A dark blue silhouette map of Europe is centered in the background. The United Kingdom is highlighted in a bright orange color, making it stand out from the rest of the map.

## Plotting a route to net zero whilst maximising production – a challenging win-win for industry

David Moseley, Welligence Energy Analytics

DEVEX 2023

# Agenda

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## Introduction

Identifying the key operators and production hubs en-route to net zero

## GHG Emissions

Current status and potential methods to reduce emissions intensity

## Electrification

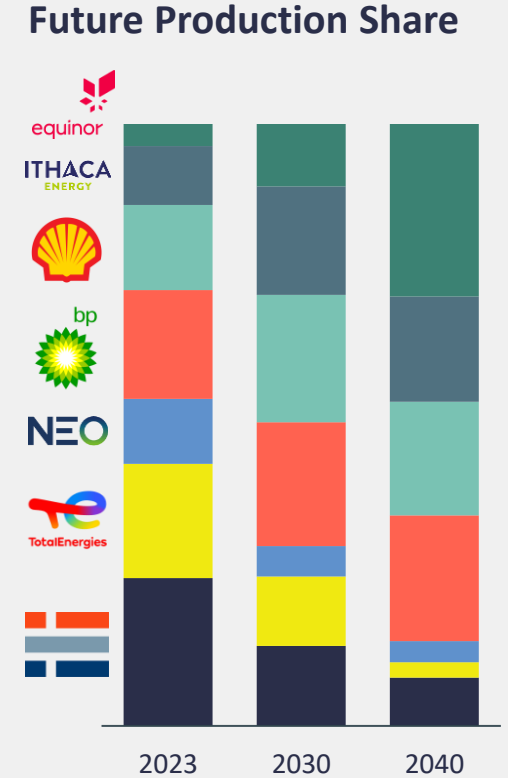
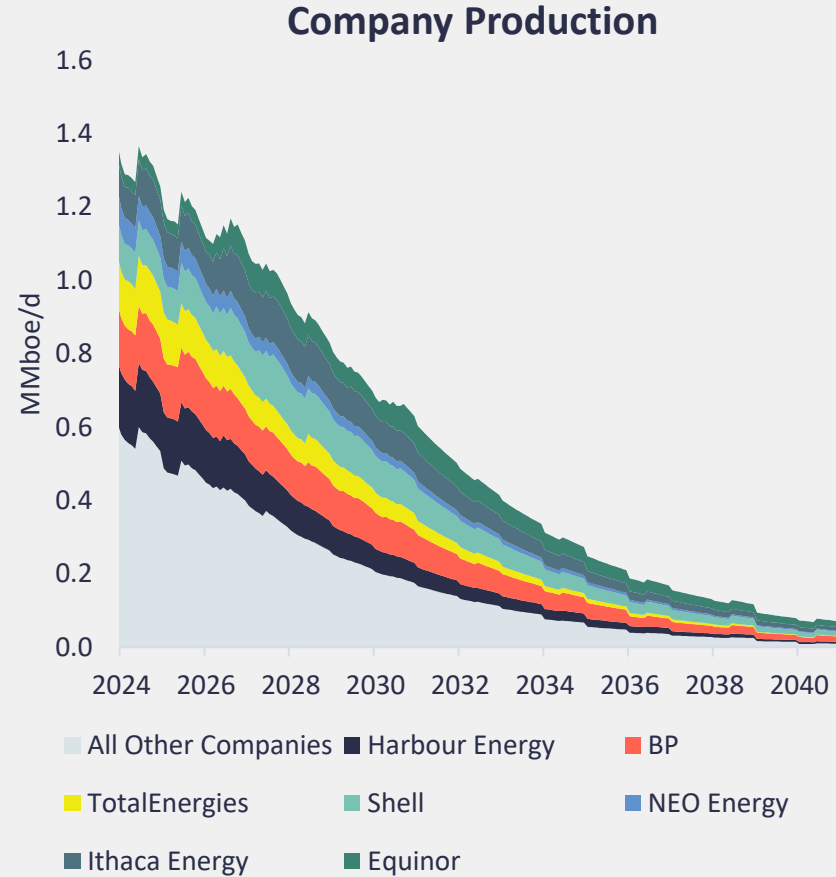
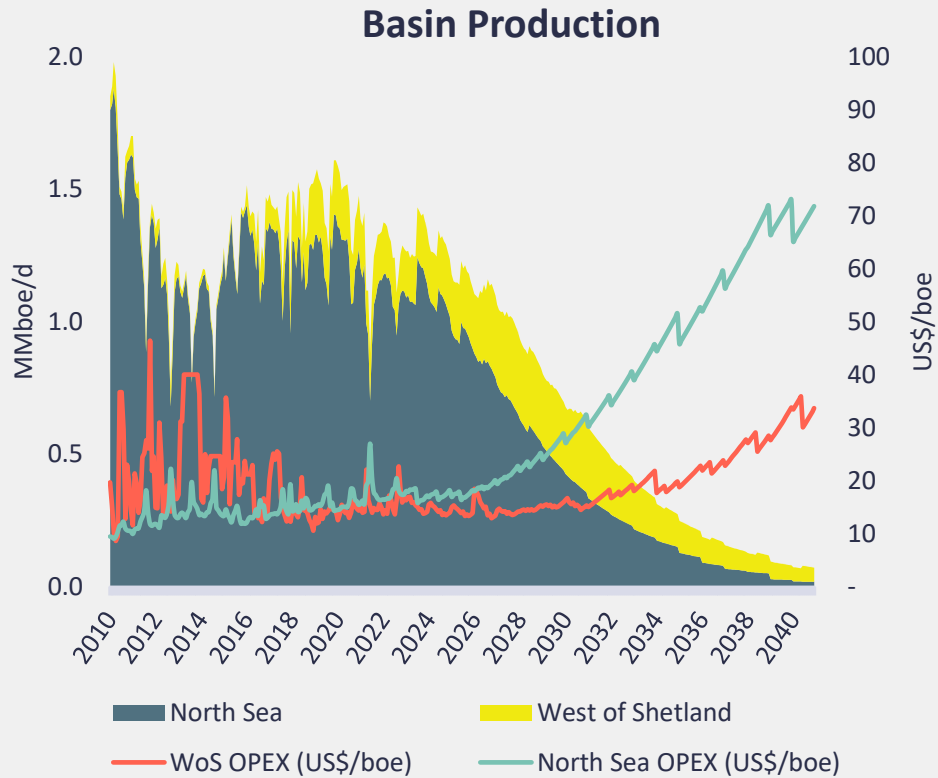
Can we make a genuine economic case for it?

