International coal market

In 2018, global seaborne thermal coal trade exceeded 970 Mt, which represents an increment of over 50 Mt vs. the previous year, the biggest increment since 2013. Increased demand from Asian countries compensated for reduced European appetite. Meanwhile, strong demand from premium markets in Asia supported the FOB Australian price for 6,000 kcal/kg material which widened the spread against lower-coal grades during most of the year.

ASIA-PACIFIC MARKET

In 2018, demand from the Asia-Pacif market for thermal coal imports rose 8% year-on-year to 803 Mt. A number of factors contributed to this growth.

Total demand from Japan, South Korea and Taiwan increased by 2% to 293 Mt in 2018. This growth was led by South Korea, which was ramping up coal units commissioned in 2017. Although growth in total demand from this region was modest, Russian coal imports by these three countries grew 17% year-on-year, to 43 Mt. This reflects a few positive factors: in Japan, buyers started to diversify their coal sourcing portfolio due to the liberalisation of the power market; in South Korea, new limitations on coal sulphur content led to increasing demand for coal from Russia; in Taiwan, overall coal consumption has been boosted by a political stance against nuclear generation.

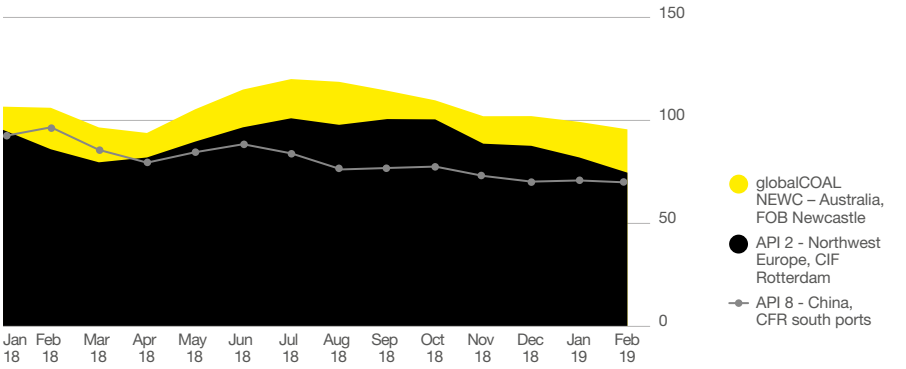
In mainland China, coal imports during the first months of the year were boosted by a colder than average 2017/2018 winter combined with low stocks at coastal power plants and insufficient gas supplies, while domestic coal production remained flat, with growth restrained by government-driven safety checks. Government restrictions aimed at containing imports triggered increased seaborne demand from buyers struggling to meet the elevated electricity demand due to earlier than usual hot weather.

In the second half of the year, improving Chinese production and a milder start to the winter season resulted in weaker end of year imports and slackening lower-CV prices. Nevertheless, at the year-end total seaborne and inland imports had increased by a significant 11% to 207 Mt compared to 2017.

With the Chinese government completing its supply reform (focused on volumes) during 2019, their next step will be to focus on coal quality, not only on the production side, but potentially also concerning imports. The regulatory environment will continue to weigh heavily on market expectations.

In India, imports increased by 10% to 156 Mt during 2018 after a two-year decline. Electricity demand increased by 4% in 2018 to 1,243 TWh driven by a government push for electrification and improved industrial performance, up by 7% in 2018. Meanwhile a 6% increase in domestic thermal coal production to 596 Mt in 2018 was not sufficient to satisfy growth in demand. Challenging transport logistics impacted domestic supply, despite an increase in railcar supply during the year, and stocks at monitored utilities ran at critical levels during most of the year. Imports began to rise after the government approved power tariff revisions for coastal power plants operated by Adani and Tata. Around 50-55 GWs of installed capacity remain under financial stress and we have the potential to increase utilisation significantly if similar measures are approved for them.

Thermal coal price indices
($ per tonne)



Sources: Argus McCloskey Index, globalCOAL.

