

UK Fossil fuel supply in a 1.5°C transition

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The IEA Net Zero by 2050 report

New evidence on consumption budgets for oil

Annex C

Fig. 1.1 Global oil consumption

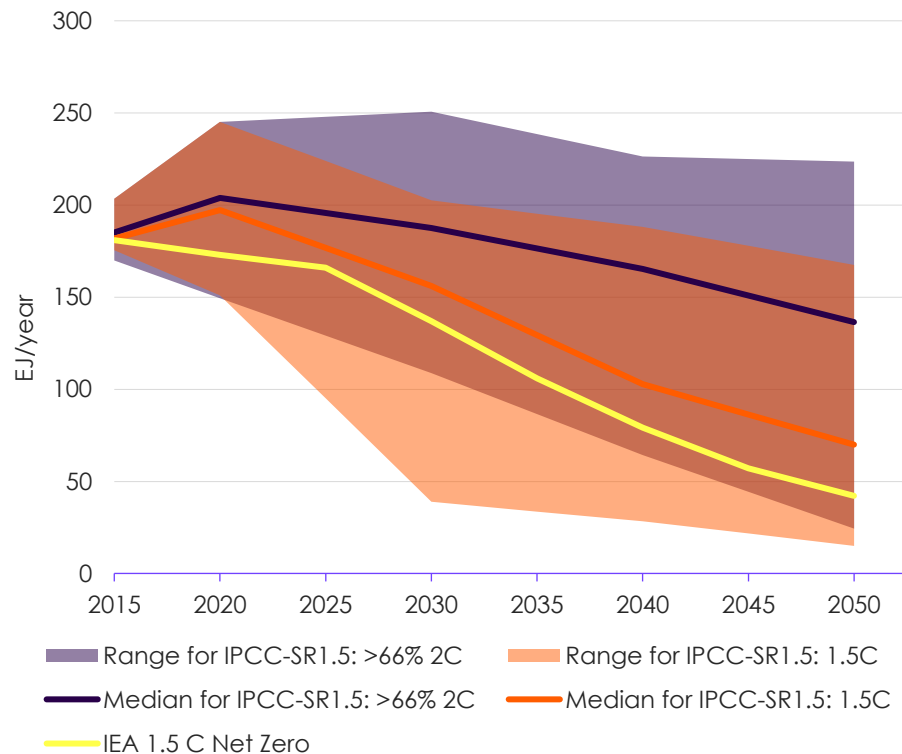
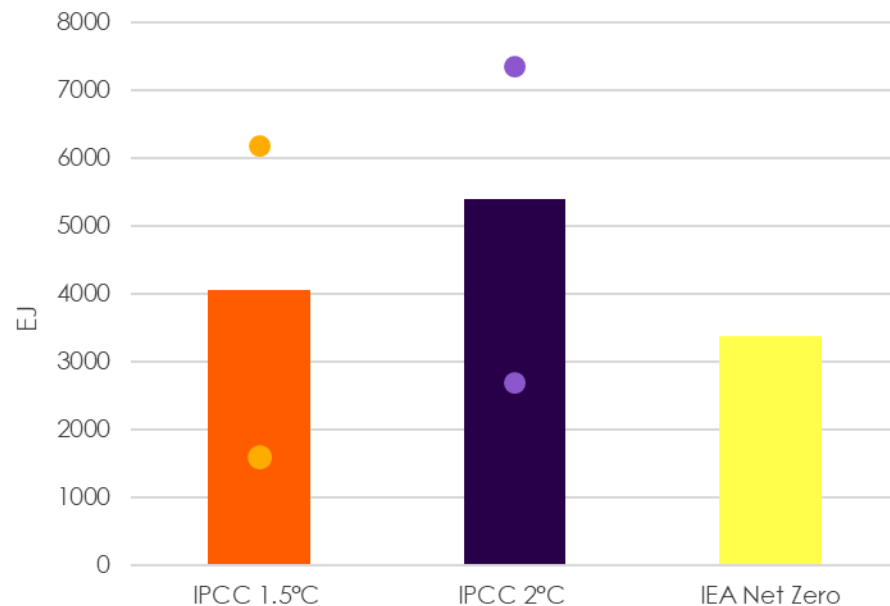


Fig. 1.2 Cumulative oil consumption to 2050



Sources: IPCC (2018) *Special Report on Global Warming of 1.5°C*; IEA (2021) *Net Zero by 2050*