## Summary

Challenges and uncertainties abound

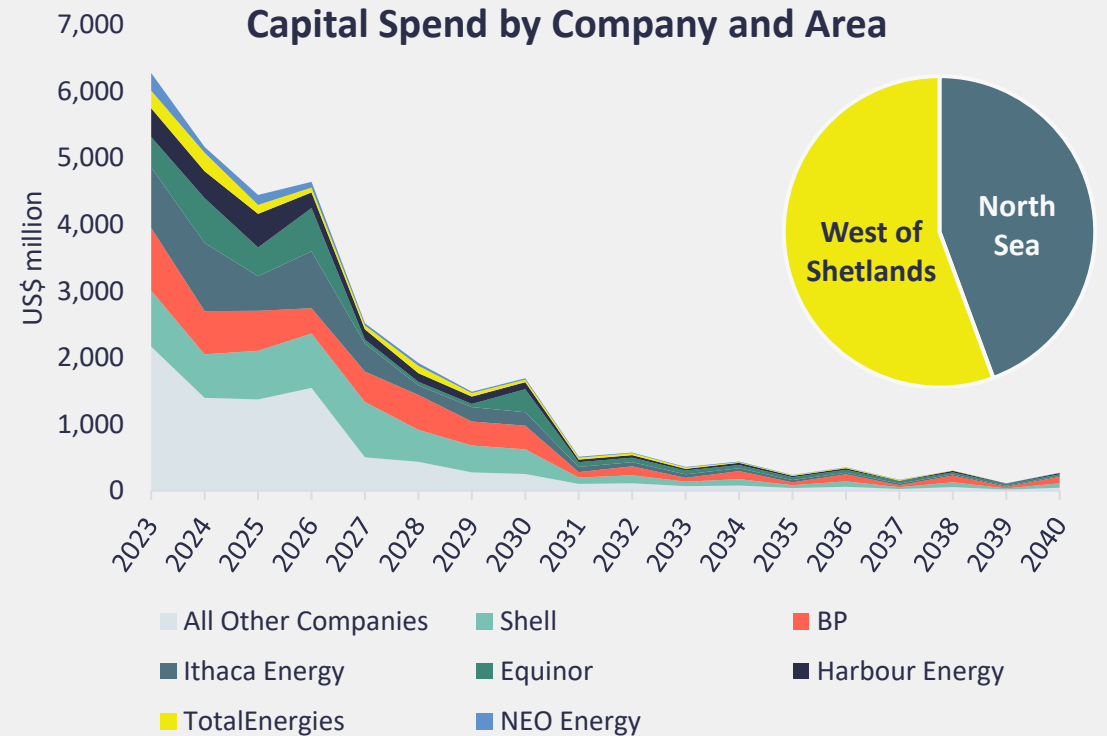
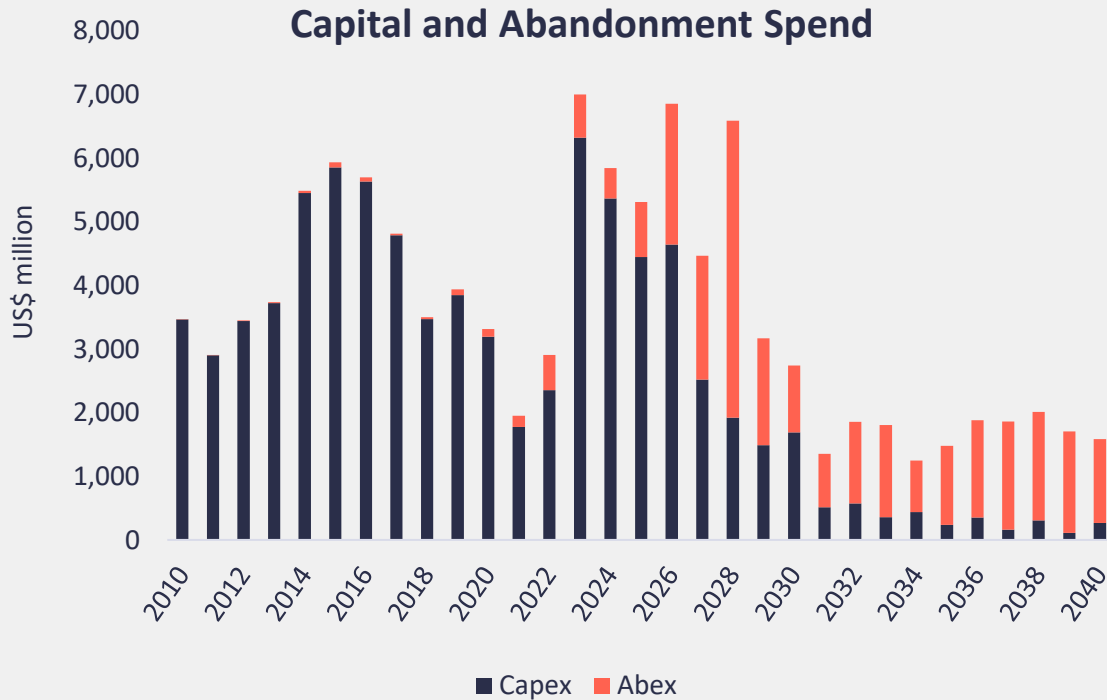
# Production

West of Shetlands output is rising, resulting in a shake-up of the top five producers



