

Financing nuclear A competitive solution

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**Nuclear Technology for
the Sustainable Development Goals**



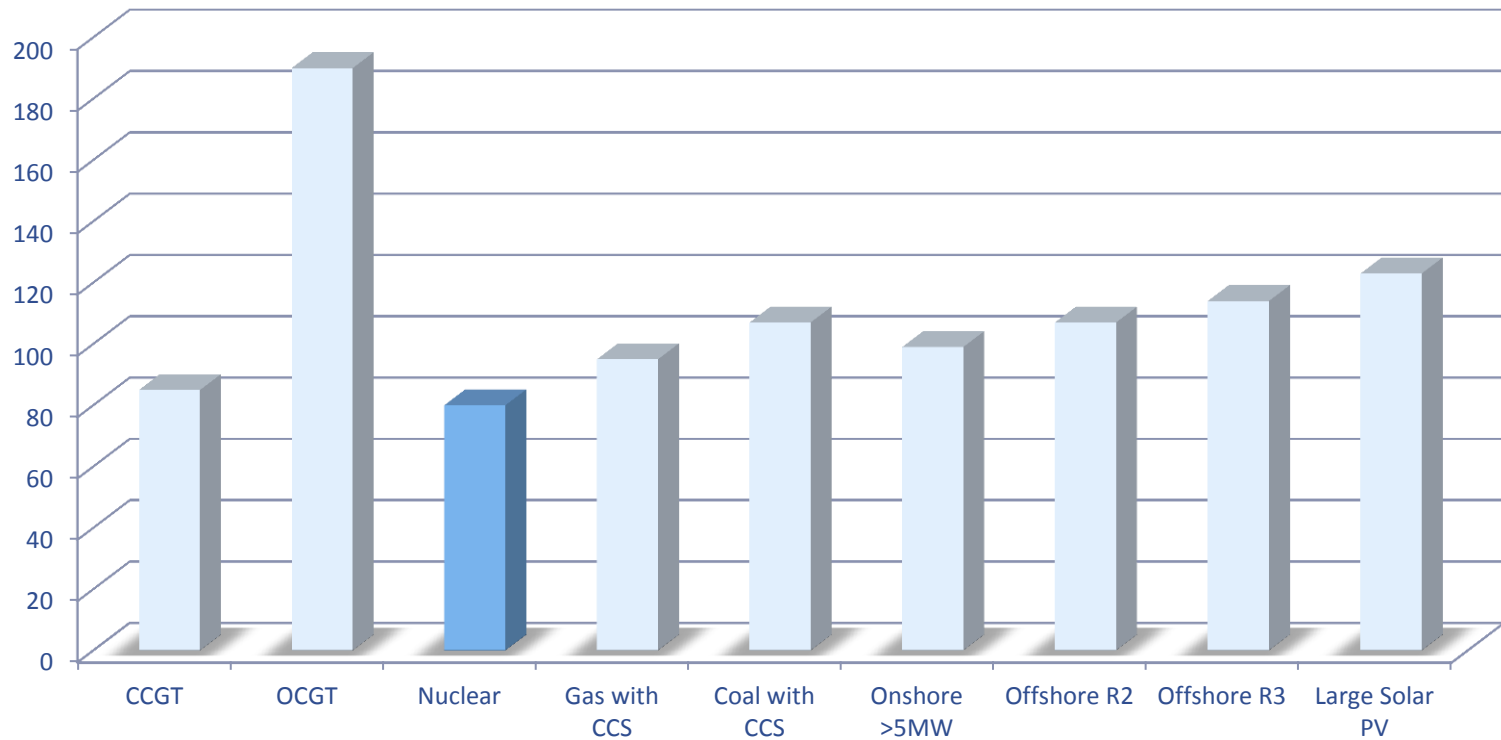
Nuclear and the Sustainable Development Goals (SDGs)

- Access to clean, reliable and affordable energy (SDG #7)
 - Baseload
 - Reliable
 - Affordable
 - Sustainable and modern
- Combat climate change (SDG #13)
 - Low carbon
 - Long term
- Resilient infrastructure, inclusive (SDG #9)
- Global partnerships (SDG #17)

Levelised cost of electricity (LCOE)

- Not perfect!
- Levelised average lifetime cost approach with discounted cash flow method =
 - generating costs (no transmission or distribution, or other externalities inc. carbon pricing etc.) =
 - capital cost (development, construction inc. financing) [high for nuclear] + operational cost [low for nuclear]
 - operating life
 - all cash flows estimated and discounted back to a present value and capacity factors applied for different types of technology.
- Break even point after paying debt and equity investors their agreed return.