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New evidence on consumption budgets for gas

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Fig. 1.3 Global gas consumption

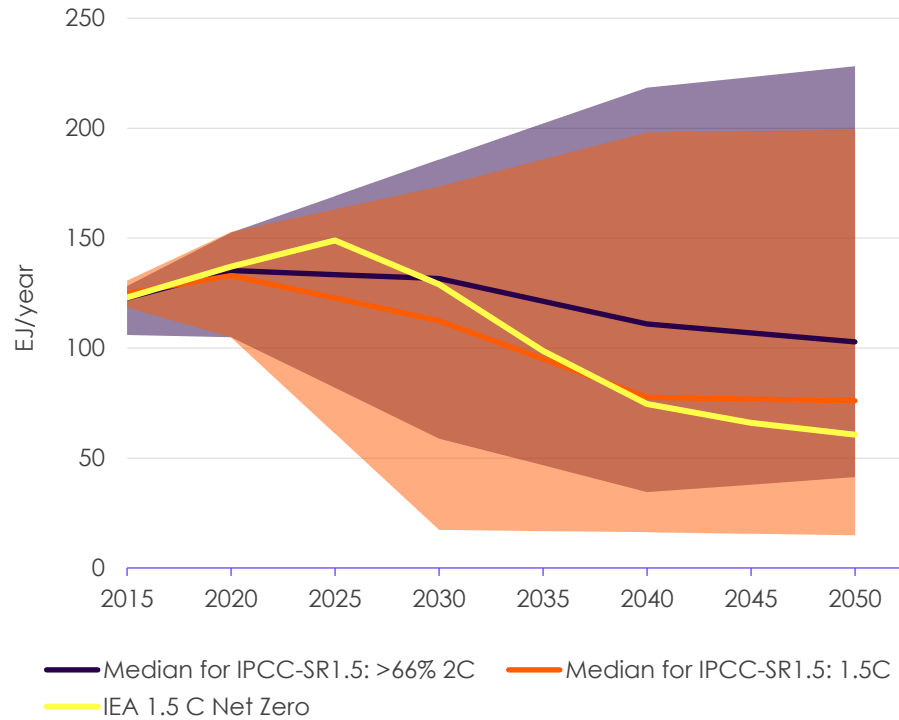
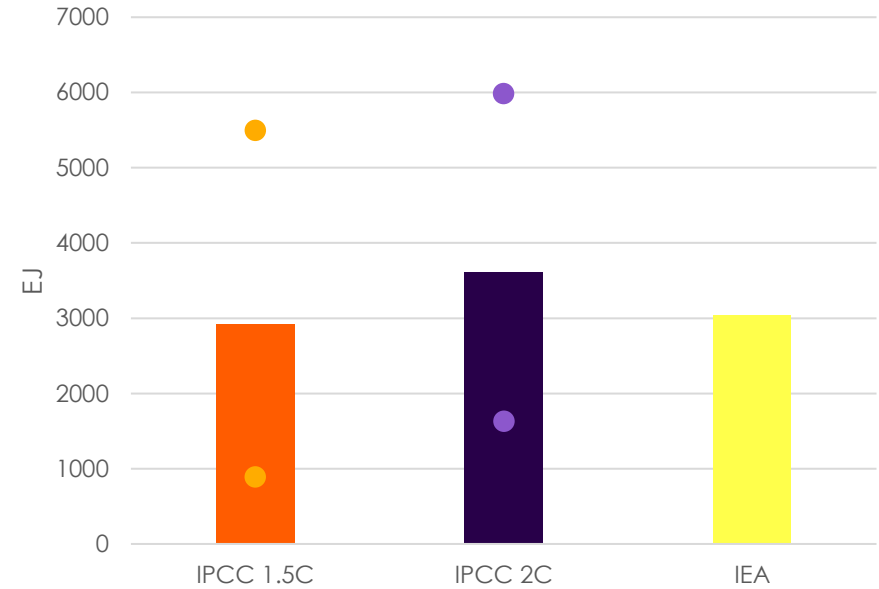


Fig. 1.4 Cumulative gas consumption to 2050



Sources: IPCC (2018) *Special Report on Global Warming of 1.5°C*; IEA (2021) *Net Zero by 2050*

