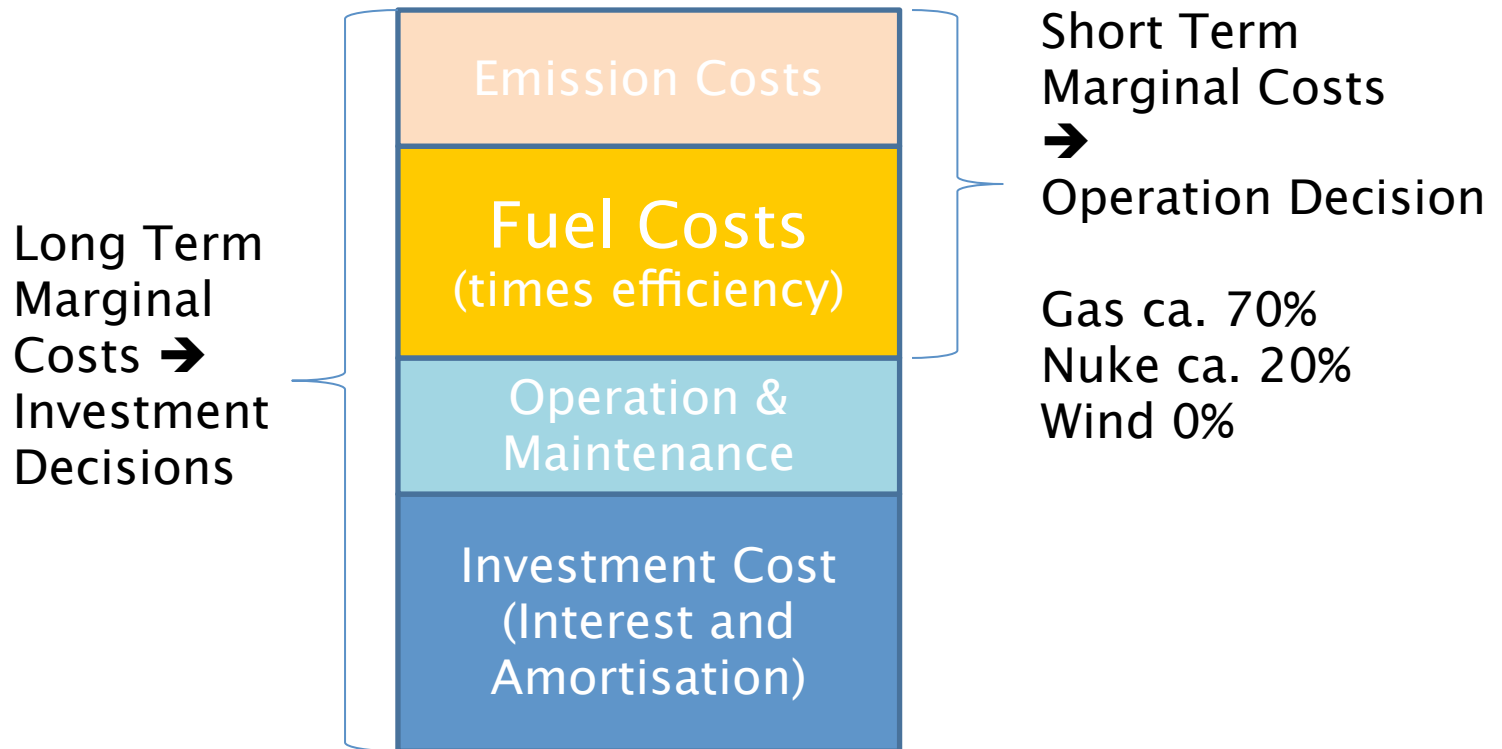


Commodity Trading Pricing

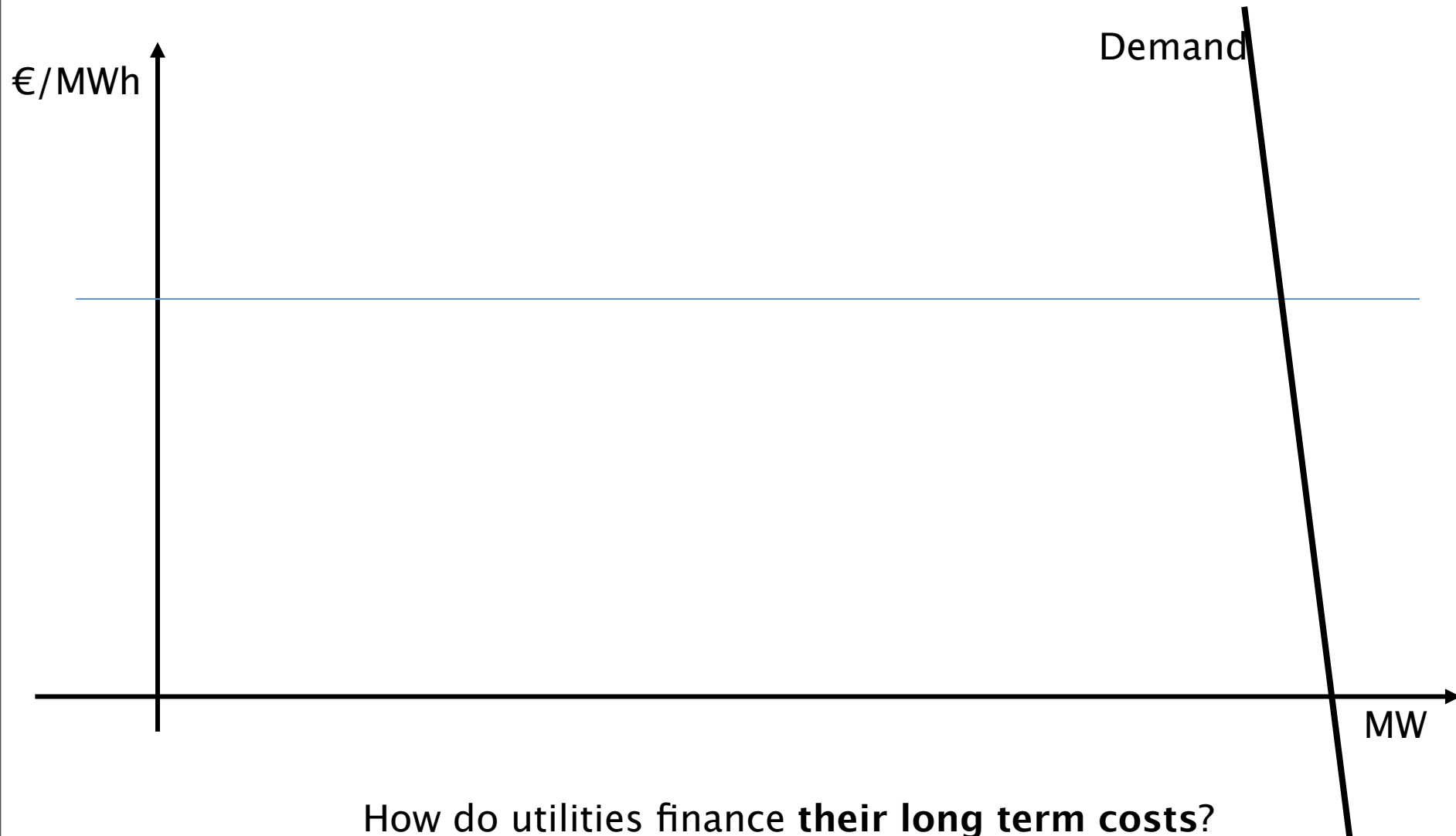
21.3.2011

Price Building: Cost of



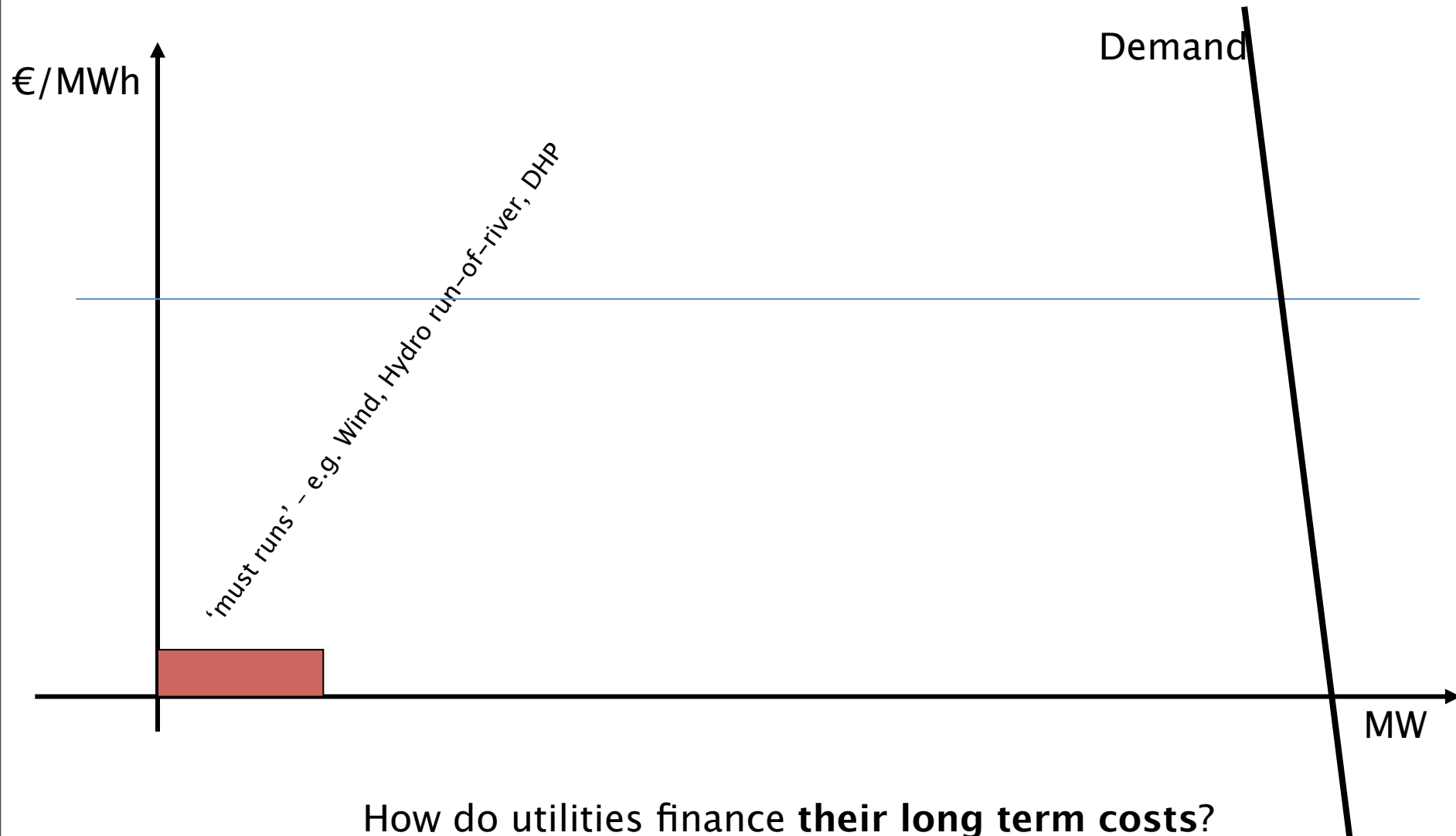
CCGT vs Nuke Cost Structure

