

The Case for Developing UK Resources

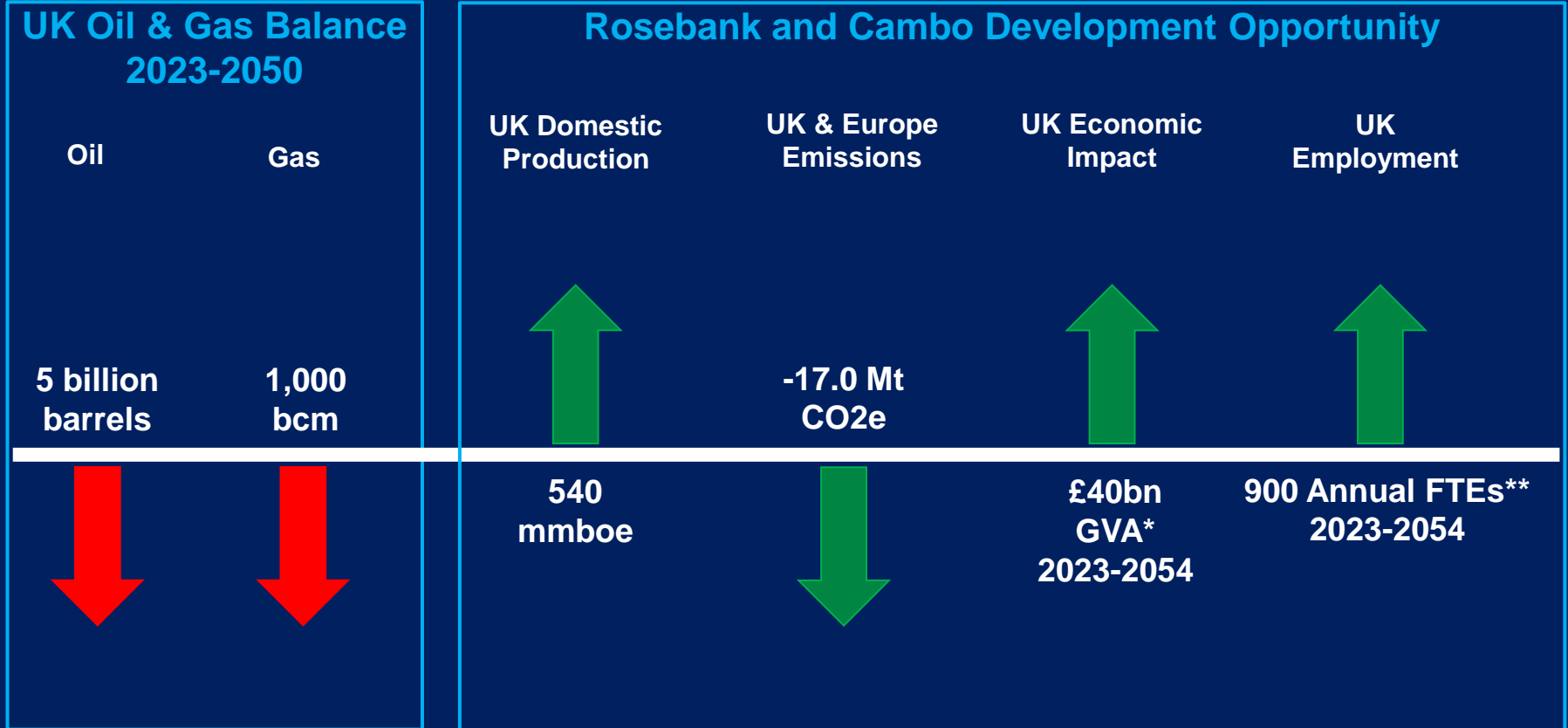
Energy security, emissions, economy and jobs

