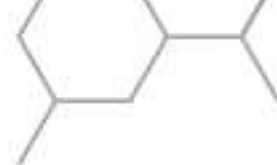


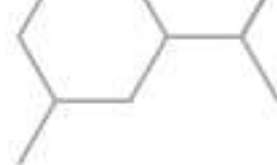
WORLD COAL ASSOCIATION 2016

Data sources

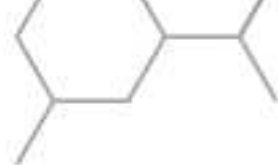
21 March 2016



Variable	Technology	Scenario	Data Source	Notes
CAPEX O&M Efficiency	All	All	IEA World Energy Investment Outlook 2014 - Power Generation Investment Assumptions www.worldenergyoutlook.org/weomodel/investmentcosts/	Costs inflated to 2014 prices using IEA inflation assumptions of 2.3%
Cost of Capital	All	All	Based on IEA and NEA (2015) - Projected Costs of Generating Electricity - 2015 Edition	
Emission Factors	All	All	Emission factors for greenhouse gas inventories from United States Environmental Protection Agency http://www.epa.gov/climateleadership/documents/emission-factors.pdf	Assume sub-bituminous coal emissions for subcritical coal, and bituminous coal emissions for HELE technologies
Asset Life	All	All	Ecofys (2014), Subsidies and Costs of EU Energy – Report for European Commission – Annex 4-5 https://ec.europa.eu/energy/sites/ener/files/documents/DESNL14583%20Final%20report%20annexes%204%205%20v3.pdf	
Construction Time	Thermal	All	Parsons Brinckerhoff (2013), Electricity Generation Cost Model – 2013 Update of Non-Renewable Technologies	Use mid-case assumptions



	Renewables	All	IEA World Energy Investment Outlook 2014 - Power Generation Investment Assumptions www.worldenergyoutlook.org/weomodel/investmentcosts/	IEA only provided construction time for renewables
Load Factor	Thermal	All	Based on IEA and NEA (2015) - Projected Costs of Generating Electricity - 2015 Edition	OCGT based on CRA Assumption
	Renewables	All	IEA World Energy Investment Outlook 2014 - Power Generation Investment Assumptions www.worldenergyoutlook.org/weomodel/investmentcosts/	IEA only provided load factors for renewables
Coal Price		Medium	Steam coal prices in coastal China, Europe and the United States in the New Policies Scenario from Figure 5.6 of IEA World Energy Outlook 2014 with regional specific adjustments based on CRA estimates of transportation costs	Use Coastal China as proxy for rest of Non-OECD Asia, Europe for Europe and United States for OECD Americas
		Low	Based on the ratio between the price of OECD steam coal imports in the "450 Scenario" and the price of OECD steam coal imports in the "New Policies Scenario" in IEA World Energy Outlook 2014	Prices for 2035 based on CRA interpolations of IEA estimates for 2030 and 2040
		High	Based on the ratio between the price of OECD steam coal imports in the "Current Policies Scenario" and the price of OECD steam coal imports in the "New Policies Scenario" in	Prices for 2035 based on CRA interpolations of IEA estimates



IEA World Energy Outlook 2014

for 2030 and 2040

Gas Price

Low

As above but with IEA price forecasts for the "450 Scenario"

Prices for 2035 based on CRA interpolations of IEA estimates for 2030 and 2040

Medium

Natural gas prices in United States, Europe Imports and Japan Imports for the New Policies Scenario in Table 1.5 of the IEA World Energy Outlook 2014 with regional specific adjustments based on CRA estimates of transportation costs

Prices for 2035 based on CRA interpolations of IEA estimates for 2030 and 2040

Natural gas price in South East Asia for 2015 is based on estimates of gas prices for countries in South East Asia from IEA Clean Coal Centre (2015) publication entitled Coal and Gas Competition in Power Generation in Asia

High

As above but with IEA price forecasts for the "Current Policies Scenario"

Prices for 2035 based on CRA interpolations of IEA estimates for 2030 and 2040