In the Indian sub-continent, Pakistan continued to demonstrate stable import growth in 2018, increasing by 32% to 14.1 Mt. The main driver was the commissioning of a 1.3 GW coal-fired power plant during 2017, which ramped up to full utilisation during 2018, as well as significant growth of the domestic cement industry during 2018. Another coal-fired power plant of 1.3 GW capacity is expected to be commissioned during 2019.

Southeast Asian demand accelerated significantly, increasing by 20% to 96.5 Mt. The bulk of this growth was driven by Vietnam, followed by the Philippines and Malaysia. In Vietnam, power production increased by 10% to 209.3 TWh supported by new coal-fired power plants. The state-owned power generator anticipates further growth in 2019 and 2020. In the Philippines, coal burn also increased, reflecting a number of new additions to the coal fleet during the year.

On the supply side, Indonesian exports increased by 8% to 402 Mt, with most of this growth attributed to low-CV, mainly 4,200 Kcal/kg GAR (3,800 Kcal/kg NAR), products. Due to a relative lack of infrastructure constraints and flexibility in contract mining arrangements, Indonesian producers are able to react more quickly to changes in market conditions, and these swings are mostly a function of Chinese demand.

Australian thermal coal exports grew 4% year-on-year to 209 Mt in 2018. China, and to some extent Southeast Asia, has been the key driver of Australian export strength, suggesting the majority of these additional volumes has been off-specification material (5,500 kcal/kg NAR, high ash) as most of the spare washing capacity in the key Hunter Valley mines was unavailable during the year. In the near term, the pipeline of new thermal coal projects coming on line in Australia is rather small.

Russian seaborne thermal exports to the Asia-Pacific market increased by a healthy 13% to 67.5 Mt during 2018, including 3 Mt shipped from western ports. As mentioned before, the majority of this growth reflects demand from South Korea, Japan and Taiwan. The geographic proximity of Russian ports enables North-East Asian buyers to manage their stocks more flexibly, while Russian high-CV low-sulphur and low-nitrogen coal meets the strict environmental requirements of HELE power plants. Russian export capacity is expected to increase in 2019, however, it remains to be seen whether railcar and railway infrastructure will be able to support this potential growth.

Colombian coal continued to flow into Asia during 2018 as it significantly increased supplies to the region by 37% to 8.4 Mt. The main recipient was South Korea, which accounted for over 60% of these volumes, followed by Japan, which took 13%. Colombian coal was also exported to other Asian countries such as China, Malaysia, Taiwan and India.

US exports to the Pacific market increased by 38% to 27.1 Mt. Attractive international prices incentivised US mining companies to divert production to exports. India, Japan and South Korea represented more than 65% of US coal exports to the Pacific in 2018. Indian customers primarily demand high-sulphur coal shipped from East Coast terminals, whilst South Korea predominantly buys coal from the Powder River Basin. Japan sources low-sulphur bituminous coal from Utah/Colorado, with both countries shipping mainly from western ports.

+8%

ASIA-PACIFIC DEMAND COMPARED TO 2017

+17%

RUSSIAN COAL IMPORTS TO JAPAN, SOUTH KOREA AND TAIWAN COMPARED TO 2017

+13%

RUSSIAN EXPORTS TO THE PACIFIC MARKET COMPARED TO 2017

ATLANTIC MARKET

In 2018, demand for imported thermal coal in the Atlantic market decreased by 3% year-on-year to 168 Mt.

