

EXECUTIVE SUMMARY

Old times, new times

In 2013, coal added more primary energy than any other fuel and was the fastest-growing fossil fuel. 2013 coal demand grew 2.4% on a tonnage basis, more than oil and gas, enhancing its position as the second-largest primary energy source and closing the gap with oil. This trend, driven by the role of coal as the main provider of electricity, is a *déjà vu* of our annual *Medium-Term Coal Market Reports*. Similarly, the People's Republic of China was once again driving this growth. Growth in China (196 million tonnes [Mt]) was actually larger than global growth (188 Mt). In the United States, 2013 higher gas prices prompted coal demand to recover part of its 2012 decrease. In Europe, low power demand and increasing renewable production squeezed coal power generation, causing an overall coal demand decline of -35 Mt when compared to 2012. In Japan, where the coal fleet fully recovered and two new coal plants commenced commercial operations, coal demand grew +6.4%.

Coal markets show great dynamism. Despite coal's reputation as a 19th-century industry, coal markets are changing at a fast pace. Former parameters age rapidly, and new trends appear. Demand is moving to Asia, and trade flows are following. A great variety of different coal qualities are traded, including low quality high ash coal, triggering new price indices. While long-term contracts still operate, quarterly, monthly and spot purchases become more frequent. There is increasing use of derivatives both in volumes and coal qualities, origin and destinations. Some policy changes – and these are announced frequently – in countries such as China and Indonesia have the potential to impact the global market. Changes are happening at both large and small scale. As one example, Central Appalachia, once the largest producing area in United States, now lags behind both Powder River Basin (PRB) and Illinois Basin.

Coal oversupply keeps pushing prices down

In 2014, coal oversupply persists and very low coal prices continued to dominate. For a few years, the focus of coal producers was to expand production. New capacity was constantly added and demand led by China consumed every additional tonne. However, since 2011, oversupply and low prices have dominated. While US shale gas impacts on international coal prices have often been overstated, domestic Chinese dynamics translated into international markets have been largely overlooked. The domestic oversupply in China – accompanied by price reduction from the major producers to protect their market share – has strongly impacted international markets, which were likewise oversupplied by expansions by all major exporters. Imported European steam coal prices, one of the main reference prices worldwide, were in the USD 70-80/tonne range during 2014, compared to over USD 120/tonne in March 2011. Australian met coal has been in a very narrow band between USD 112/tonne and USD 116/tonne since April 2014, compared to March 2011 when it averaged over USD 320/tonne.

Take-or-pay contracts, financial commitments and better economies of scale pushed prices down. With persistent low prices, the strategy of producers is to reduce costs. However, this is coupled with better efficiencies and economies of scale, putting more coal in the market, increasing oversupply and driving prices even lower. Another way to increase competitiveness is to cut production of unprofitable mines. However, this is not always possible. Take-or-pay contracts for infrastructure use and financial commitments to pay investments make many producers operate with negative margins. Minimised loss is the new target for many, but in the medium term, despite low prices, expansions will happen. There are many projects in different phases of development ready to start or ramp up production, although most of them will not do so at current prices.

OECD: Declining trend with caveats

The coal renaissance in Europe was only a dream. As announced in former *Medium-Term Coal Market Reports*, coal use increase in Europe in recent years was a temporary spike largely due to low coal and carbon dioxide (CO₂) prices, high gas prices, and the partial shutdown of German nuclear plants. However, after 2012, coal demand began to decline due to moderate economic growth, energy efficiency gains, increasing renewable energy sources and coal plant retirements. Nothing new has happened to change our views. Turkey, also grouped with OECD Europe, follows a different trend: high economic and energy demand growth will come with new coal capacity, giving rise to a steady increase of coal consumption. Whether nuclear power plants in Japan are brought back online hardly affects our projections for Japan. The impact, however, may be felt in Europe, as Japanese nuclear power plants could ease liquefied natural gas (LNG) markets and make gas more competitive in Europe, displacing some coal.

Trends in coal demand differ in OECD America and OECD Asia Oceania. While our projections confirm the downward trajectory in US coal consumption, this is far from a dramatic decline. Despite climate plans, environmental regulation and shale gas production, there remains much low-cost coal in the United States and more than 250 gigawatts (GW) of coal capacity will remain at the end of the outlook period. In OECD Asia Oceania, the nuclear shutdown in Japan and high LNG prices make coal very competitive. New coal capacity coming online, foremost in Korea but also in Japan, will lead to a coal demand increase. Given the current high load factor of coal power plants, coal versus gas prices and absence of CO₂ price, we assume coal capacity mostly running flat in the region during the period.