The Merit-Order-Curve reflects a order of Power Plant due to there **short term marginal costs**

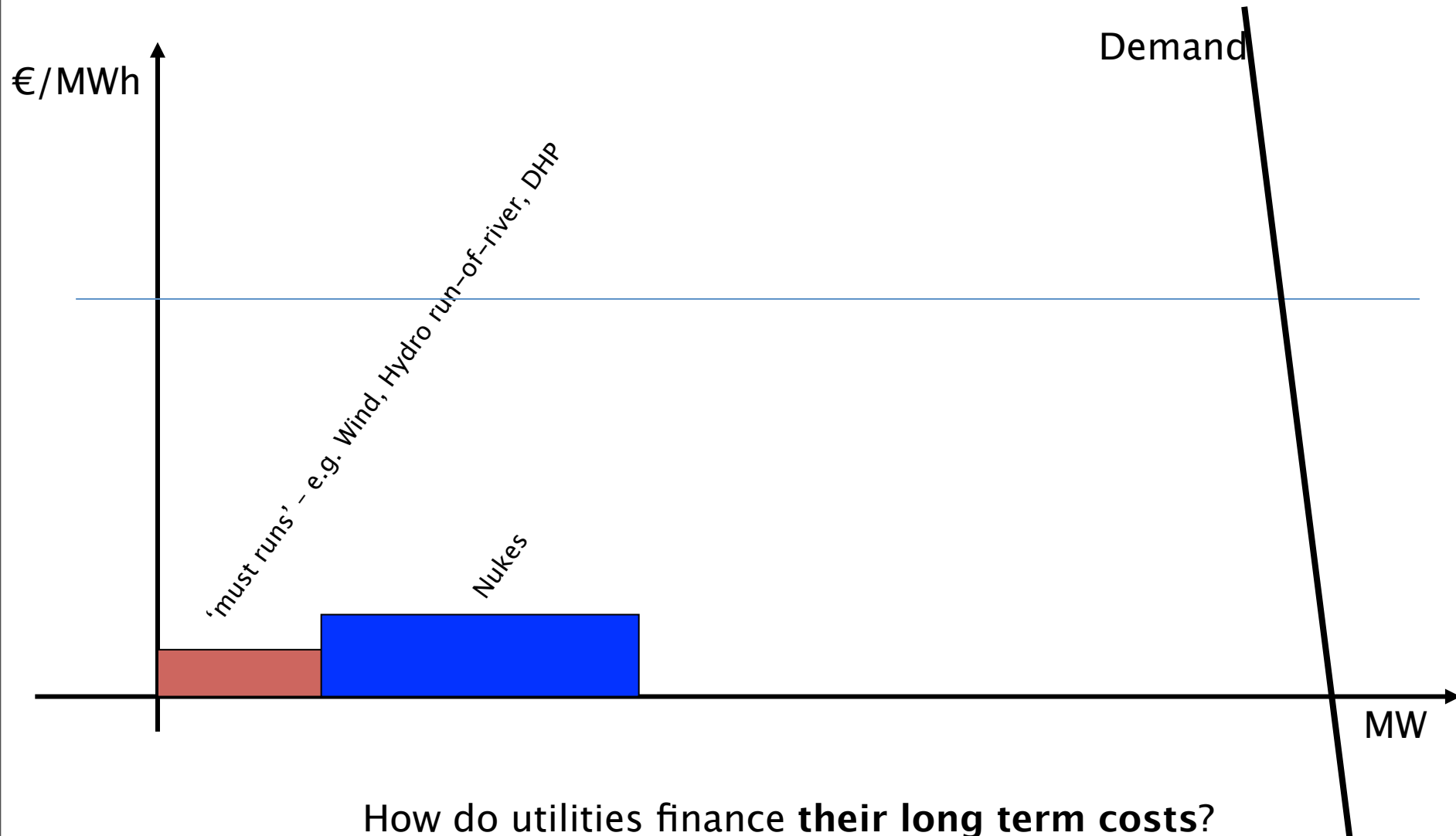


How do utilities finance **their long term costs**?