In Europe, the decline in coal demand continued in 2018, due to mild weather at the start and end of the year, national policies on emissions targets and a phasing-out of coal gaining momentum, as well as a strong contribution from renewables in Q2. Nevertheless, prices for high-CV coal (6,000nar kcal/kg) increased year-on-year supported by the NEWC index due to arbitrage opportunities, with the gap between specification and off-specification (5,500 kcal/kg) material widening to historical highs. In the second half of the year a lack of rainfall impacted the flow of barges from North European ports to German utilities. Under these circumstances, in addition to the usual supplies (from Colombia, Russia and the US), significant volumes of South African coal (due to lower demand from India and Pakistan), and even Australian 5,500nar coal found its way into the Atlantic market. This was also at a time when stocks in Amsterdam, Rotterdam and Antwerp were reaching historical highs and these ports had to reject cargoes due to lack of capacity. As a result, destinations such as Spain, Italy and Turkey received substantial volumes during that time.

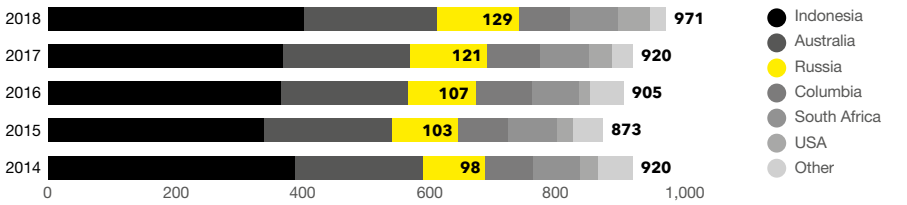
Meanwhile, demand in the Mediterranean market increased by 9% to reach 46 Mt during 2018; most of this growth was driven by Egypt, supported by its cement industry.

On the supply side, Colombian exports to the Atlantic market decreased by 9% to 71.1 Mt. This was partially attributable to supply disruptions, as an intense wet season restricted output in April and July. Russian seaborne exports to the Atlantic basin remained flat at 61 Mt due to railway constraints, maintenance at the Ust-Luga port during the second half of the year and challenges related to shipments of coal to Amsterdam, Rotterdam and Antwerp at the end of the year. South African coal supply to the Atlantic market was flat year-on-year. US coal exports to the Atlantic market increased by 21% to 20.7 Mt, with 1 Mt of this growth attributable to Europe and most of the remaining volumes absorbed by Egypt and Morocco.

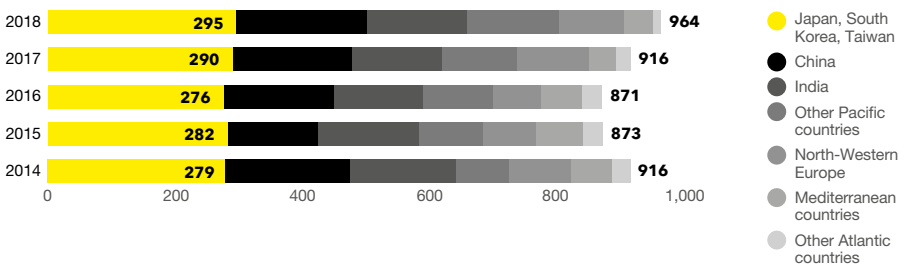
+9%

DEMAND IN THE MEDITERRANEAN COMPARED TO 2017

Thermal coal seaborne exports
(Mt)



Thermal coal seaborne imports
(Mt)



Russian coal market

In 2018, the Russian coal industry set an all-time record in coal production due to favourable export market conditions and stable domestic coal consumption. High-quality Russian coal is increasingly in demand in European and Asian markets.

In 2018, Russian thermal coal production rose by 5%[1] year-on-year to 340.5 Mt. Total sales of Russian thermal coal grew by 6% year-on-year to 320 Mt, including a 8% increase in international deliveries, to 186 Mt.

+8%

RUSSIAN EXPORTS TO THE PACIFIC AND ATLANTIC MARKETS

Hard coal production in 2018 increased by 5% to 260 Mt. In addition to power generation, hard coal is used in the production of cement and metals and many other industries. A large share of Russia's high-quality hard coal is supplied to the international market. Total sales of hard coal in 2018 increased by 6% year-on-year to 239 Mt, including a 7% growth in exports (to 176 Mt), due to robust demand for Russian coal and a favourable pricing environment.

