coals:
- increasing mining capacity at Vostochno-Beisky to 5 Mt and installing a new washing plant by 2021
- increasing mining capacity at the Abakansky mine to 1 Mt from 2019

In the energy sector, where the Abakanskaya CHPP is being modernised as part of the DPM programmes, current development projects include the modernisation of the main heating network and fire extinguishing systems.

**Coal mines**
- Abakansky open-pit mine
- Chernogorsky open-pit mine
- Izykhsky open-pit mine
- Vostochno-Beisky open-pit mine

**Processing facilities**
- Chernogorsky WP
- 2 coal-sizing facilities

**Transport facilities**
- Promtrans

**Generating facilities**
- Abakanskaya CHPP

**Heat distribution**
- 1 heat distribution company
In Tyva SUEK operates one CHPP with an installed electric capacity of 17 MW and heating capacity of 653 Gcal/h, supplying heat and electricity to the towns of Kyzyl and Kaa-Khem with a population of over 100,000 people, in addition to social infrastructure facilities, educational and healthcare facilities, industrial enterprises and other consumers.

Development projects
The key investment project at the Kyzylskaya CHP is the technical re-equipping of the heating plant by 2019.

Generating facilities
Kyzylskaya CHPP

Heat distribution
1 heat distribution company
We extract high-quality low-sulphur and low-nitrogen hard coal at the Tugnuisky and Nikolsky open-pit mines, located in Buryatia and Zabaikalye. Coal from the mines is washed at the Tugnuisky washing plant to reduce ash content from 24%-28% to 14% and increase calorific value from 4,600 kcal/kg to 5,650-5,850 kcal/kg.

Most of this coal is exported to the Asia-Pacific market. The low-nitrogen hard coal extracted at Tugnuisky and Nikolsky meets the requirements of Japanese power utilities. Some coal is delivered directly to China by rail across the Russian-Chinese border. The remaining coal is sold to Russian power plants and utilities.

Development projects

Our key investment projects in the region are:
- increase in the total capacity of the Tugnuisky and Nikolsky mines up to 15 Mt per year
- construction of a new module with a capacity of 1,000 tonnes / hour, which will expand washed coal output in Buryatia to 10 Mt per year enabling a 50% increase in deliveries from the region to premium Asian markets by 2021

Coal mines
- Nikolsky open-pit mine
- Tugnuisky open-pit mine

Processing facilities
- Tugnuisky WP
  - 1 coal-sizing facility

Transport facilities
- Tugnuisky Production and Transport Department
In Zabaikalye, the Kharanorsky and Vostochny open-pit mines produce brown coal, which is supplied predominantly to local Russian power stations. Apsatsky coking coal deposit, located 40 km from the Baikal-Amur Mainline railway, extracts high-quality, mid-volatile hard coal which is in high demand in Asian markets and in Russian metallurgical markets.

**Development projects**

Our main project in Zabaikalye region relates to increasing the capacity of the Kharanorsky mine to 4 Mt by 2019.

- **Coal mines**
  - Apsatsky open-pit mine
  - Kharanorsky open-pit mine
  - Vostochny open-pit mine

- **Processing facilities**
  - 2 coal-sizing facilities

- **Coal assets**

<table>
<thead>
<tr>
<th>Type</th>
<th>2018 (HARD COAL)</th>
<th>2018 (BROWN COAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal production</td>
<td>0.6 Mt</td>
<td>5.4 Mt</td>
</tr>
<tr>
<td>Transshipment</td>
<td></td>
<td>20 Mt</td>
</tr>
</tbody>
</table>
The company’s key mining operations in Khabarovsk region are located at the Urgal deposit in the Bureinsky basin. The proximity of Khabarovsk’s assets to our Vanino Bulk Terminal represents a significant strategic advantage.

One underground mine and two open-pit mines produce low-sulphur and low-nitrogen hard coal. This coal is washed at the Chegdomyn washing plant and a processing facility, which increases its calorific value from 4,300 kcal/kg to 5,850 kcal/kg. Coal from this region is mainly transported to our nearby Vanino Bulk Terminal and shipped to the Asia-Pacific market, as well as to Russian power-generation customers in the Khabarovsk and Primorye regions. Due to its strategic location, and the high calorific value of its hard coal, the company invests significantly in the mining, washing and transshipment capacity of the region. It also invests in its environmental safety.