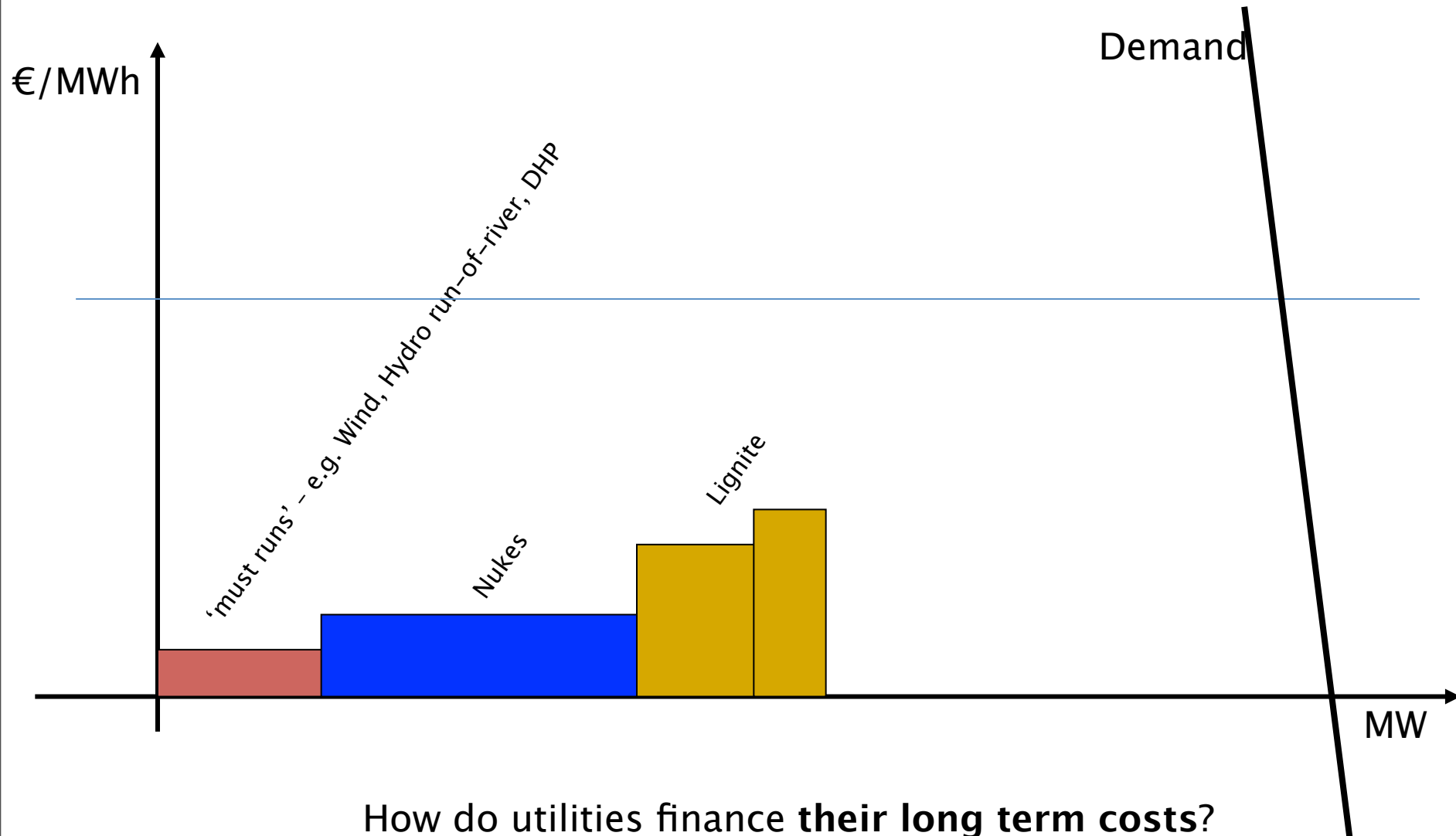
The Merit-Order-Curve reflects a order of Power Plant due to there **short term marginal costs**