Russian brown coal shipments grew by 5% year-on-year to 80 Mt. Brown coal is mainly supplied to the Russian market, to power plants and public utilities. Domestic supplies of brown coal in 2018 increased by 3% to 70 Mt. Brown coal exports have been showing positive dynamics recently and in 2018 reached 10 Mt, an increase of 17% year-on-year. This was largely driven by Sakhalin mining companies.

Nevertheless, railway infrastructure and port facilities faced the same restrictions as before. In 2018 there was a significant shortage of gondola cars on the railway network. This led to higher car rental rates and an inability to fulfil coal shipment plans for both export and domestic deliveries.

Russian market supplies

In 2018, thermal coal supplies to the domestic market grew by 3% to 133 Mt. Power generating companies received 86.1 Mt of coal, including 53.3 Mt of brown coal and 32.8 Mt of hard coal. Thermal coal supplies to public utilities increased by 12% year-on-year to 22.6 Mt.

Higher coal consumption was explained by stronger demand for electricity due to lower than average monthly temperatures in February-March and November-December 2018 compared to 2017.

Russian imports of thermal coal in 2018 remained at the level of 2017, and totalled 24 Mt. Kazakhstan remained the largest supplier of thermal coal to Russia.

Export supplies

At the year-end, Russian thermal coal exports rose by 8% year-on-year to 186 Mt.

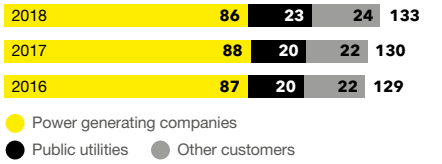
Shipments both to the West and to the East grew by 8% and reached 103 Mt and 83 Mt[2], respectively.

In the Atlantic region, there was a notable rise in seaborne shipments of Russian coal to Poland and in volume of shipments to the UK, Ireland and Scandinavian countries. While deliveries through border crossings increased, the volume of coal supplied via seaports to the European part of Russia and the Baltic states remained largely flat.

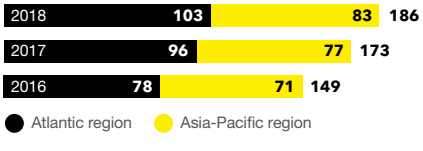
As for the East, Russia increased shipments of coal to South Korea, Japan, Taiwan and China. Exports to the Asia-Pacific region in 2018 were again hampered by the modernisation programme of the Baikal-Amur and Trans-Siberian railways. Nevertheless, shipments of thermal coal towards ports in the east of Russia rose by 6% to 75 Mt[2]. In addition, coal sales to China through border crossings increased significantly, by 30% to 8 Mt.

Overall, the largest foreign markets for Russian thermal coal in 2018 were South Korea, China, Poland, the Netherlands, Japan, Taiwan and Germany.

Thermal coal supplies to the Russian market (Mt)



Russian thermal coal supplies to the international market (Mt)



1. Statistical data from Russian government agencies, SUEK estimates.
2. Including PCI coal.

Sources: Statistical data from Russian government agencies, SUEK estimates.

Russian power market

210 TWh

ELECTRICITY CONSUMPTION IN SIBERIA IN 2018

+5.5%

THE COMPETITIVE PRICE FOR CAPACITY SALES IN SIBERIA COMPARED TO 2017

ELECTRICITY AND HEAT MARKET

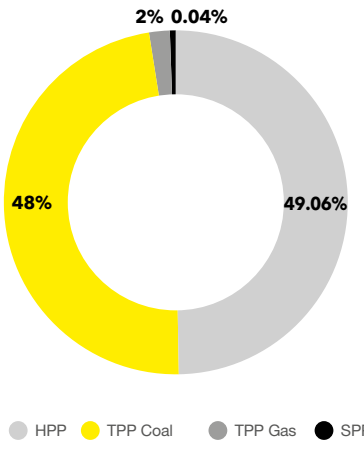
According to the System Operator of the Unified Energy System of Russia, electricity generation in Russia in 2018 increased by 2% year-on-year to 1,071 TWh. The growth in electricity and heat energy consumption and generation was related to the change in temperature: in February-March and November-December 2018, the average monthly temperature dropped significantly compared to 2017. The main part of heat generation in Siberia in 2018 came from coal-fired plants.

