High Calorific Value Coal: Global and Turkish Outlook

Despite the fact that coal has notorious perception due to its impacts on the environment, it's not possible to neglect its share in the global energy supply. Especially, in emerging markets with ever growing energy demand, relatively cost and eligibility advantages bring coal into prominence.

Deloitte Turkey has recently published a public report on the global and local use of high calorific value coal with extensive commentary and data visualisations. For a printed or electronic copy of the report please e-mail ktopuz@deloitte.com

GLOBAL

Production: In parallel with developments in economies that consumes coal intensively; global coal production reached 7.9 billion tonnes and hit the record high level in 2013. Among the coal types, hard coal stands for 91%of global coal production and recent increase in hard coal supply is mainly stimulated by steady growth in steam coal production. Also, steam and coking coal production increased by 0.3%in 2013 and reached to 7.2 billion tonnes production level.

Consumption: When sectorial consumption of coal is analysed, global coal consumption increased by 3%and reached to 7.8 billion tonnes at the end of 2013. It is occurred that electricity and heat generation sector maintains its leadership with more than 3.8 billion tonnes and this situation can be seen in Turkey as well.

Trade: In 2013, coal trade volume increased by 6%and reached at 1.2 billion tonnes of which 1.1 billion tonnes is transported by sea freight and only 95 million tonnes is carried by land transport. Coal trade volume represents 17%of total coal production whereas remaining coal production is basically consumed in the same country where it is produced. As a result of increasing coal demand, China's coal import activities has shown great advancement by reaching over 235 million tonnes and for the first time China get ahead of Japan whose coal import accumulated to 185 million tonnes. India and South Korea from Asia & Pacific region also Germany, England, Turkey, Italy and Spain from Europe are rated among the other major coal importing countries.

Market Value: As global coal market volume increased by 5%in 2012, Asia & Pacific region countries and top 10 hard coal companies remained their leading positions. Especially, production of top 10 hard coal companies accumulated to 1.8 billion tonnes and market value of 123.3 billion USD. This also indicates that top 10 hard coal companies hold 24%of hard coal production and 20%of hard coal market value.

TURKEY

Production: Turkey has 1.3 billion tonnes of hard coal reserve of which 514 million tonnes is classified in proven category. However, in the recent years, reserve volume of major hard coal fields remained at the same level. When local production and import analysis conducted, it is seen that decreasing production rate of TTK and local private sector players lead hard coal importers to close the increasing hard coal supply deficit. In order to uplift the decreasing hard coal production of TTK, mining sites are started to be transferred to private sector players in exchange for royalty fees as from 2005. Private sector players' production increased to 1 million tonnes level in 2006 and yet could not able to maintain this performance due to ups and downs over the years. Eventually, in 2013, Turkish hard coal production has decreased to 1.6 million tonnes and hit the record low levels since 2000.

Imports: In order to satisfy the increasing hard coal demand, Turkish hard coal supply leaned to imports and as a result import ratio in hard coal supply reached to 95%. For the six years between 2008 and 2013, coal Imports increased to 26.6 million tonnes. Among the hard coal types, steam coal import represents 81%of total hard coal import with 21.5 million tonnes and also coking coal imports reached to 5.1 million tonnes. With more than 8.6 million tonnes of steam coal import, Russia took the lead in Turkish steam coal market where Colombia and South Africa exported 7.2 and 3.3 million tonnes of steam coal to Turkey respectively. In recent years, U.S.A. has come into prominence in global coking coal supply and constituted 69%of Turkish coking coal imports with 3.5 million tonnes.

Consumption: In 2013, hard coal consumption decreased by 10%and fell to 28.2 million tonnes. As the biggest hard coal consuming sector, electricity & heat generation constituted 62%of Turkish hard coal consumption and recent coal power plant investments increased the hard coal consumed in power plants.

Installed Capacity: The installed capacity of imported coal PPs in Turkish electricity market has passed 3.9 GW by the end of the 2013. On account of increasing Turkish electricity demand and economic advantages of imported coal, it wouldn't be wrong to expect that imported coal PPs will show significant growth. In the first seven months of 2014, additional installed capacity of 950 MW connected to the grid.

Uncertainties related to natural gas power plants and unexpected delays in lignite projects lead investors to hard coal

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as relatively more eligible and cheaper energy source and as a result great number of projects showed up. As of end of 2013, 7 imported coal power plants are connected to the grid whereas there are 20 projects under the evaluation, 10 power plants under construction and 3 power plants have obtained pre-licenses. In total, current and upcoming imported coal power plants accumulate to 30 GW of installed capacity. After the natural gas investment propensity in 2011, Turkish electricity market has a new tendency to imported coal power plants.

On the other side, it becomes apparent that all locations available to imported coal power plants are already held by investors and some of these projects will be driven out of the competition.