UNEP Production gap

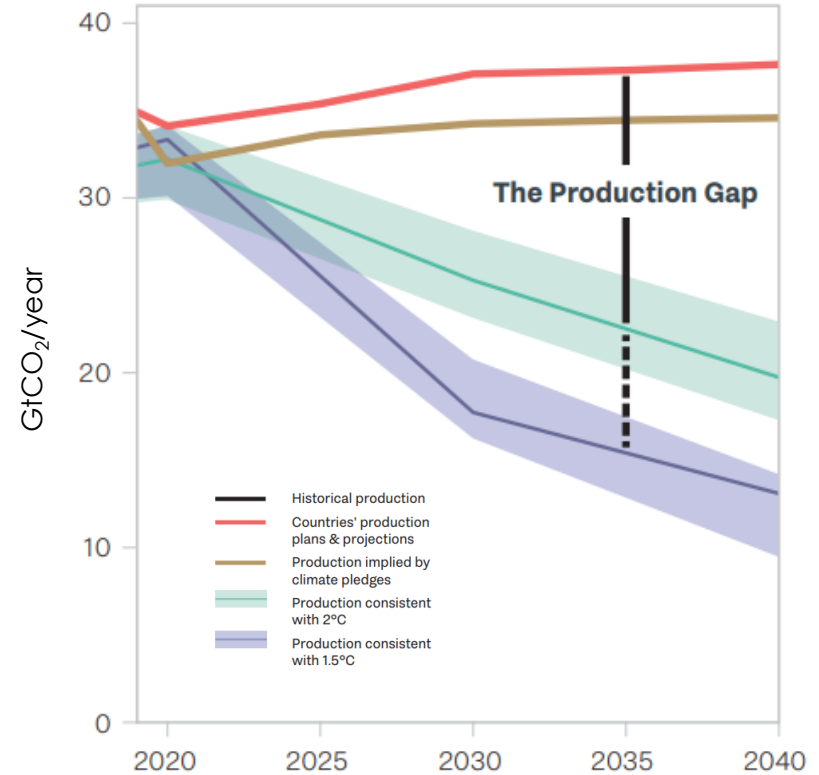
Existing plans for global fossil fuel production Annex C

The IEA has said that 1.5C implies no new oil or gas fields after 2021

The UNEP Production Gap report concludes that:

- Governments plan to produce more than twice the amount of fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C
- Most major oil and gas producers are planning on increasing production out to 2030 or beyond

Fig. 1.5 Global fossil fuel production



Source: UNEP (2021) Production Gap

Constraining global oil and gas supply

An unlikely approach, as it would require large-scale coordination.

There are also risks:

- Constraining production would lead to very high fossil fuel prices. This would likely cause another energy affordability crisis.
- Potential increase coal use and increase global emissions.

Demand-driven policy

Where fossil fuel demand falls due to climate policy, prices would fall. This would reduce the financial viability of new fields, meaning that fewer would go ahead.

- In this way, demand-side action would lead to reduced fossil fuel production, with a lag. Fossil fuel prices could be persistently low (e.g. oil at \$25-35/barrel).
- This raises the possibility that low fossil fuel prices could undermine climate action in some parts of the world.
- Continued allowed investment in new fields, followed by persistent low prices could also mean a significant stranding of assets, with the potential for a disorderly transition as a result.

Demand-driven policy supplemented by supply constraints

A demand-side approach should be the primary tool to achieve an alignment with climate commitments.

However, supply-side constraints could contribute to mitigating some of the risks associated with demand-side policies alone.

- This approach would reduce the converse risk that production assets are developed but then need to be stranded.
- This approach should not be so tight as to cause the very high fossil fuel prices.

The importance of different lenses

- Given consumption budgets, would the UK be well positioned to continue supplying oil and gas during the transition?
- How do we minimize the risk of increasing global emissions?
- What are the implications for UK oil and gas production?

We consider these questions through various lenses:

- Upstream emissions
- Cost minimization
- Energy security
- Leadership and international cooperation