Electricity consumption by Siberia's Consolidated Energy System (CES) rose by 2% year-on-year to 210 TWh. The main growth drivers were a decrease in the average annual air temperature by 1.8°C and higher consumption by Russian Railways.

Due to the strong spring floods and heavy precipitation throughout 2018, the water reserves in the reservoirs of the Angara-Yenisei HPP chain were restored to average multi-year levels. Electricity generation at hydro power plants in Siberia and the East exceeded the level of 2017 by 7%. This increase in hydrogeneration operations led to a slight decrease in the performance of thermal power plants in Siberia.

The electricity price in the competitive sector (day-ahead market, DAM) in Price Zone 2 (Siberia) increased by 3% year-on-year because the energy deficit within Siberia was offset by the inflow of electricity from Price Zone 1 (European part of Russia) at a higher price (+ 1.5% or 15.4 RUB/MWh).

Share in Siberia's electricity generation by plant and fuel types



Sources: Statistical data from Russian government agencies, SUEK estimates.

POWER CAPACITY MARKET

Power capacity sales in in Siberia (Price Zone 2) in 2018 amounted to 42.7 GW, flat year-on-year.

The competitive price for capacity sales in Price Zone 2 in 2018 was 200,279 roubles/MW/month, which is 5.5% higher than in 2017. This was driven by:

1. Higher demand for capacity in 2018 year-on-year during the competitive capacity take-off (CCT), which changed the price corridor
2. Factoring in the consumer price index for an additional year when indexing the price based on CCT outcome

In 2018, market players helped develop a concept to select projects to modernise thermal power plants for the period up to 2031. This activity resulted in the adoption of a number of by-laws, including the Selection Regulations, which entered into force simultaneously with the date of approval of the relevant Government decree in February 2019.

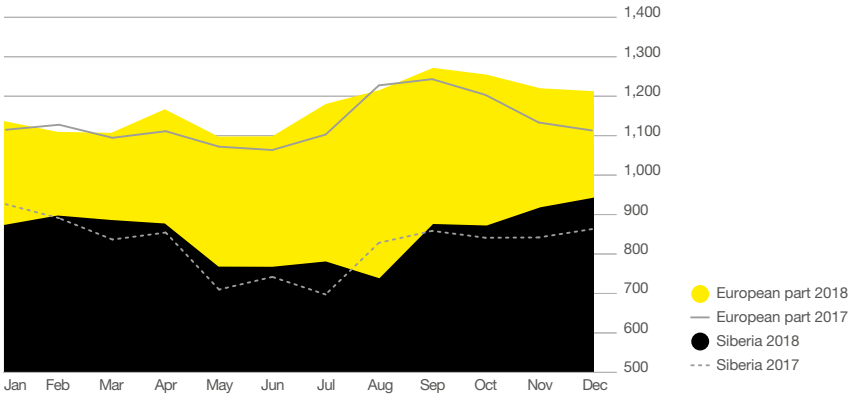
Installed capacity structure by plant types in Siberia

	Installed capacity, MW	
Power plants	**2017**	**2018**
Thermal	26,596.59	26,520.49
Hydro	25,286.40	25,291.40
Nuclear	0	0
Renewables	55.2	55.2
Total	**51,911.19**	**51,867.09**

Sources: Statistical data from Russian government agencies, SUEK estimates.

Equilibrium price index: electricity purchase in Price Zone 2 2018/2017

(RUB/MWh)



Sources: Statistical data from Russian government agencies, SUEK estimates.