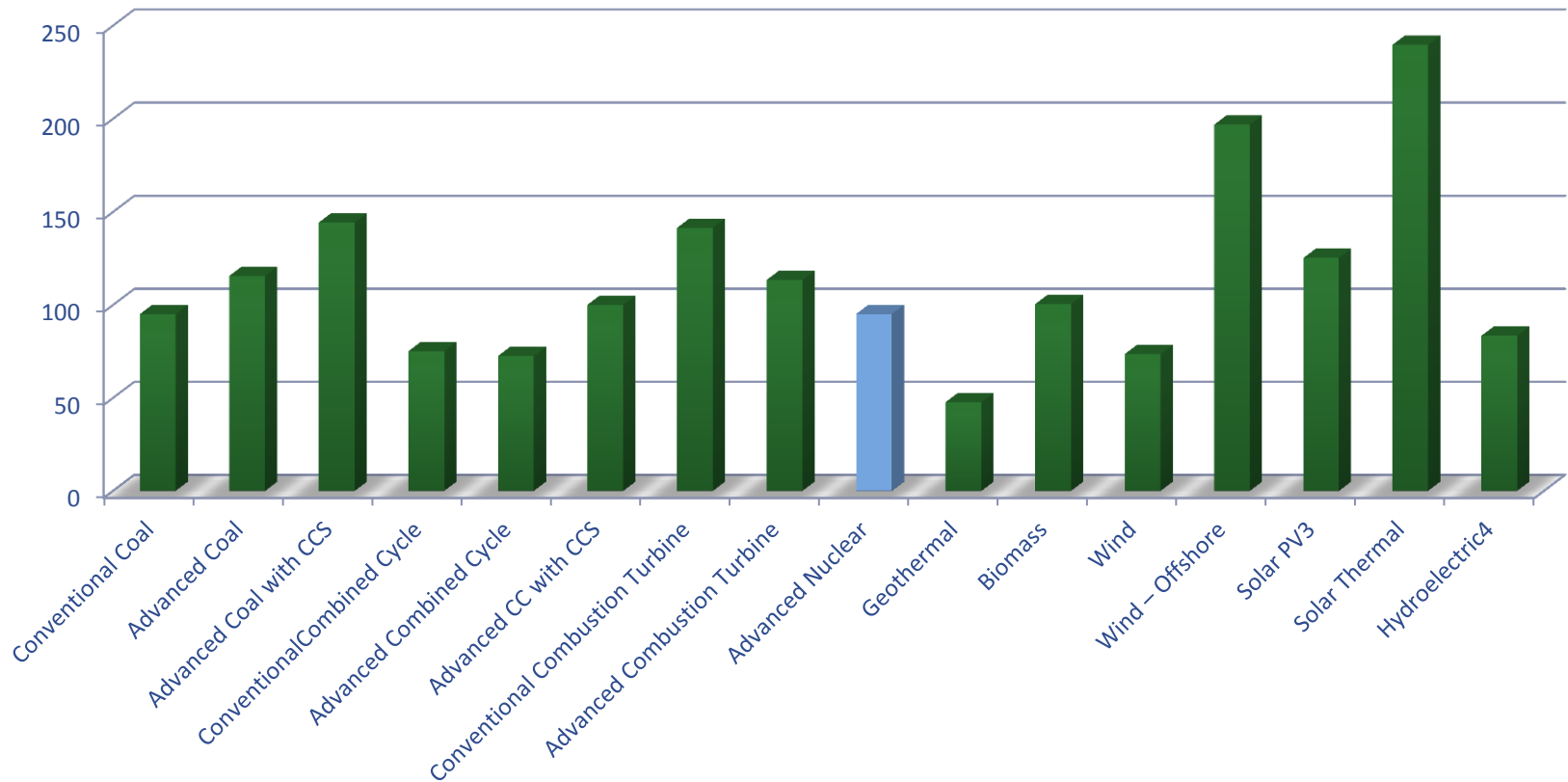
(LCOE) (UK)