# Investment

## CAPEX has risen, but ABEX will dominate from 2030

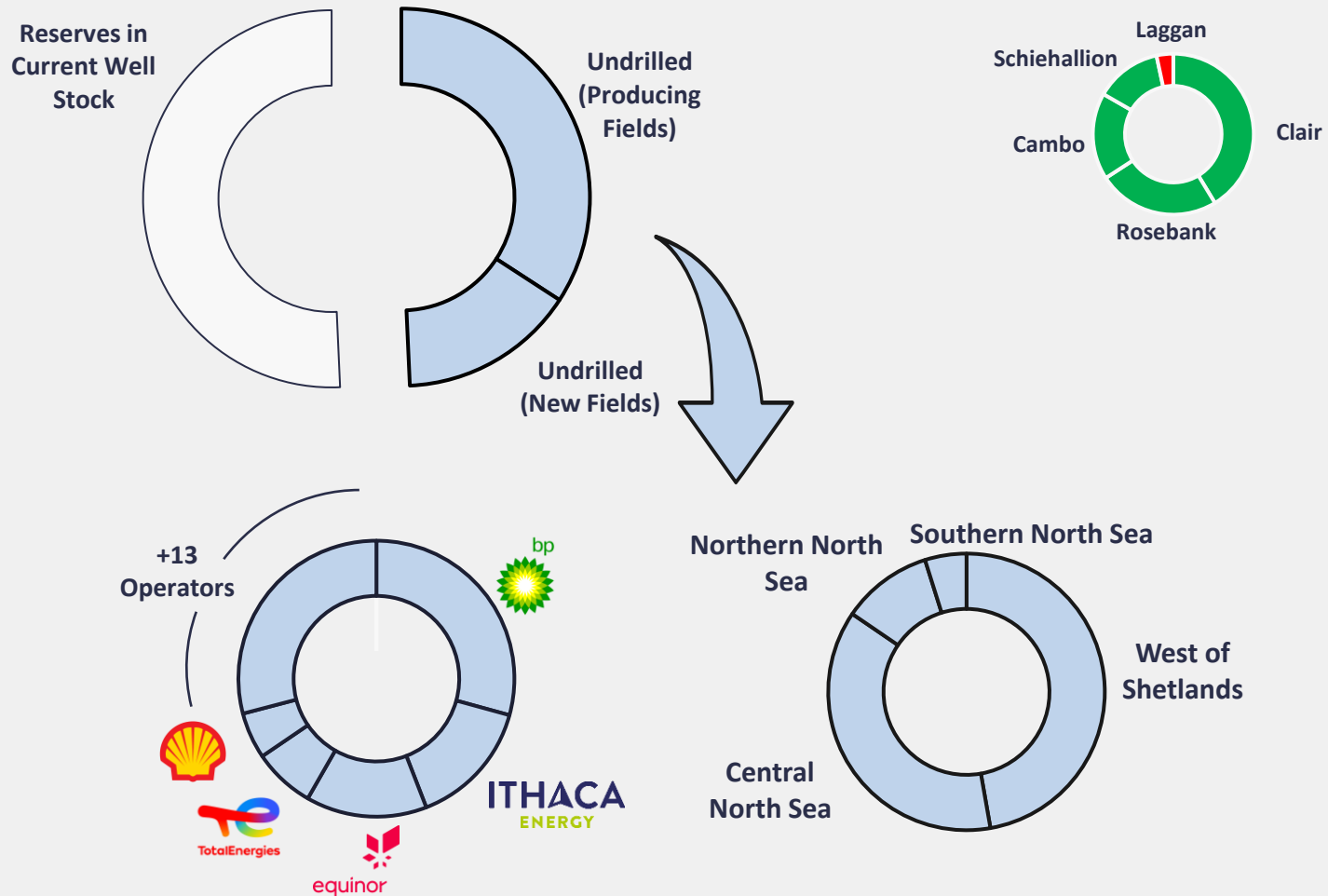


- Following a development flurry in 2010s, new, large, standalone projects are in decline - few such projects remain in the UK
- Large, North Sea focussed companies have less opportunity to invest
- How much decarbonisation spend will be added to the future profile?

