Some 1.2 trillion barrels of conventional oil have already been produced, mostly at a cost of up to USD 30 per barrel (b). For the remaining technically recoverable resource categories, a number of assumptions were made to estimate the quantity of the resource and the production costs. The resulting estimates for resource quantities and potential production costs are given in Figure 8.3.

**Figure 8.3 • Oil production costs for various resource categories**

The horizontal axis shows the cumulative resource quantity of the given resource category for the production of liquid hydrocarbon final fuel. Note that for the competing fuel sources, such cumulative quantities cannot be evaluated; coal and natural gas resources are in plentiful supply and in significant demand, therefore only a fraction will likely ever be used for CTL, GTL or similar conversion processes. Estimates for ethanol and biodiesel are also provided. These last two resources are replenished after every harvest season and, therefore, the question is rather how much synfuel can be produced annually without affecting food production and the environment.

The vertical axis shows the range of the potential cost in US dollars per barrel of oil (USD/b) of producing liquid hydrocarbon final fuel from each resource category. At this stage, no additional costs for carbon emissions are considered.

The assumptions for each category that were used to calculate the costs in Figure 8.3 are as follows:

Notes: unless otherwise indicated, all material in figures and tables derives from IEA data and analysis. CO₂ = carbon dioxide; MENA = Middle East and North Africa. “Other conventional oil” includes deepwater. No carbon pricing included. Synfuel resources are difficult to assess due to competition with other natural gas and coal uses. Biofuels are renewable and, in theory, not resource constrained. Biofuels production costs have been credited with a “refiner’s margin”, using the ratio of gasoline and diesel spot prices in the United States compared to the West Texas Intermediate crude oil price. The ratio was, on average, 1.3 for gasoline and 1.35 for diesel between 2007 and 2012.