June 2023

Wood
Mackenzie



The UK has a widening oil & gas deficit, but material opportunities remain



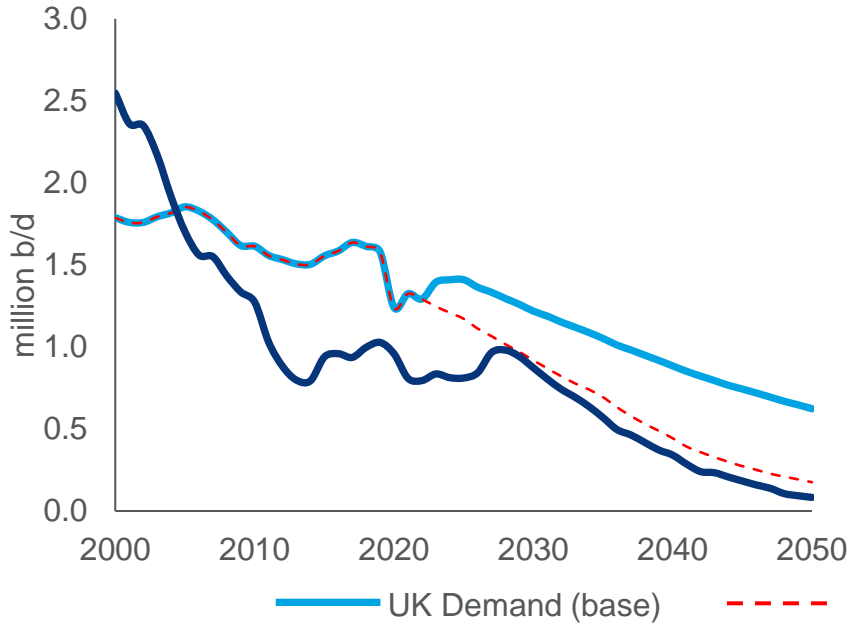
Source: Wood Mackenzie

*GVA: Gross Value Add / **FTEs: Full Time Equivalents (jobs)

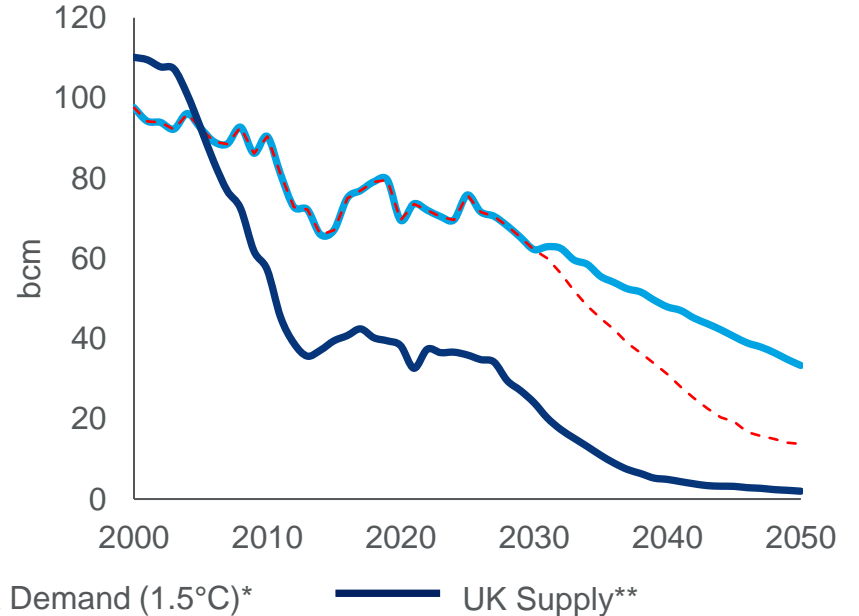
The UK remains a net oil and gas importer even under a 1.5°C case

Between 2023 and 2050 the oil and gas deficit is 5 bnbbbl and 1,000 bcm respectively

UK Liquids Supply and Demand (million b/d)



UK Gas Supply and Demand (bcm)