The Vanino Bulk Terminal is a crucial export gateway from Russia to the Asia-Pacific market. It provides the shortest route from our production facilities (with direct access to the Trans-Siberian Railway and Baikal-Amur Mainline) to customers in Japan, South Korea, China and Taiwan.

**Development projects**

Due to its strategic location, and the high calorific value of its hard coal, the company invests significantly in the mining, washing and transshipment capacity of the region. It also invests in its environmental safety.

Our main development projects:

- increasing the capacity of the Pravoberezhny mine to 3 Mt by 2020
- increasing the capacity of the Vanino Bulk Terminal to 40 Mt by 2024, including continued environmental initiatives

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**Coal mines**

- Bureinsky open-pit mine
- Pravoberezhny open-pit mine
- Severnaya underground mine

**Processing facilities**

- Chegdomyn WP
- Processing facility at Bureinsky open-pit mine

**Transport facilities**

Vanino Bulk Terminal
SUEK’s principal mines are located in the Pavlovsky brown-coal basin and the Lipovetsky hard-coal deposit near Russia’s eastern coast, which generates significant savings on transportation costs when supplying coal to Asia-Pacific markets.

In Primorye, SUEK ships coal through Maly Port, where the Group is a major shareholder (with a 49.9% share). In 2018, we shipped 2.5 Mt through Maly Port to Asia-Pacific customers, mainly in Japan, the Philippines, South Korea and Taiwan.

**Development projects**
Our main development project relates to increasing the Maly Port capacity to 4 Mt by 2020, including through berth reconstruction and dredging.
In North-Western Russia, SUEK ships coal through its own Murmansk Commercial Seaport. The port provides access to the ports of Western Europe, the Mediterranean and the East coast of the US.

**Development projects**
SUEK is running a large-scale environmental programme at the port, which includes the construction of dust screens to minimise the negative impact of coal dust.
Railway transport is crucial to the coal production and distribution chain. SUEK operates one of the largest private railcar fleets in Russia.

We also run about 190 locomotives and have 16 dedicated loading stations. Our rail system provides efficient connections between the national rail network and the company’s mines and port facilities, and provides one of the best performances in the country. In 2018, SUEK’s coal constituted 23.3% of the total coal cargo conveyed on Russian railways, which are operated by the state monopoly Russian Railways.

In 2018, the company increased its fleet of higher-capacity railcars under management by 40%. Direct investments in the expansion of the car fleet amounted to about $34m in 2018.

Coal sales network in Russia
In the Russian market, SUEK sells coal to large industrial companies, key energy providers and smaller customers through our commercial network of local offices across different regions.

Heat sales network in Russia
Our coal-fired thermal power plants are among the most efficient producers on both the electric and thermal energy markets. The company’s sales network supplies heat and electricity to over five million people in five regions and hundreds of thousands of Russian companies, being the only heat supply organisation in 87% of the regions where we operate.

1. Russian Railways statistics.
SUEK’s international operations mainly include financial, sales, trading and distribution activities.

SUEK is active in the international debt capital markets and coordinates its financing activities through SUEK Ltd (Cyprus).

International sales and distribution network

- China
- Indonesia
- Japan
- Lithuania
- Poland
- South Korea
- Spain
- Switzerland
- Taiwan
- USA
- Vietnam

International coal trading and sales are conducted by SUEK AG (based in Switzerland), whose main role is to maximise the efficiency of coal sales and secure the company’s position in the international market. We achieve sales goals through our own network of branch and representation offices and subsidiaries registered in jurisdictions of strategic importance, such as Poland, China, Japan, Taiwan, South Korea, Indonesia, Lithuania, Spain and the US.

In 2018 we continued to expand our presence in Poland through the development and improvement of existing local distributor networks. Thus we consolidated Barter Coal, which enabled us to increase transparency of warehouse operations through introduction of the Group’s standards and policies there, as well as an SAP ERP system.

Our marketing structure allows SUEK AG to conduct its sales and resource procurement in local currency, arrange delivery directly to end users’ sites, and provide corresponding services to customers. SUEK AG continually analyses the international coal market and gathers information that influences the balance of supply and demand. In particular, it looks at information related to the deployment of new power-generating capacities, changes in coal production and export, and the dynamics of logistics capacity.