# In-field drilling

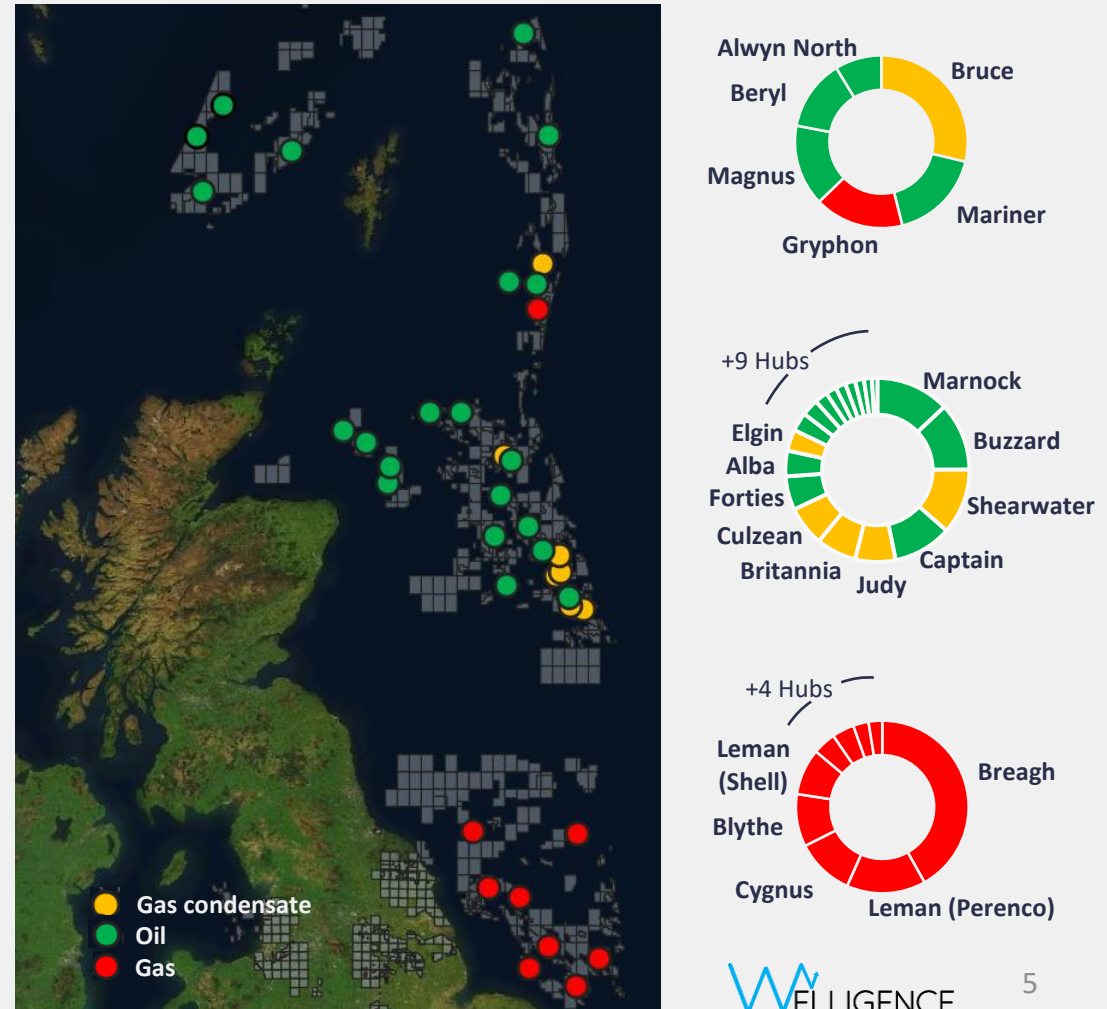
## 1.4 Bnboe 2P undrilled reserves remain at 50 producing fields