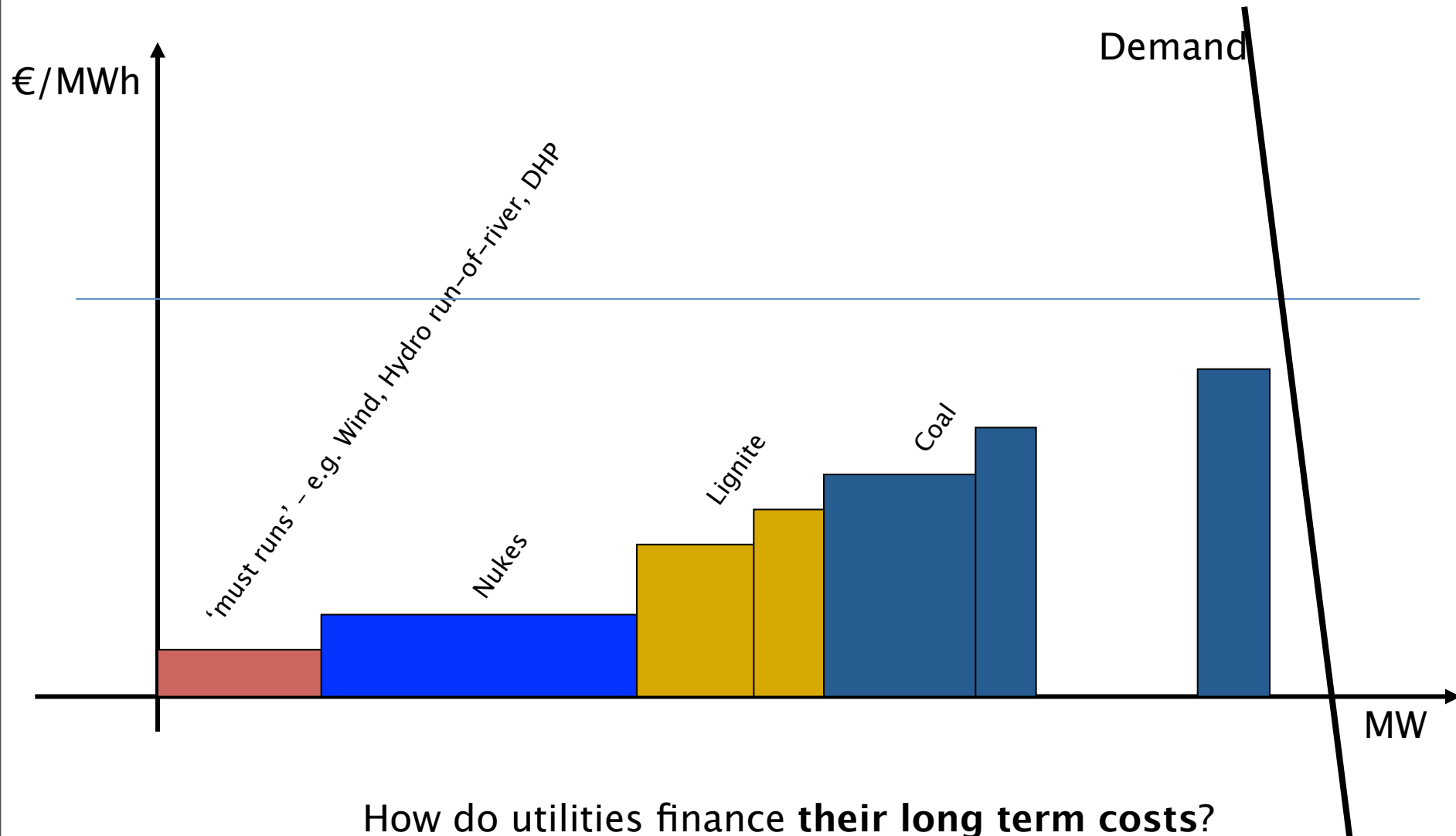
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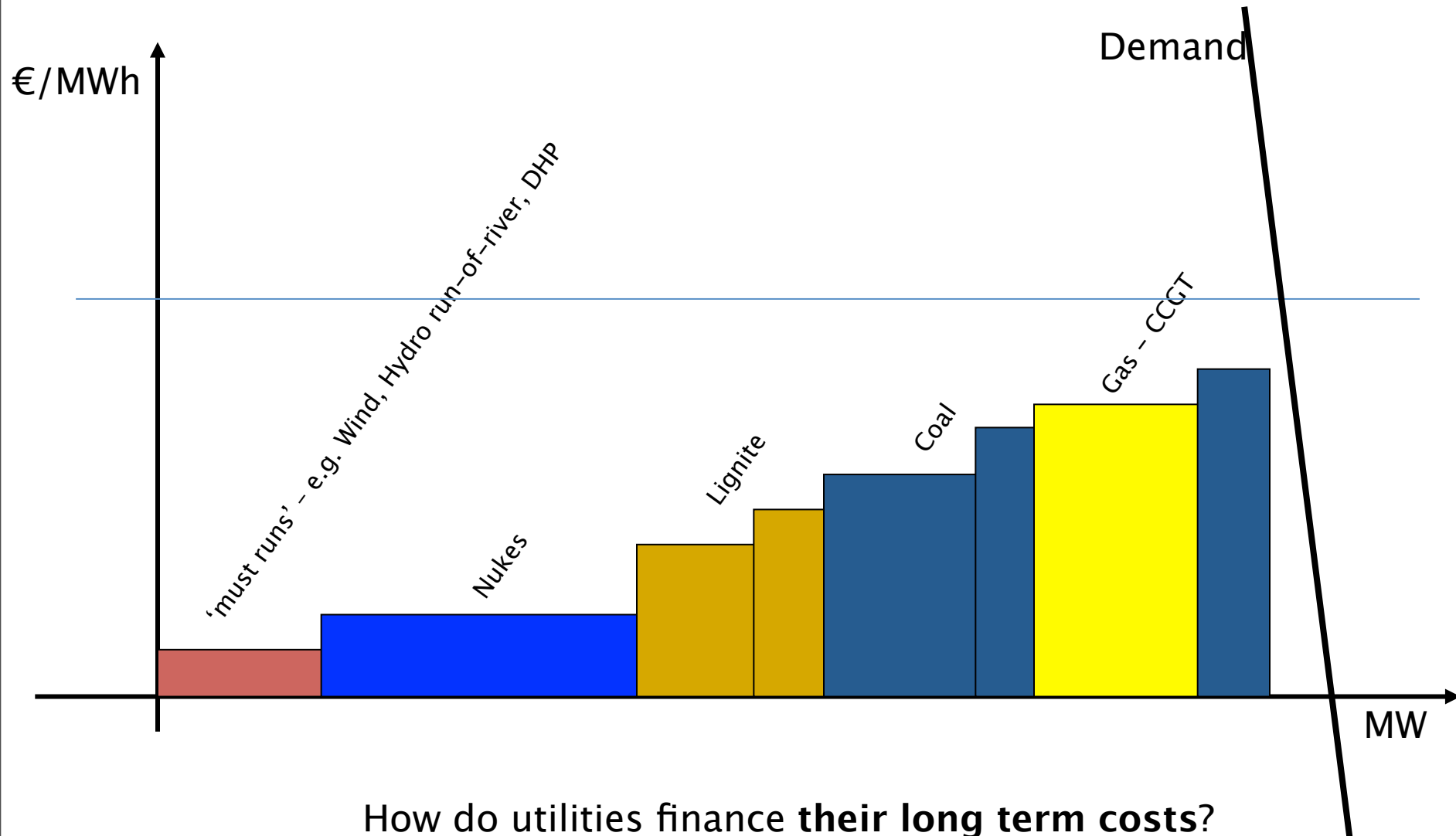


The Merit-Order-Curve reflects a order of Power Plant due to there **short term marginal costs**