It is also worrying that such coal projects can also bring serious environmental issues.

TRENDS

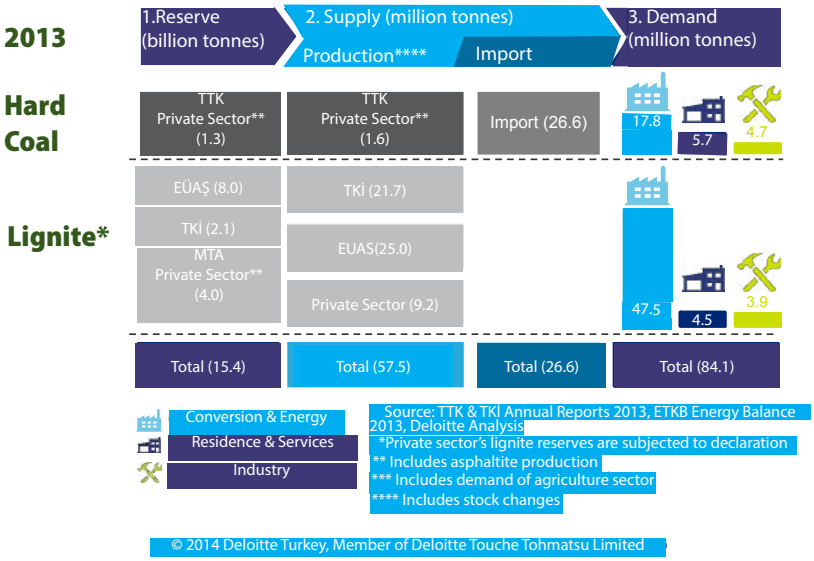
When global coal market analysed, trends like China's growing coal demand, shale gas impact on coal prices and carbon policies can be defined as major indicators that have determining role on coal pricing.

China: Coal is mainly consumed in the same region where it is produced, that is the reason why coal production and consumption activities are affected directly by regional developments. In this respect, economic development in China and other Asia & Pacific countries is the main factor behind the increasing coal activities. For the six years between 2008 and 2013, despite the decreasing coal production trend in the rest of the world, Asia & Pacific region coal production increased by 1.2 billion tonnes and uplifted global coal production by 1.0 billion tonnes.

However, Asia & Pacific was still net coal importer region in 2013. By representing 50%of global coal demand, China came into prominence as the biggest coal importer in the world.

TURKISH COAL BALANCE

With more than 15.4 billion proven reserves, in 2013 Turkish coal production reached at 57.5 million tonnes. As usual, demand is still driven by conversion & energy sector along with residence & services and industry sectors.



Development of Coal Power Plants: In 2013, coal power plants share in global electric generation increased by 4%. According to the forecast study shows that coal power plant generation will increase by CAGR of 1.2%and Asia & Pacific region will represent 70%of that generation at the end of 2020. Especially, China is expected to increase its share from 45%in 2013 to 48%in 2020.

U.S. Coal Imports: As a result of U.S. shale gas development, decreasing natural gas prices triggered natural gas preference over coal in electricity generation sector. However, due to unexpected delays in LNG exports investments and licencing procedures, shale gas production in U.S. is mainly consumed internally, over supply of natural gas triggered decline in the natural gas prices. Hereby, natural gas power plants came in more favourable position against the coal power plants which used to dominate the U.S. electricity generation market. Decrease in U.S. coal consumption caused excess coal supply in the market and triggered coal export activities to force global coal prices to fall. In the third quarter of 2012, coal exports grew by 31%and reached to 34 million tonnes and it caused coal price (FOB ARA) to drop by 11%.

Global Trade: Developments in coal market provide opportunity for financial & physical trading to have more widespread, liberal and liquid market structure. Physical coal trade activities are carried out in ports and price indices related to these ports enable traders to fulfil the financial activities. As a result, these price indices provided better risk management opportunities for trades. In 2000, global coal trading activities actualised in financial and standardized markets had a very small volume however as from 2007 the trading volume showed a significant increase. Volume of steam coal derivatives grew by 13%from 1.3 billion tonnes in 2007 to 2.4 billion tonnes in 2012.

Carbon Emission: Within the scope of environmental policies, low performance of carbon markets caused continuation of the coal power plants' advantages against the greener competitors like natural gas PPs and renewables. In order to decrease global carbon emission, several actions are taken however, EU-ETS (European Union – Emission Trade System) was the first and biggest practice introduced to carbon markets. EUA emission credits started from 21 EUR/tonnes in 2005; however, it showed poor performance afterwards. In a period between 2008 and 2011, EUA felt by 54%and became 7 EUR/tonnes whereas CER dropped by 69%. Due to the low performance of carbon prices, carbon markets could not be a treat to coal investors and coal power plants maintained competitive advantage against natural gas power plants. ●