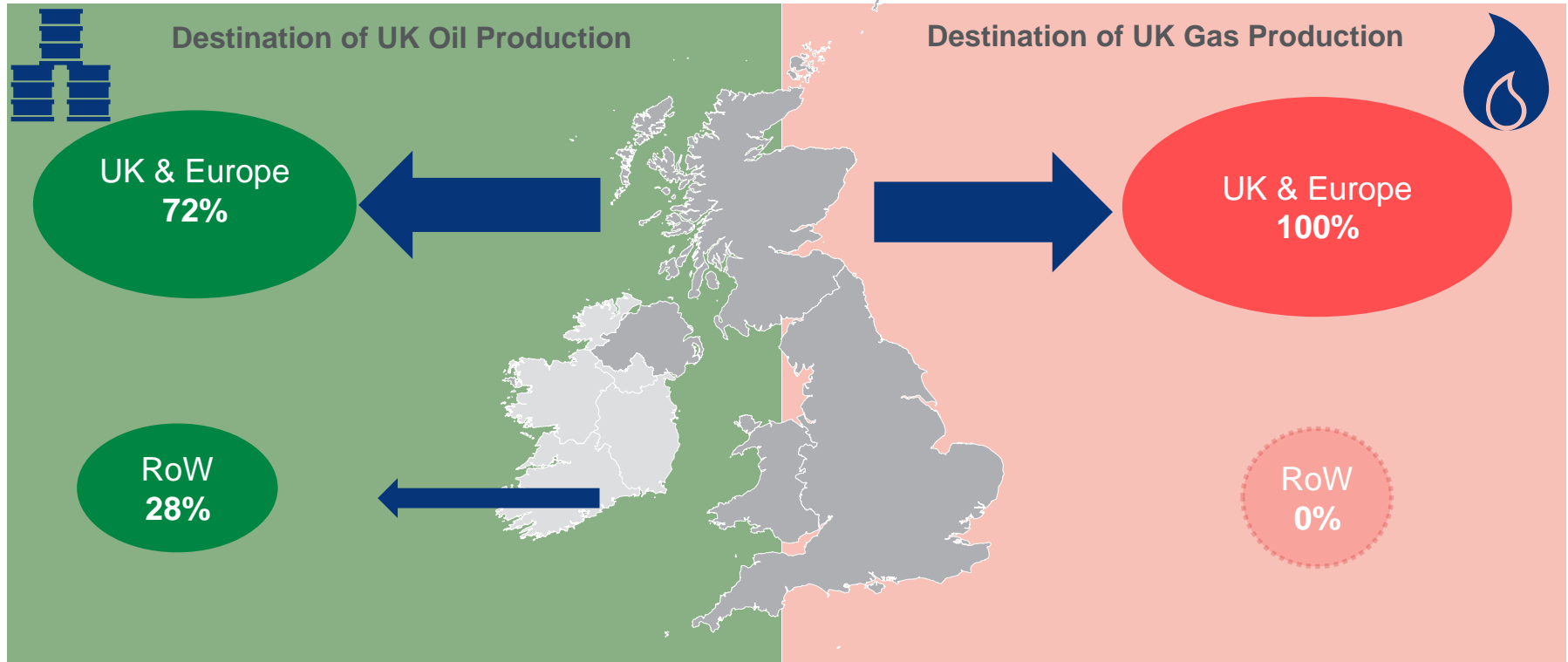


Source: Wood Mackenzie Energy Transition Tool, Lens Upstream, Oil & Gas Supply Tools

*UK Demand to meet 1.5°C warming. **UK Supply includes onstream, under-development, pre-FID commercial, reserve growth and YTF

The UK plays a critical role in the integrated European energy market

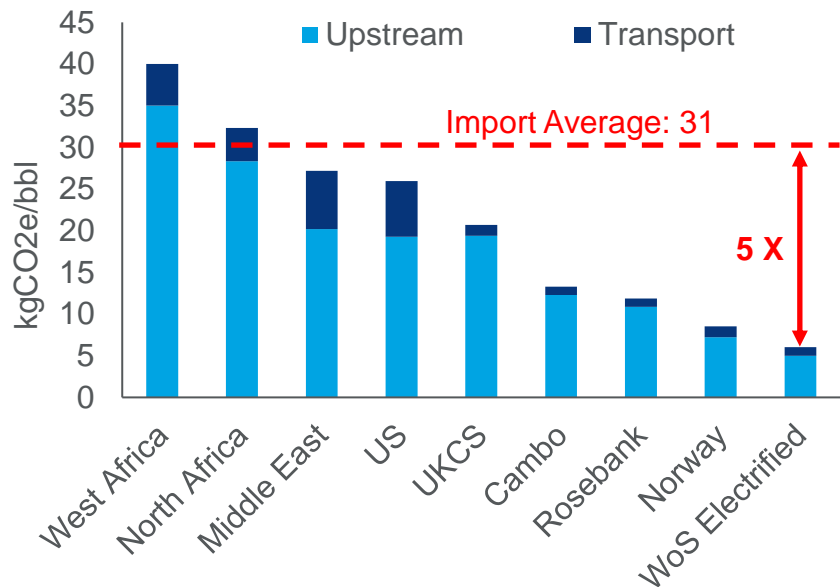
>70% of UK oil production is consumed in the UK & Europe and 100% of the gas production