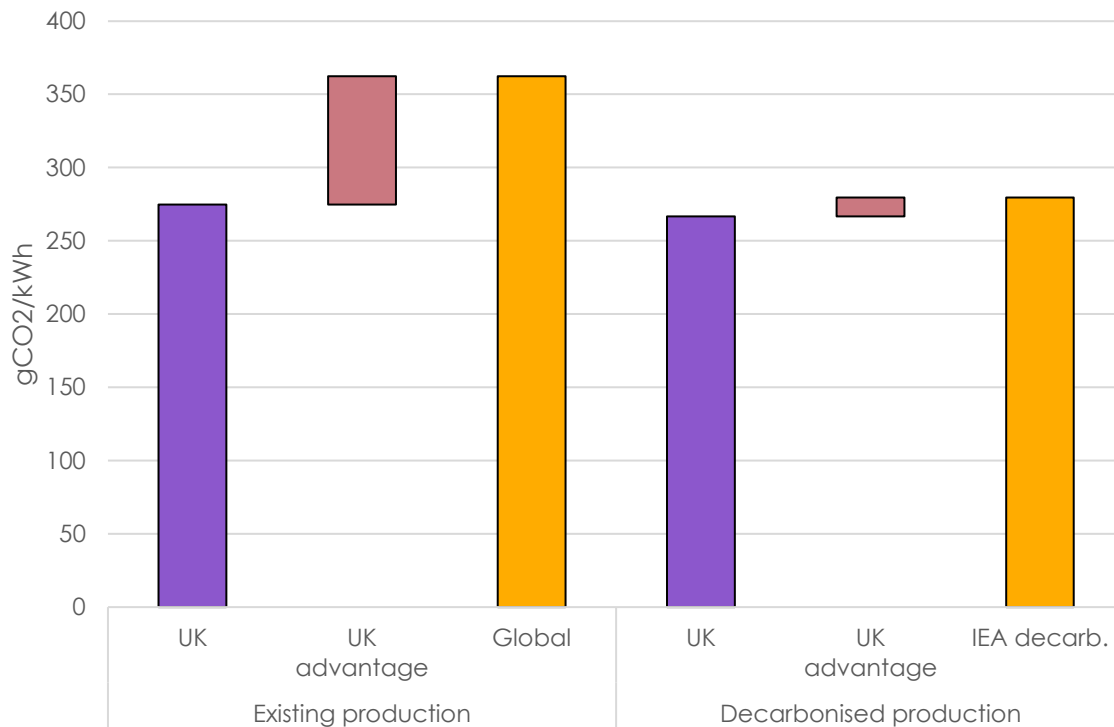
Is the UK well placed to supply gas in a 1.5°C and 2°C scenario?

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Oil upstream emissions

- UK oil production has lower upstream emissions than the global average.
- This will likely evolve as other countries decarbonise their production.
- Should UK production increase oil consumption globally, this would push up global emissions.
- The lifecycle emissions savings of low UK upstream emissions would be offset if 25% of UK production increased global consumption.

Fig. 2.1 Lifecycle emissions of UK and global production



Sources: CCC analysis, IEA (2021) Net Zero by 2050

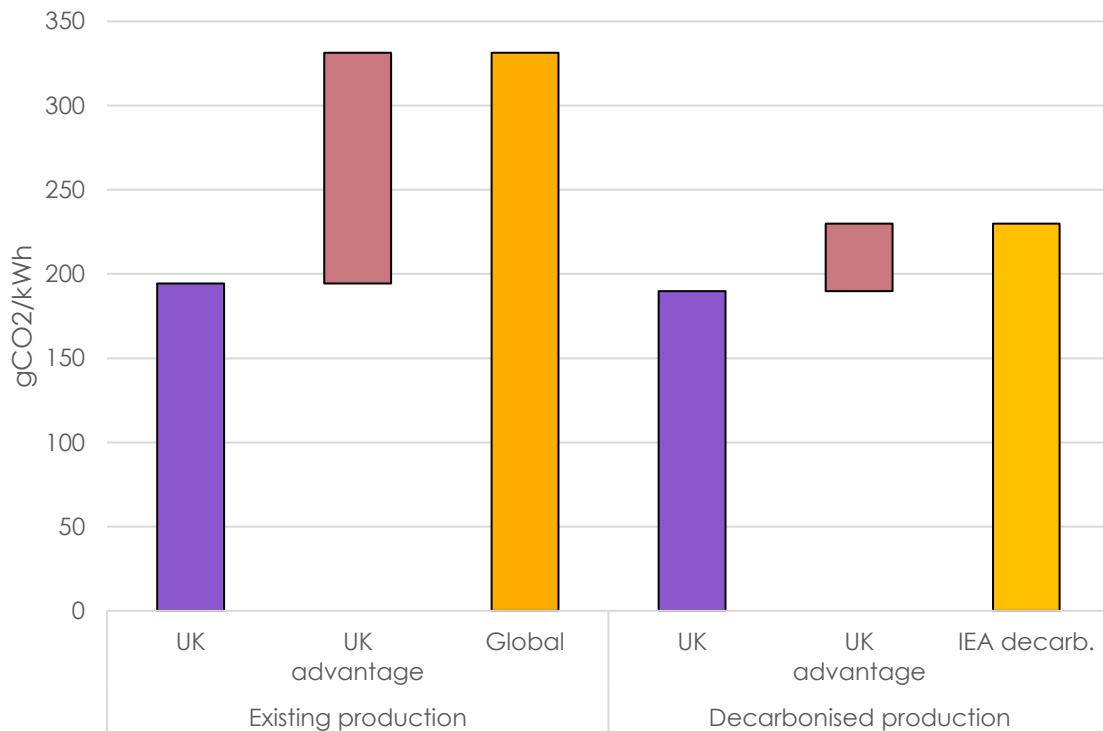
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Upstream emissions