Seaborne trade will largely depend on China, but not only

As arbitrage on the eastern coast of China spreads domestic prices out, Chinese developments will define coal markets. In fact, all developments in China impact coal markets, but there are two key issues to be underlined. Firstly, the fight against pollution is now a driving force of energy policy. But the war on pollution has two sides for coal. On the one hand, the below-mentioned diversification will decrease coal demand. On the other hand, other measures do not decrease coal consumption but can even increase it. In this group we can mention large coal bases linked through ultra-high voltage (UHV) lines to big consumption centres, the coal conversion process to synthetic natural gas or liquid fuels and cleaning equipment in coal power plants. Secondly, 1 billion tonnes are shipped seaborne to the coast of China in a fierce competition between domestic and international supplies. Policy measures (quality restrictions, import taxes, royalties, and so forth), currency rates or other factors could incline the balance towards domestic or international supplies with implications worldwide.

Indonesia is the main unknown among the suppliers, but there are others. Whatever output IEA models produce, there are potential future developments that are out of our control and can change our forecast. Indonesia, the world's largest coal exporter, has accounted for the bulk of coal export growth recently. Indonesia has announced a ban on low calorific coal or a cap on production, and a new export license has been introduced. Our projections show increasing exports from Indonesia, but at a much slower pace than in previous years. In Colombia, a secure supplier with healthy investments in the pipeline, some producers have recently had disruptions for different reasons. There can also be upturn surprises: the Galilee and Surat Basins in Australia and PRB in United States have the potential to oversupply any demand if the appropriate infrastructure is in place. The large, competitive reserves in Mongolia could reach seaborne markets eventually. And Mozambique is uncertain. Finally, geopolitical turmoil or weather disasters can also impact coal trade, given that most thermal exports come from only six countries, even fewer for coking exports.

Peak coal in China? Not yet

At last, coal indicators in China could decrease. China will be the coal giant for many years in the future. We project that coal demand annually grows at 2.6%, more than 100 Mt per year during our outlook period. China will add more coal demand than any other country, but we have entered a new time in which the outstanding growth from the past in all of the coal indicators, such as production, consumption and imports, will not be repeated. Moreover, despite the general increasing trend, we will see temporary declines, for example during a very wet year we could see coal demand for power declining. Imports could also decrease at any time, depending upon prices and/or policy changes. After many years of unbelievable economic and coal demand growth, China has entered a more moderate path. Lower economic growth and also a lower energy intensive economy and higher diversification will curtail coal growth in China in the coming years.

Economic growth in China needs more energy than nuclear, gas, oil and renewables can supply. Diversification efforts, the so-called *anything but coal* policy, will lead to big developments of hydropower, wind, photovoltaic (PV) and nuclear capacity and gas use. Additional non-coal generation in 2019 is assumed to be 1 200 terawatt hours, and gas demand will almost double during the outlook period. Despite such strong assumptions, as well as decreasing energy intensity in the Chinese economy and gross domestic product and power demand growth decoupling notably, additional coal is still needed to meet energy demand. Investments in new coal generation capacity and coal gasification plants also support this growth. Most of diversification investments, such as nuclear, hydro, PV and wind, are capital-intensive with low or very low running costs; therefore, longer-term trends might suggest peak coal in China during the next decade. However, we do not see that peak in the outlook period unless economic growth is much lower than assumed.

There is no other China out there

Annual coal consumption in India will grow 177 million tonnes of coal-equivalent, or over 250 Mt, at 5% annual growth on average, becoming the world's second-largest coal consumer. India, despite problems to ramp up domestic production and to build coal plants at the desired pace, will see a solid increase of coal use and, to a lesser extent, coal production in the outlook period. We project that India will become the second-largest coal consumer, surpassing the United States, and the second-largest coal importer, close to China, as well as the world's largest thermal coal importer. Total coal demand increase of over 250 Mt during the whole outlook period is larger than the current demand of any country except China, United States and India. However, to put this in perspective, growth in China in a single year has often been higher than this during the previous decade.

Over two-thirds of the coal demand growth in India and the Association of Southeast Asian Nations (ASEAN) countries will be for power generation. Although the share of non-power coal demand in Asia is larger than in other regions, power will largely drive the coal demand increase in Asia. Electrification of highly populated areas with poor or no electricity access and power to fuel economic growth will trigger power demand in the region. Driven by investments in coal power plants mainly in India, Indonesia, Viet Nam and Malaysia, coal consumption in the region will increase. Several countries in Asia are building coal power plants, but apart from China and India, the ASEAN countries represent the main area of growth, with over 30 GW of new coal power generation coming online during the outlook period. While this figure might look impressive, China has annually added double this on average since 2005.