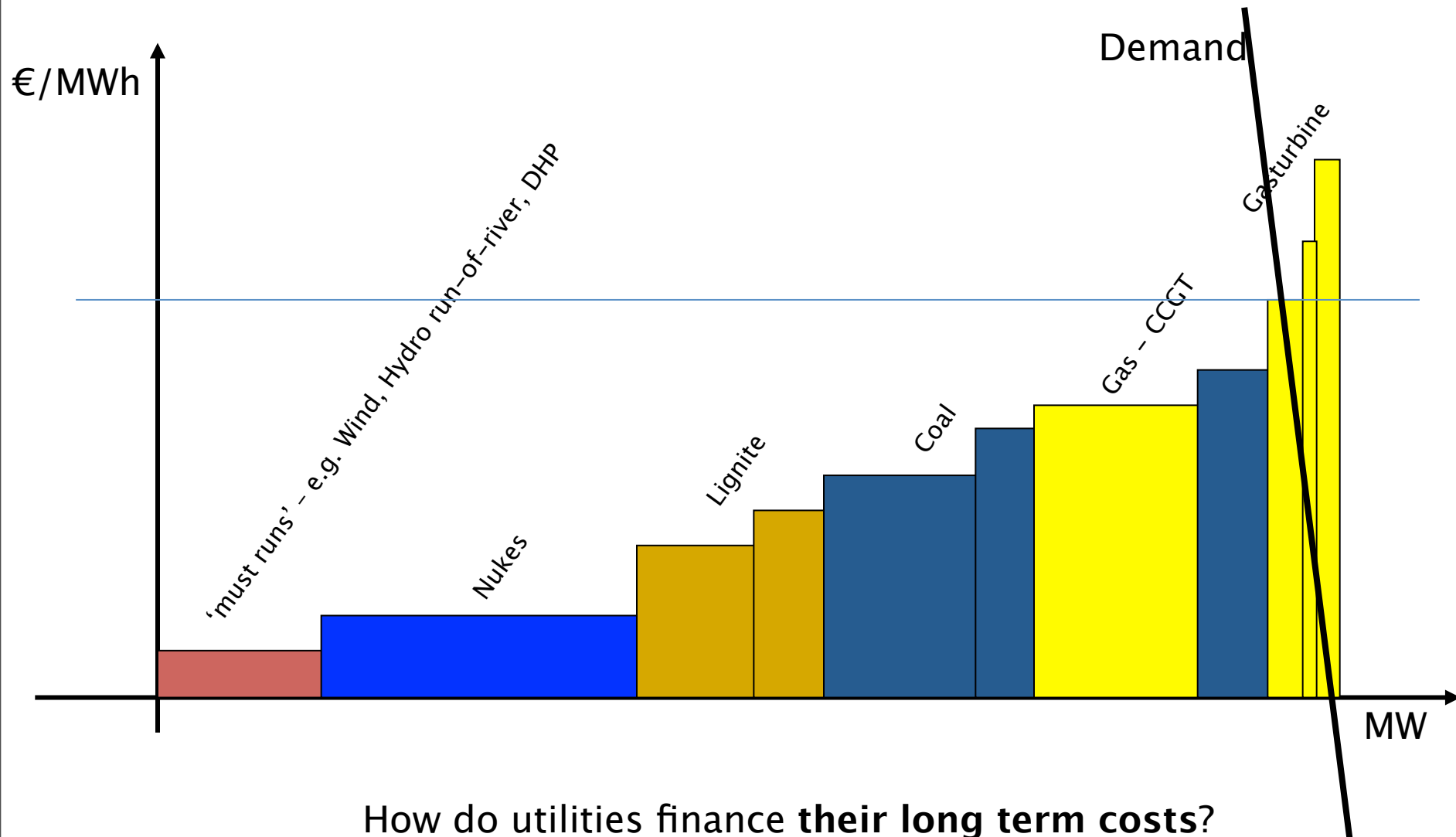


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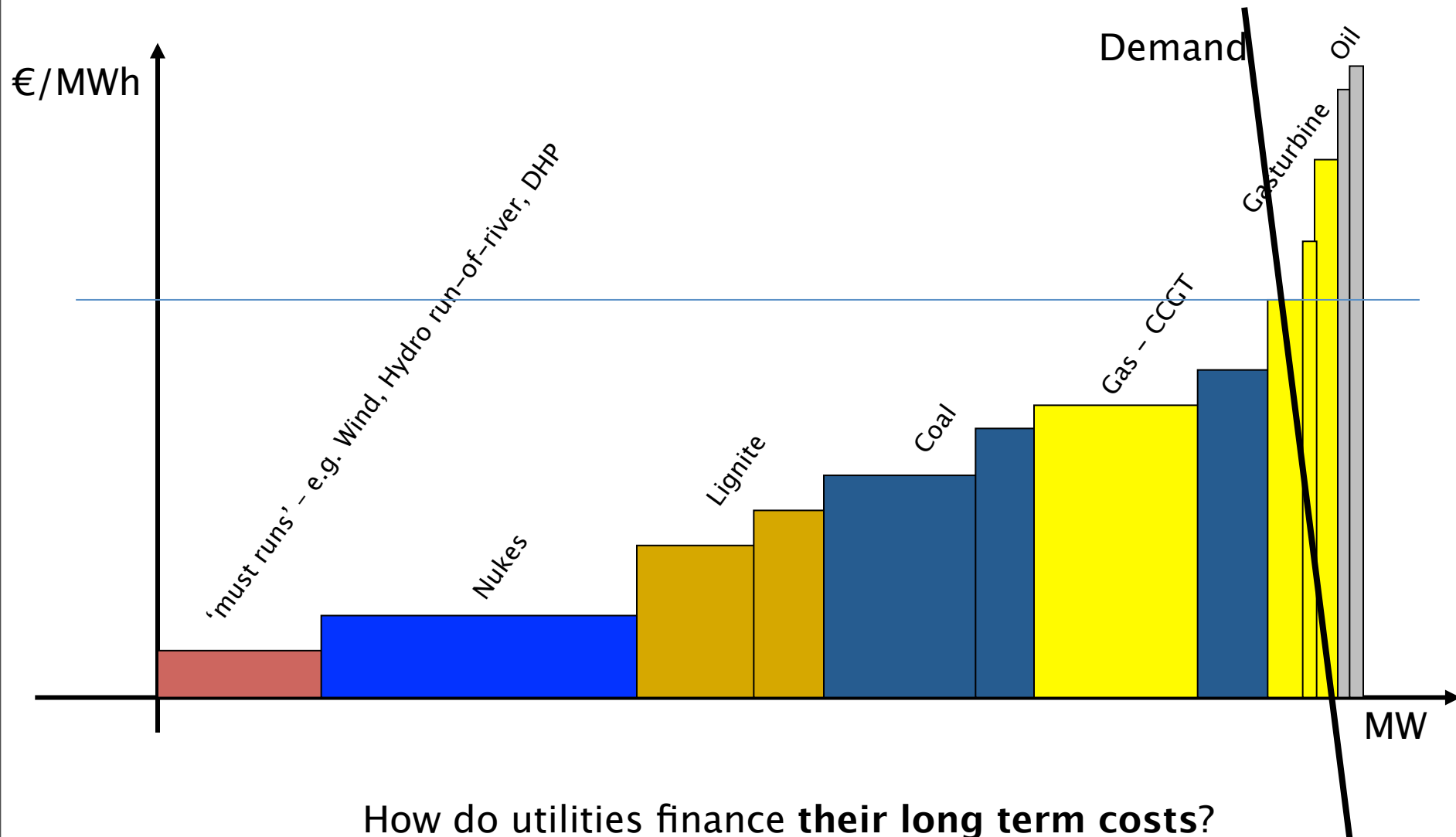
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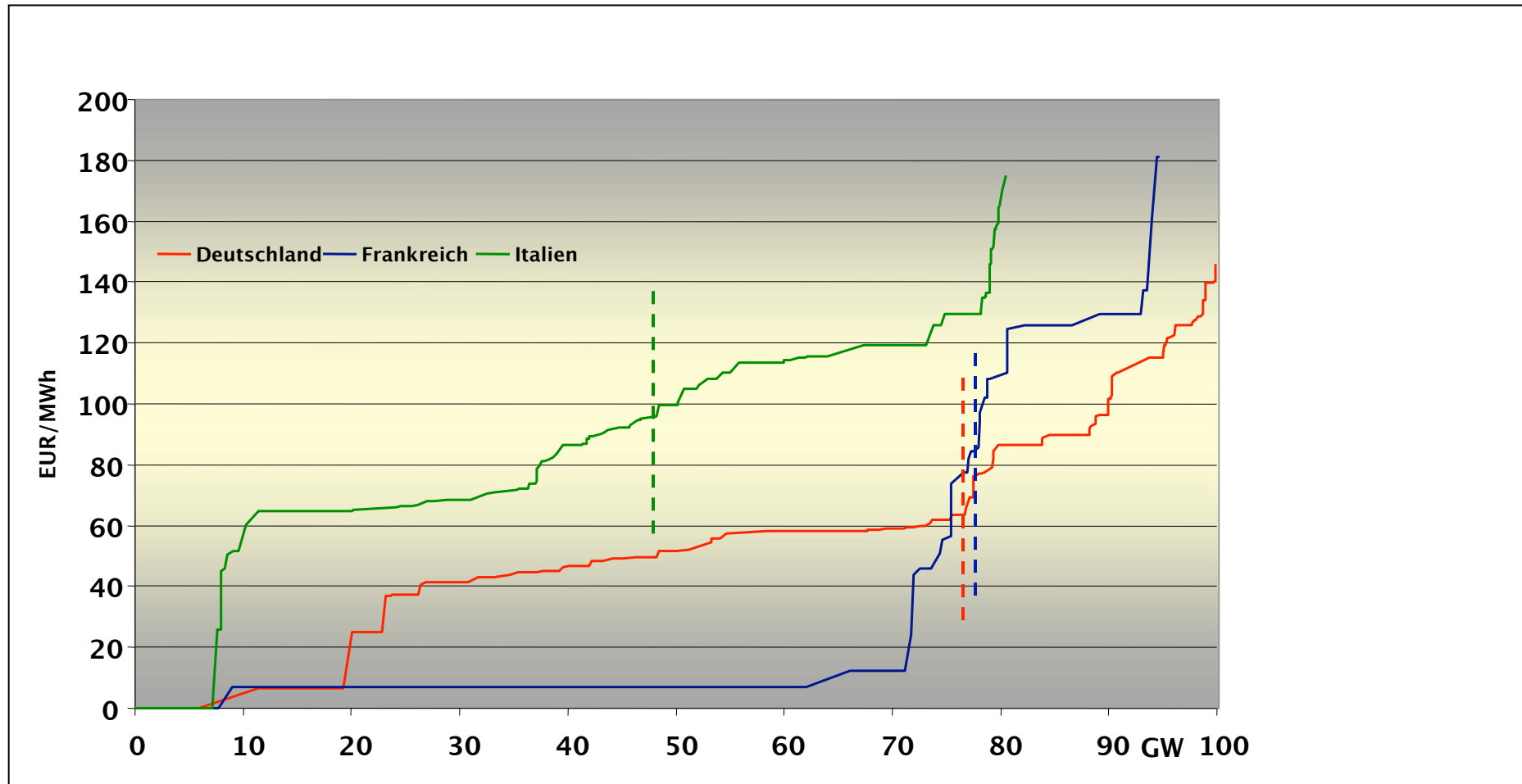