- UK gas production has significantly lower upstream emissions than the global average. As such, UK production could contribute to emissions savings.
- This will likely evolve as other countries decarbonise their production, but savings remain important.
- Should UK production increase gas consumption globally, this would push up global emissions.
- The lifecycle emissions savings of low UK upstream emissions would be offset if 40% of UK production increased global consumption.

Fig. 2.2 Lifecycle emissions of UK and global production



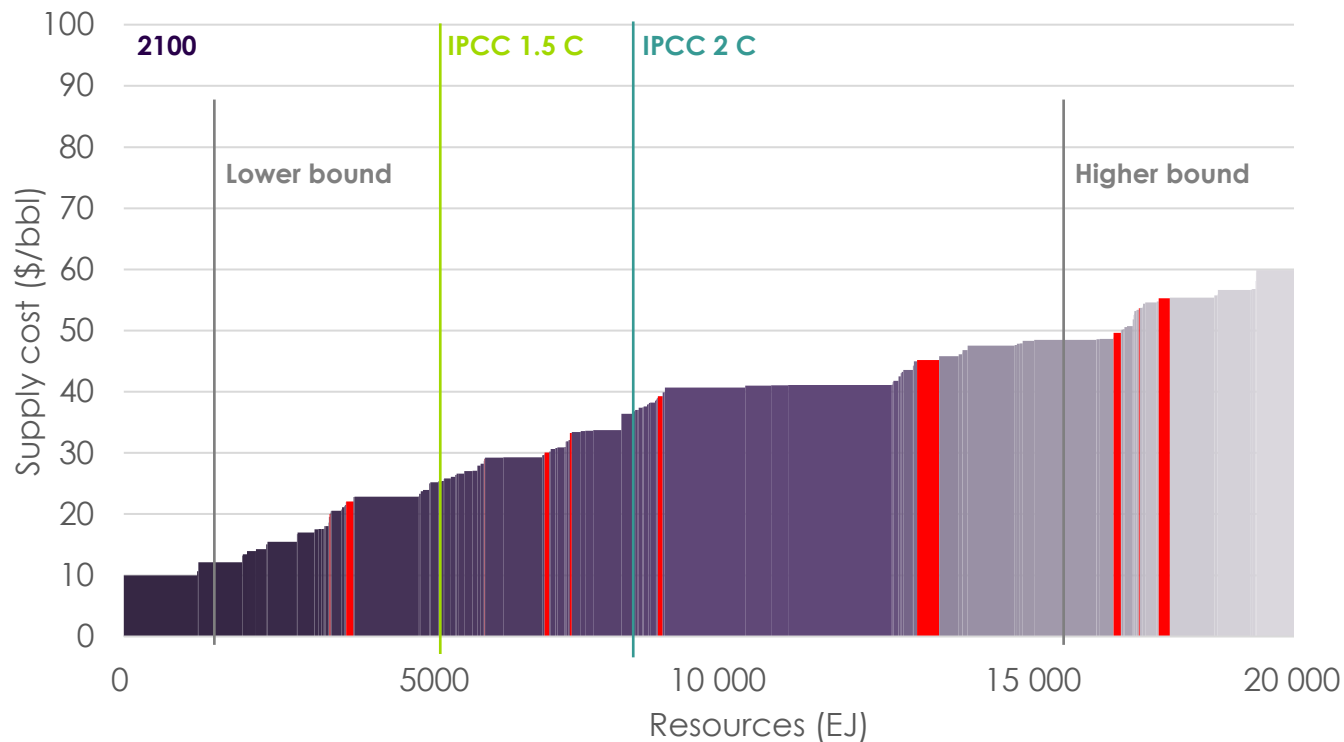
Sources: CCC analysis, IEA (2021) Net Zero by 2050

Is the UK well placed to supply oil in a 1.5°C and 2°C scenario?