UK oil and gas production has materially lower emissions than imports

Oil imports would have 500% more emissions than oil from Rosebank & Cambo electrified

Emissions of delivered* barrels (kgCO₂e/bbl)



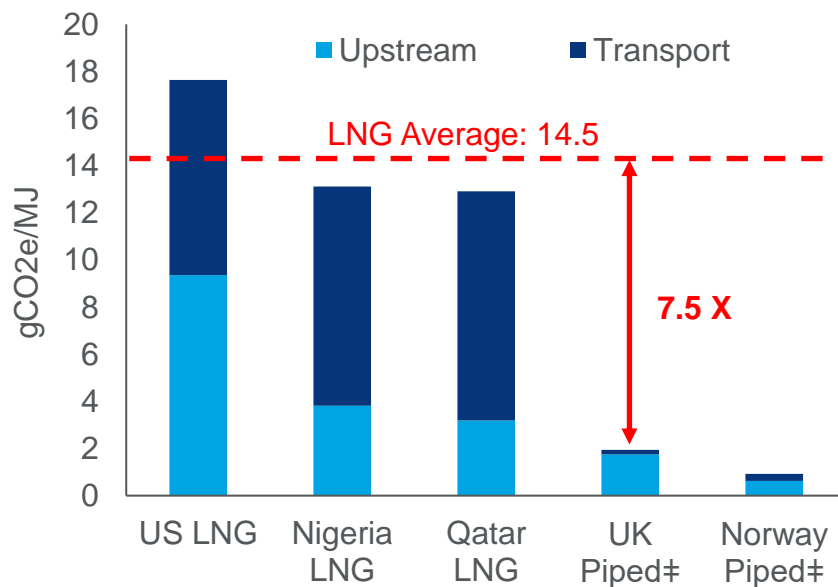
Source: Wood Mackenzie

Source: Wood Mackenzie's Crude Cargoes Emissions Tool (*more details at end of deck*)

*Delivery point is Rotterdam. **Delivery point is Isle of Grain.

†UK Piped represents the weighted average emissions of: Culzean, Cygnus, Rhum, Tolmount, Rough, Elgin and Franklin; Norway Piped is Troll

Emissions of delivered** gas to UK (gCO₂e/MJ)



