

DECC 2015 Coal Price Scenarios

Peer review by Dr. Harald Hecking, ewi Energy Research & Scenarios, June 2015

Overview

- The general approach of choosing 3 scenarios and thereby determining an interval of coal price developments is useful.
- The methodology is further refined since different methods are used for different time horizons. The information base gets worse as the time horizon increases and therefore the preciseness of the method naturally decreases. The different approaches applied by DECC are reasonable and consistent with each other.
- One potential improvement of the methodology could be to account for interactions within the international coal market (for more detailed discussion, see below). Some of the interdependencies with the global coal market are to some degree already reflected in the assumption of European coal demand taken from IEA's World Energy Outlook. However, given the decreasing importance of Europe as a coal importer on the global market, in future price scenario analyses, the international interdependencies should be accounted for in more detail, since for the future, it can be expected that coal prices in Europe will be affected by Asia even more than today.

Methodology

- The DECC 2015 coal price scenarios apply different methodologies for different forecasting periods. This reflects the increasing degree of uncertainty and decreasing information availability and is therefore a useful approach.
- The near-by future is modelled based on forward prices. I consider this approach as useful since it reflects and subsumes all available information of the players on the coal market. However forward curves cannot predict the coal spot price without uncertainty. Therefore, including a historic prediction error to model a bandwidth (high/low scenario) is reasonable.
- Concerning the long-run, I agree with the approach of using full costs of supply as a price estimator. Even though past evidence has shown that the actual coal price will deviate a lot from it in both directions (because of boom-and-bust cycles in resource markets or due to the high uncertainty concerning future development of mining costs), long-run costs are still the best available predictor.
- The chosen approach aims at meeting supply with European demand. However, European demand will play a less and less important role on the global coal market. Applying cost curves to model coal supply implicitly assumes that there is no interaction with other market regions such as Asia. This is because assuming demand and prices were very high in Asia, then many mines (e.g. in South Africa) would not be available to the European market (hence not in the cost curve) because they would rather sell their coal to Asia. Hence, European prices would be higher. If in turn, demand and prices in Asia were low, there would be mines suddenly willing to export to Europe, thus appearing in the cost curve making European prices lower. This effect of global arbitrage has been discussed in IEA's Med Term Coal market report 2014 on page 53 in box 2.1. Given that an increasing importance of Asian coal imports is widely expected, European coal prices will rather be affected by global developments than by Europe's own coal demand. Therefore, I recommend some improvement of the methodology for the future in that regard.
- The approach of using steam coal prices is reasonable because it is the dominating type of import coal to the European market.

Central Scenario

- The 2015 price derivation as well as choosing the CIF ARA forwards for 2016-18 is a reasonable approach as well as is linear interpolation to the 2025 year for 2019-24.
- As mentioned before, long-run marginal costs are the right approach for determining the 2025 prices. In a time range until 2025, there will be new investment/re-investment necessary. Therefore, it makes sense to include the capital margin in it. More information about the margin assumed would be helpful to understand the results better.
- Taking into account the CIF costs, hence the costs for production, royalties, inland transports, port handling and shipping, is the right approach.
- Taking WEO as input data for the 2025 coal import demand assumptions is fine. However it might be useful to account for non-power steam coal demand (e.g. for heat processes of industries). Since this data is obviously not available for 2025, one idea could be to take today's non-power steam coal demand and assume the same value for 2025.
- Applying a 1% growth rate for 2025-30 seems reasonable. 2030 onwards, especially because of huge uncertainty concerning coal demand, e.g. because of internationally binding carbon emission reduction targets, forecasting prices is almost impossible, therefore a 0% growth rate seems plausible.

Low scenario

- For the 2015-18 period, the approach of a downward adjustment factor is reasonable to account for the fact that forward prices are no forecast but only an indication for spot prices realized later on. Taking one standard deviation seems plausible as well as accounting for decreasing prediction power of forward prices by weighting the forecast horizon. Linear interpolation itself is fine too. However, it is somewhat counterintuitive, that the range of prices between all scenarios gets smaller between 2018 and 2025. This is obviously the consequence of using two different methodologies for 2018 and 2025 but is something that might be considered in next year's scenario analysis.
- The 2025 price derivation and the years onwards, is consistent with the approach of the Central Scenario.

High scenario

- The method for the 2015-18 and 2019-24 is consistent with the other scenarios as well as the 2025 price derivation is.
- Assuming a 2% price increase rate for 2026-2030 is reasonable since assuming the IEA's Current Policy Scenario implies a high coal demand not only in Europe but globally.