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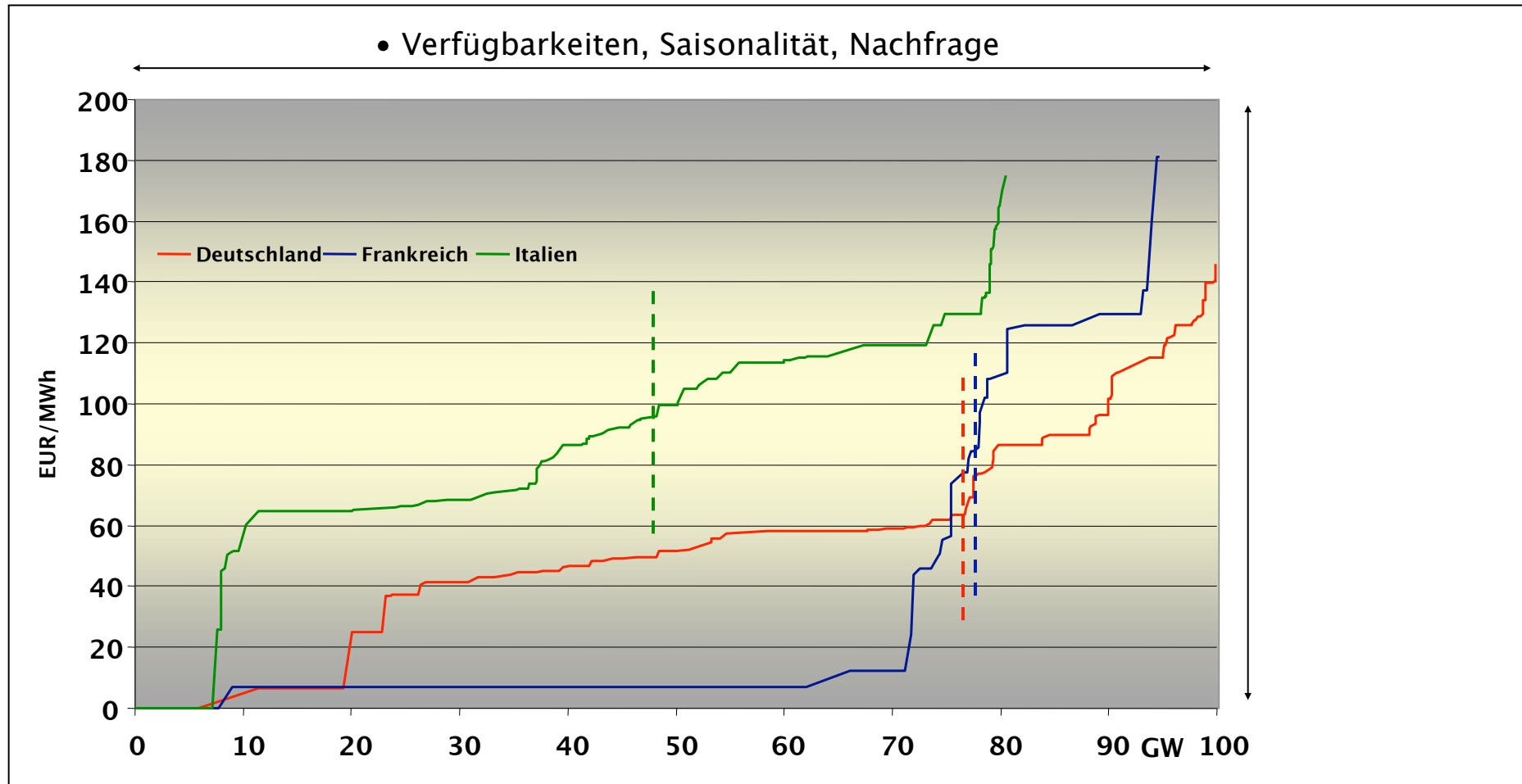
The Merit-Order-Curve reflects a order of Power Plant due to there **short term marginal costs**