DECC: 2019 Generation 2013 £/MWh

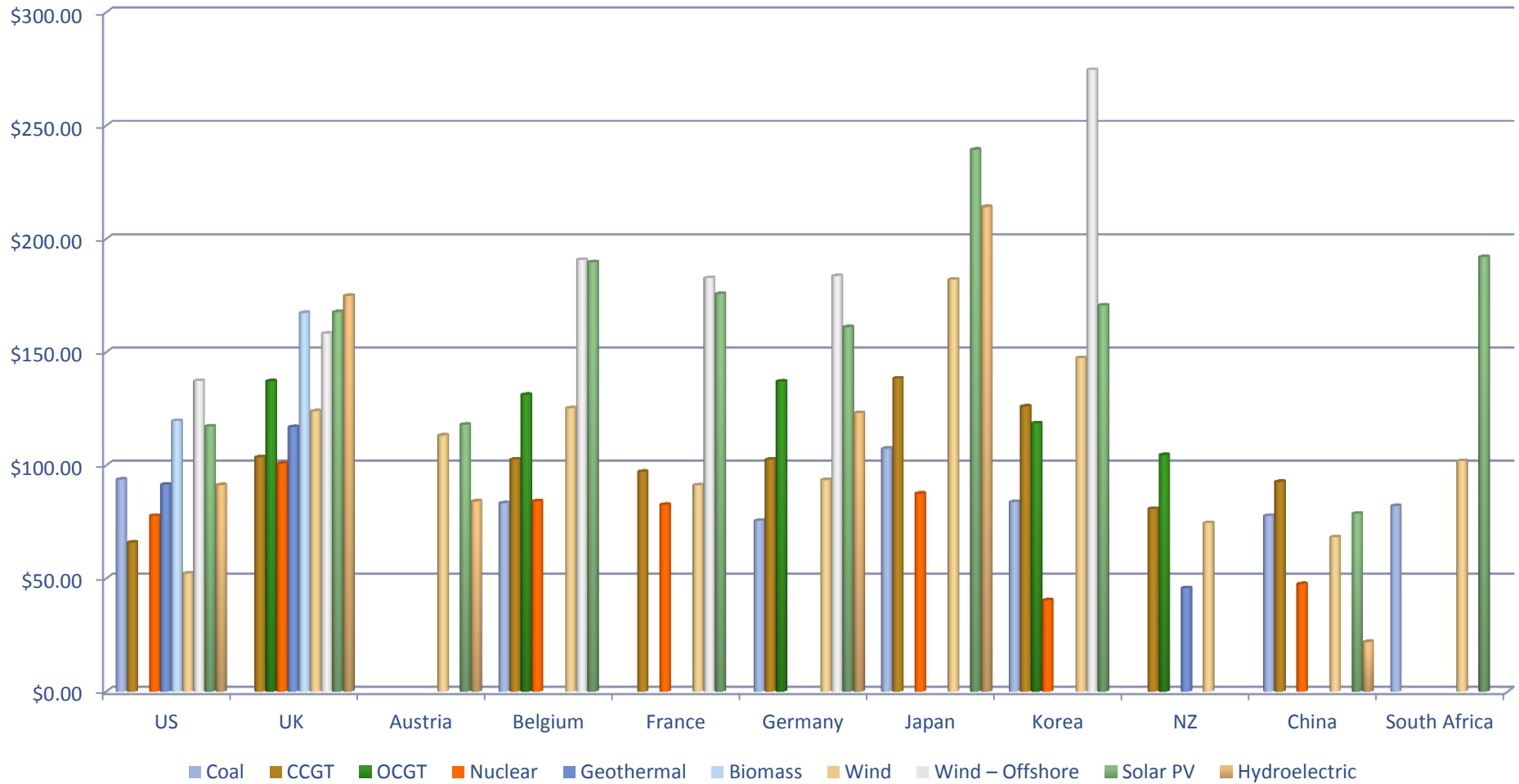
LCOE (US)

Total system LCOE



US Energy Information Administration
Est: 2020 generation 2013 \$/MWh

LCOE



Projected Costs of Generating Electricity IEA and NEA report 2105 edition
 2013 US\$ 7% discount factor

Financing the Capital Costs



Global trends

- Clean energy investment rose 7 fold from 2004 - 2011
- 2012 - start of seeing net investment in renewables outpacing fossil fuels
- With carbon targets to be met coal is being phased out in a number of countries
- However, coal remains a key energy generator in a number of countries
- Nuclear expected to remain around 6% of the global market
- New nuclear build in China and India continues to grow

Conclusion

- Low carbon
- Baseload
- High Capital Investment
- Low O&M
- Financing jigsaw

Thank you!

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