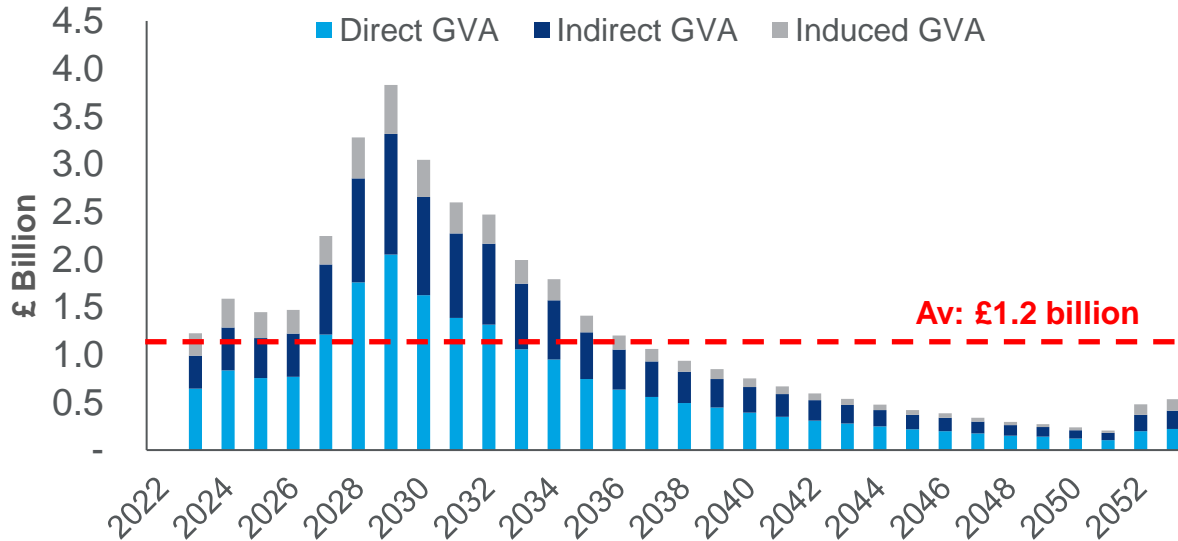
Source: Wood Mackenzie

Source: Wood Mackenzie's LNG Emissions Tool (*more details at end of deck*)

Developing the UK's oil & gas resources makes great economic sense

Developing Rosebank & Cambo creates £40 billion of GVA for the UK economy

Rosebank & Cambo[‡] Developments Gross Value Add (GVA)*



Numbers of Note

Total GVA*
£40 billion
Peak GVA*
£4 billion
Relative GDP terms**
1.8% of Scotland at peak

Source: Wood Mackenzie

*Oil Price Assumption US\$60/bbl flat real (£40/bbl); Gas Price Assumption US\$8/mcf flat real (£5.1/mcf); includes direct, indirect and induced spend.

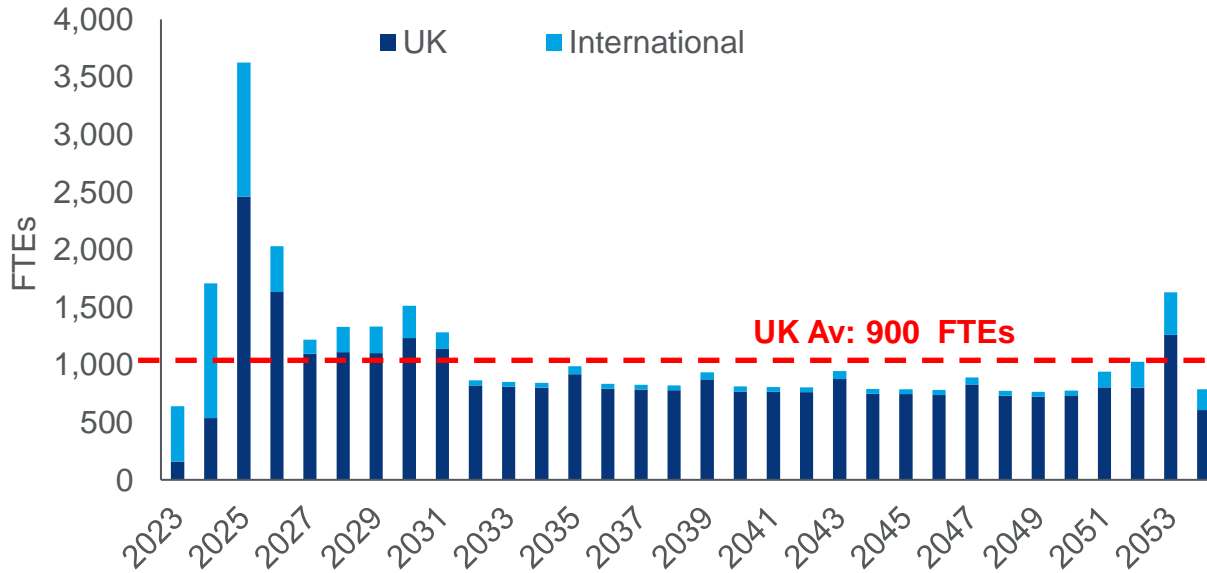
**At peak investment in 2029

‡ Assumes both developments take FID in 2023

Oil & gas developments are complex and create a lot of long-lasting jobs

Across the life of the two fields there will an average of 900 jobs created for >30 years