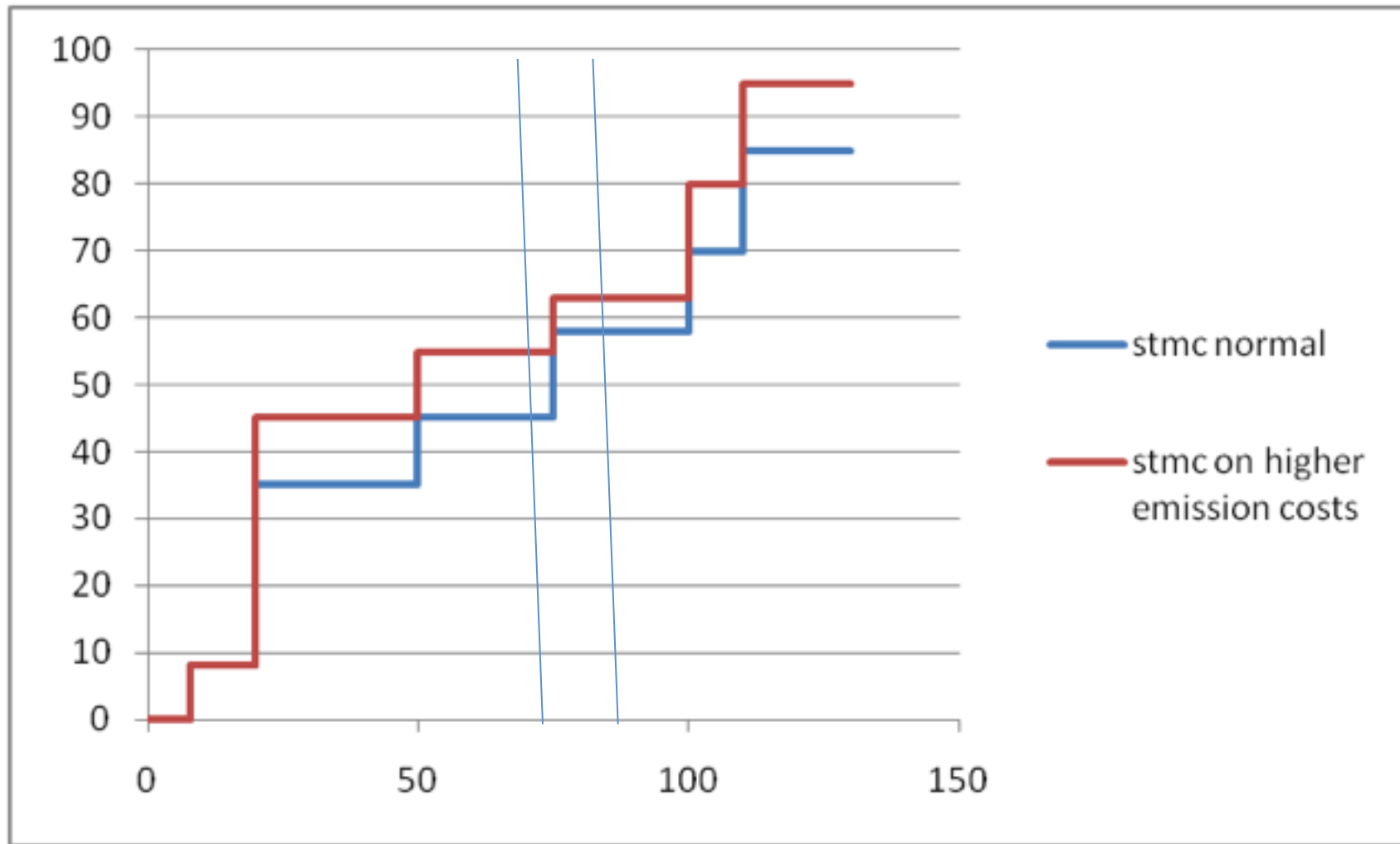
Merit Order Curve depend on the national Power Plant Park