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Costs of oil

Fig. 2.3 UK reserves in global supply curve



Note: the chart does not include resources beyond 20 000 EJ, however additional resources could be untapped.

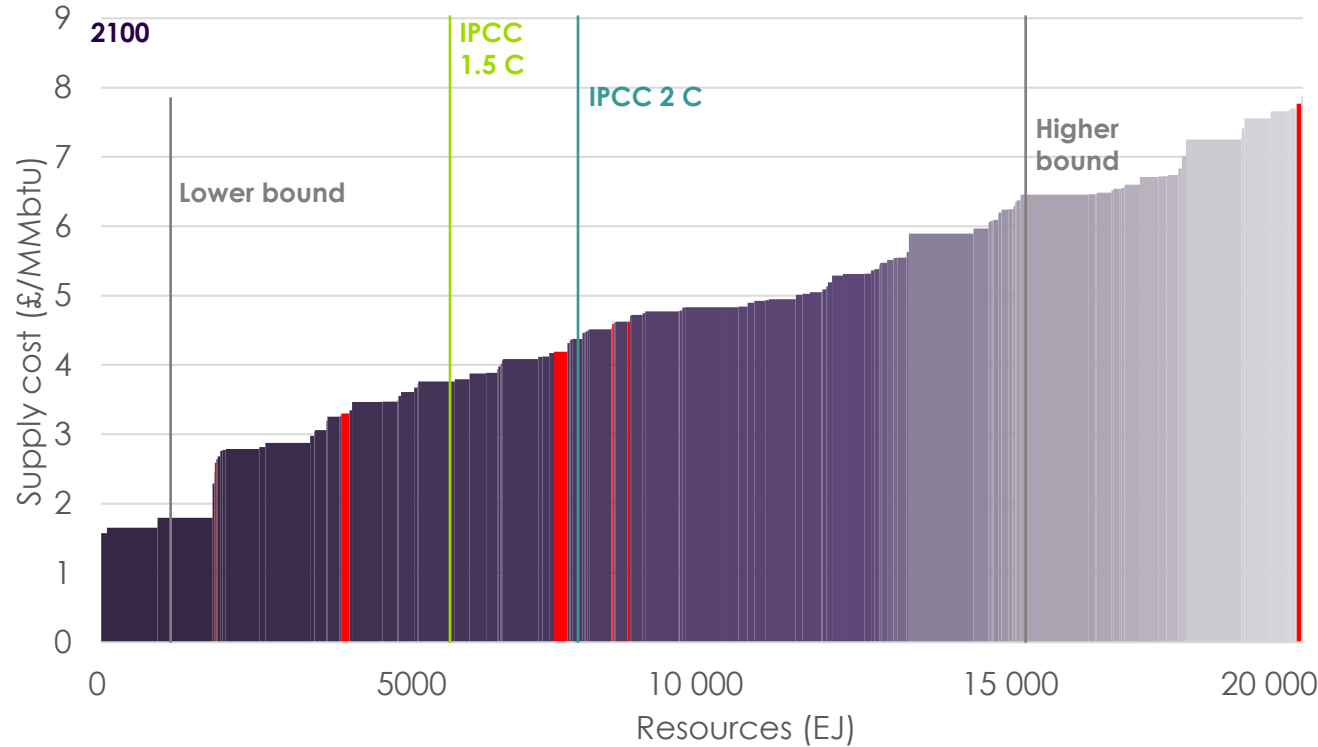
Sources: CCC analysis, Welsby, D., Price, J., Pye, S. et al., (2021) *Unextractable fossil fuels in a 1.5°C world*. Nature 597, 230–234

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Fig. 2.4 UK reserves in global supply curve



- UK gas resources
- Non-UK world gas resources

Note: the chart does not include resources beyond 20 000 EJ, however additional resources could be untapped.

Sources: CCC analysis, Welsby, D., Price, J., Pye, S. et al., (2021) *Unextractable fossil fuels in a 1.5°C world*. Nature 597, 230–234

UK policy on oil and gas

Climate Compatibility Checkpoint

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INTERNATIONAL DIMENSION