Rosebank & Cambo Full Time Equivalents* (FTE) across field life



Source: Wood Mackenzie and Voar Energy

Numbers of Note

Total Employment

35,000 FTE Years

Total UK Employment

29,000 FTE Years

Peak UK Employment

2,500 FTEs

*Includes: direct, indirect and induced jobs

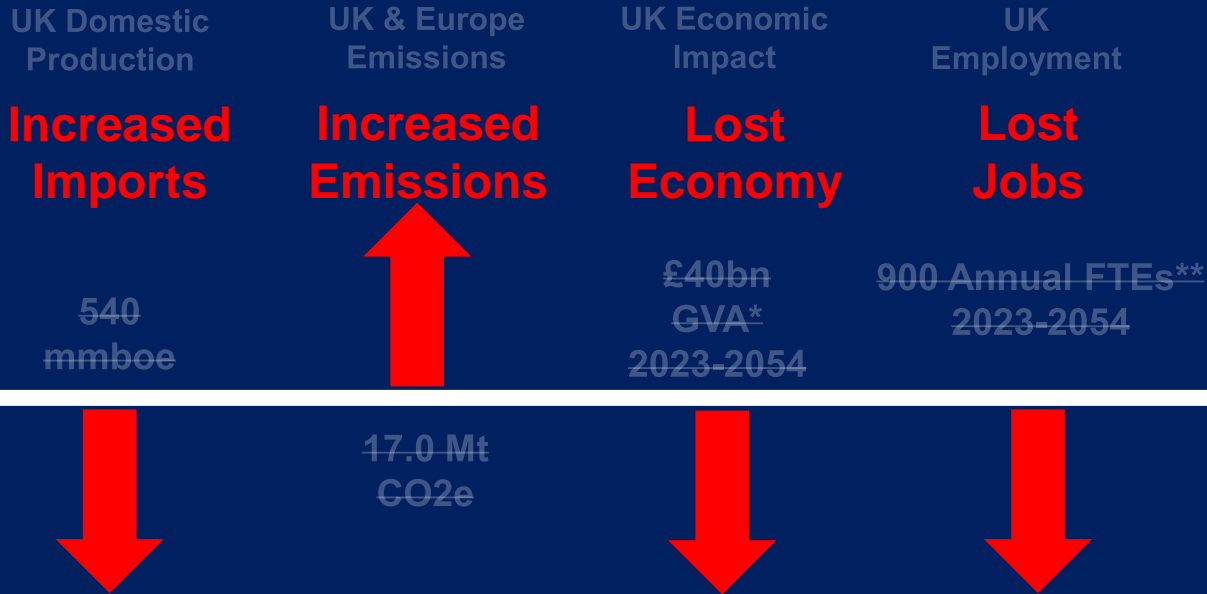
**Consolidated annual view of analysis performed at quarterly intervals

Supporting the UKCS should be a priority for all governments

- INCREASED ENERGY SECURITY
- REDUCED EMISSIONS
- ECONOMIC GROWTH
- LONG-TERM, WELL PAID JOBS

Or to put it another way....

Not Developing Rosebank and Cambo Results in:



Wood Mackenzie: independent advisory and research

- Wood Mackenzie uses its understanding of the local and global energy industry, the local industrial economy, and its modelling of the energy value chain to support its clients to address the challenges and opportunities of the energy transition.
- With research and consulting expertise across the natural resources industry supported by proprietary tools, analytics and global databases, and a global network of offices, Wood Mackenzie is uniquely positioned to support your business or organisation.
- Core to this analysis is Wood Mackenzie's market leading **Emissions Benchmarking** analysis of the Upstream, Crude Cargoes, and LNG sectors. Three global emissions tools with standardised methodology to inform your business and emissions strategy:

Upstream Emissions Benchmarking

Upstream EBT* provides detailed upstream emissions analysis at the asset, regional and corporate level:

1. **Drilling**
2. **Production**
3. **Processing**
4. **Venting & Flaring**

Crude Cargoes Emissions (CCET)

CCET calculates CO2 emissions along the crude value chain to give an aggregated view across the lifecycle for a specified cargo:

1. **Upstream**
2. **Midstream Transport**
3. **Refining**
4. **Downstream Transport**
5. **Product Use**

LNG Carbon Emissions

The **LNG Emissions** tool provides value chain emissions for any LNG cargo based on source, destination and shipping characteristics

1. **Upstream**
2. **Liquefaction**
3. **Shipping**
4. **Regas**
5. **Final Combustion**

*EBT is an interactive, web-based platform tool that integrates global data of the life-cycle emissions at the asset and corporate level across the value chain for Upstream, Downstream and Metals & Mining .

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