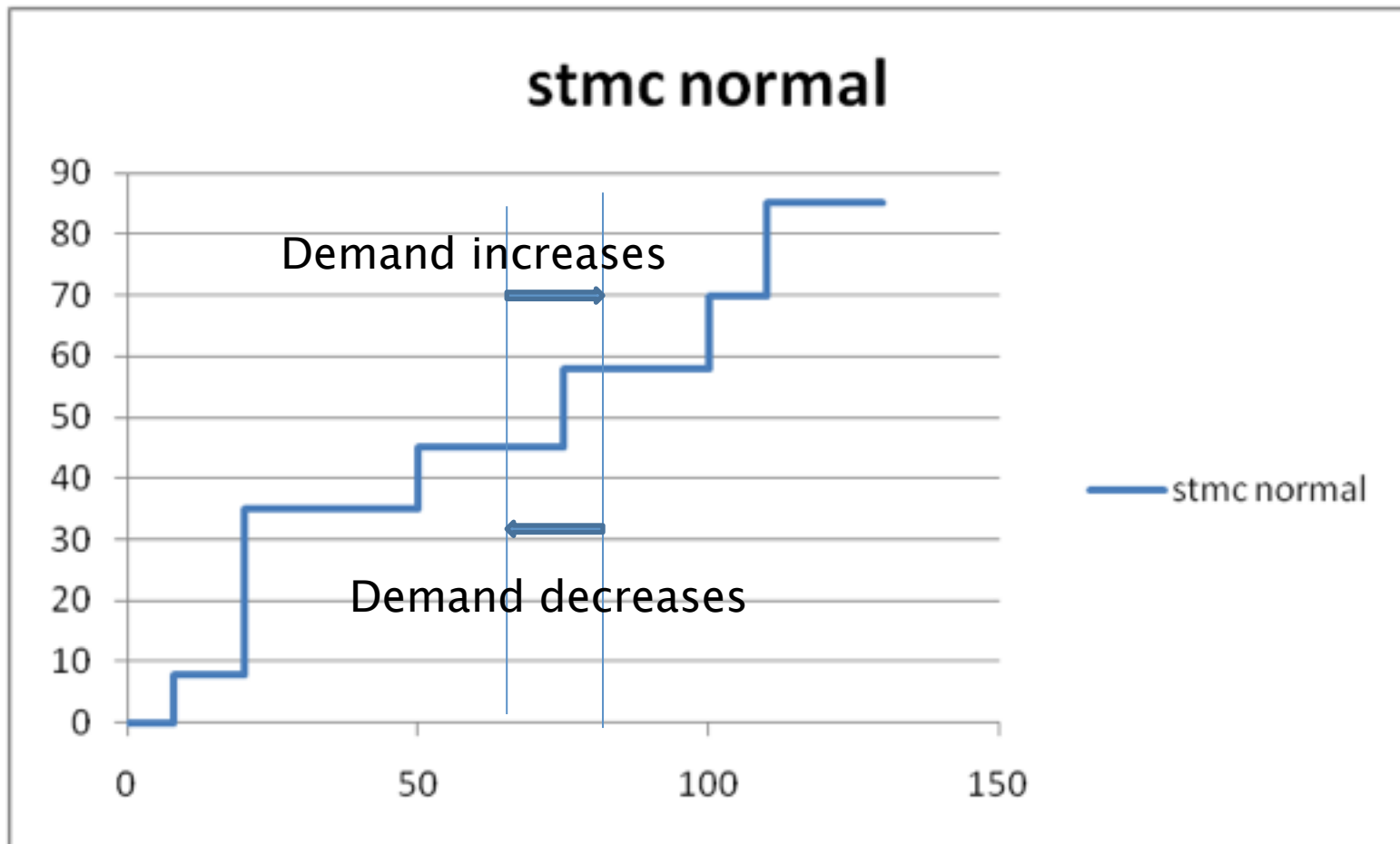


Merit Order Curve depend on the national Power Plant Park

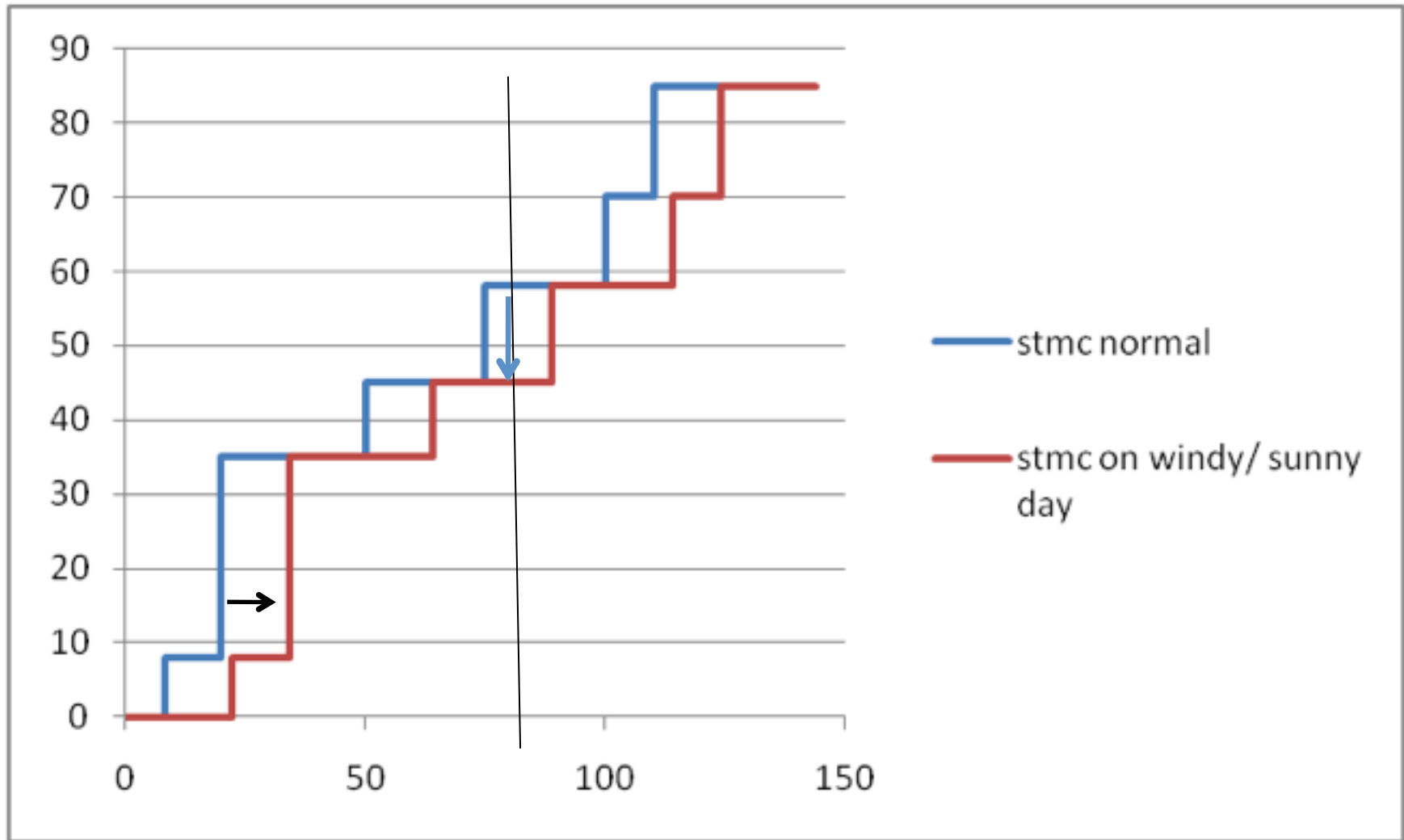


Effect of higher fuels / higher CO2 costs

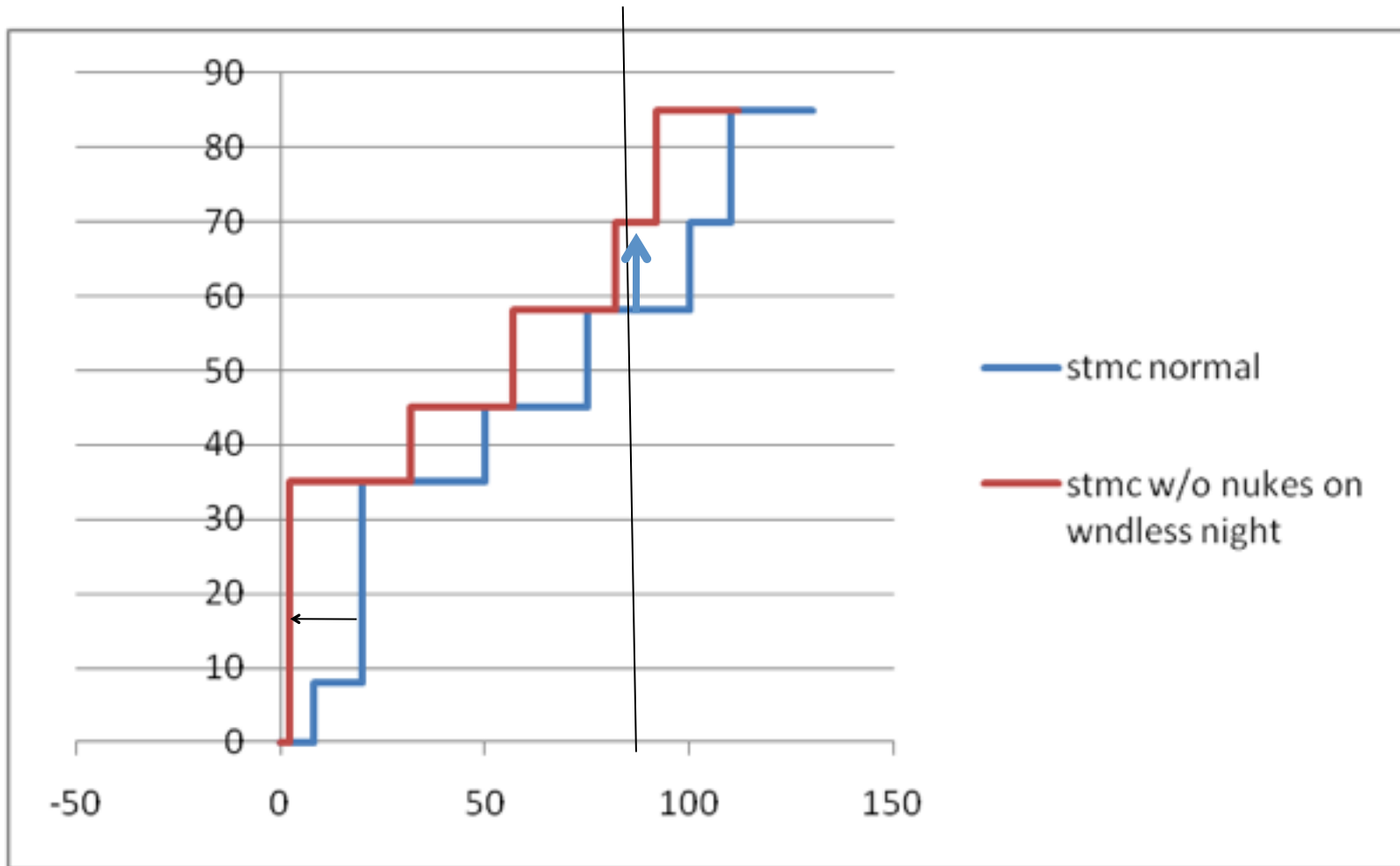




Wind / Sun shifts supply curve



„Ausstieg“ shifts supply curve



Electricity and Politics

Fight for Endesa

- http://www.fundacionfaes.org/record_file/filename/858/00076-00_-_papeles_44_ingles.pdf
- Endesa: Spanish Utility (0% State held in 2004)
- Gas Natural: Spanish Gas Utility
- CNE: Spanish Energy Regulator
- CNMV: Spanish Finance Regulator
- E.on: German Utility
- Acciona: Spanish Construction Company
- ENEL: Italian Utility (31% state-hold)

Fight for Endesa



Fight for Endesa



Fight for Endesa



Fight for Endesa

- January 24th, 2007. The European Commission announced that it will take the Government of Spain to the European Union's Court of Justice because of the "Anti-E.On Decree".
- March 12th, 2007. Enel announced that it controlled 24.98% of Endesa and stated its intention to appoint three Directors, despite the fact that current Spanish legislation prevents foreign state-owned companies from sitting on the Board of Directors and limits their voting power to 3% of the share capital.

Electricity Facts: Value Chain

- Storage: Only indirect (flexible generation)
- Transportation: Over Grids (standardized, Grid-Monopols: TSO) www.swissgrid.ch
www.rwe.de
- Transportation: limited (ca. 1000km) due to energy loss
- Refining: NO chemical processing but voltage transitors
- Production (Generation): Dependent on fuels, different generation
EU27: 28% Nuke, 26% Coal, 24% Gas / US: 45% Coal / China 70% Coal

Electricity Facts

- Demand:
 - dependent on GDP and population (Western Europe, US, 6–7 MWh p.a. per capita)
 - Average EU/ US: 33% Industry, 33% Household, 33% Administration
 - US 4000 TWh / Europe 3500 TWh / China 4000–4500 TWh / Japan 1000 TWh / Russia 1000 TWh
- Market, Standards:
 - Energy – Capacity (maximal Generation) = Energy per time
 - Capacity Unit MW
 - Energy Unit MWh: (1TWh=1'000 GWh=1'000'000 MWh=1'000'000'000 kWh)
 - Price ca. € 50 / MWh
 - Specify Delivery Point and Period (e.g. base load May, RWE Grid)

Electricity Facts

- Market, Exchanges: Regional markets,
 - US: PJM, ERCOT, New England, NY, California, Midwest
www.ferc.gov/market-oversight/mkt-electric/overview.asp
 - Europe: EEX, Nordpool, et al.
www.eex.de
- Market, Players: Utilities, some commodity traders
- Politics: Large political (nationalistic)