### Remaining UK Reserves



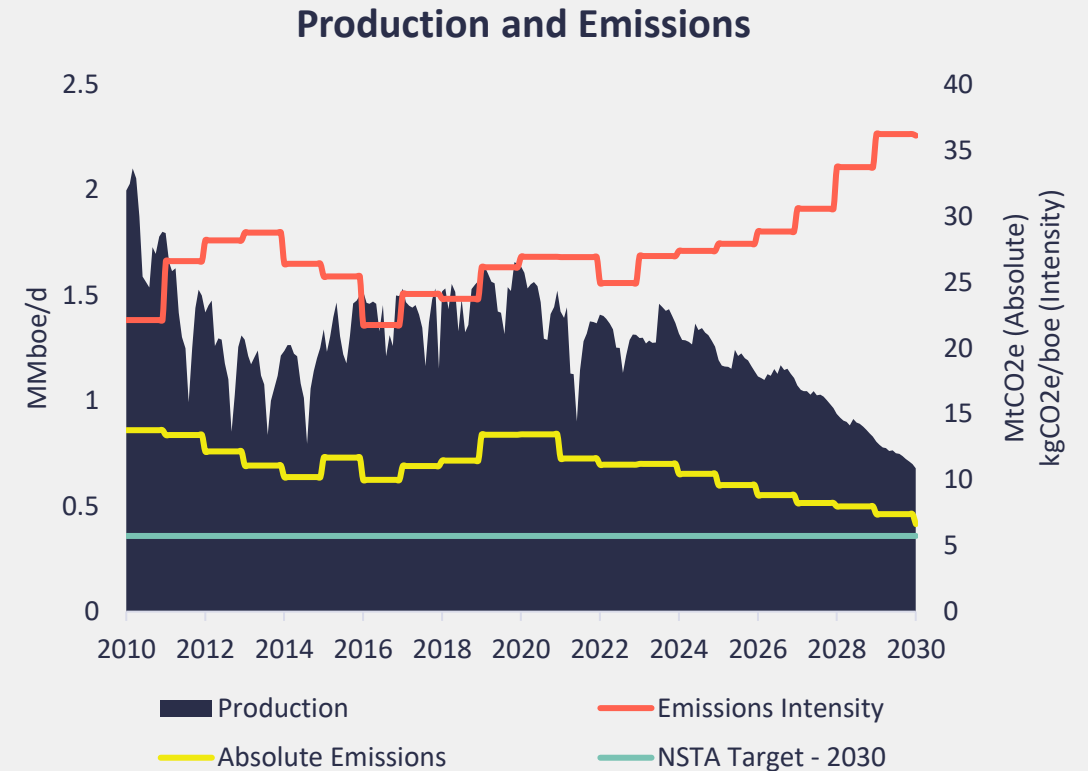
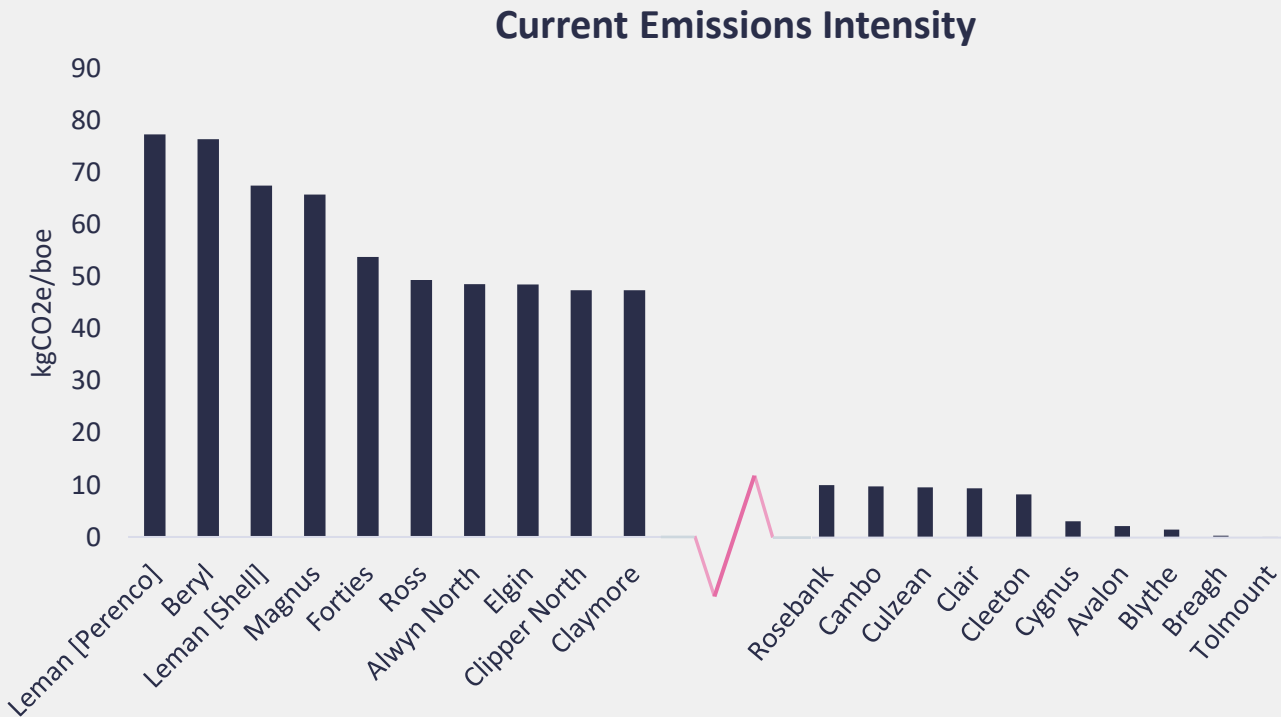
Source: Welligence Energy Analytics

### Undrilled Reserves by Hub



# GHG emissions – context

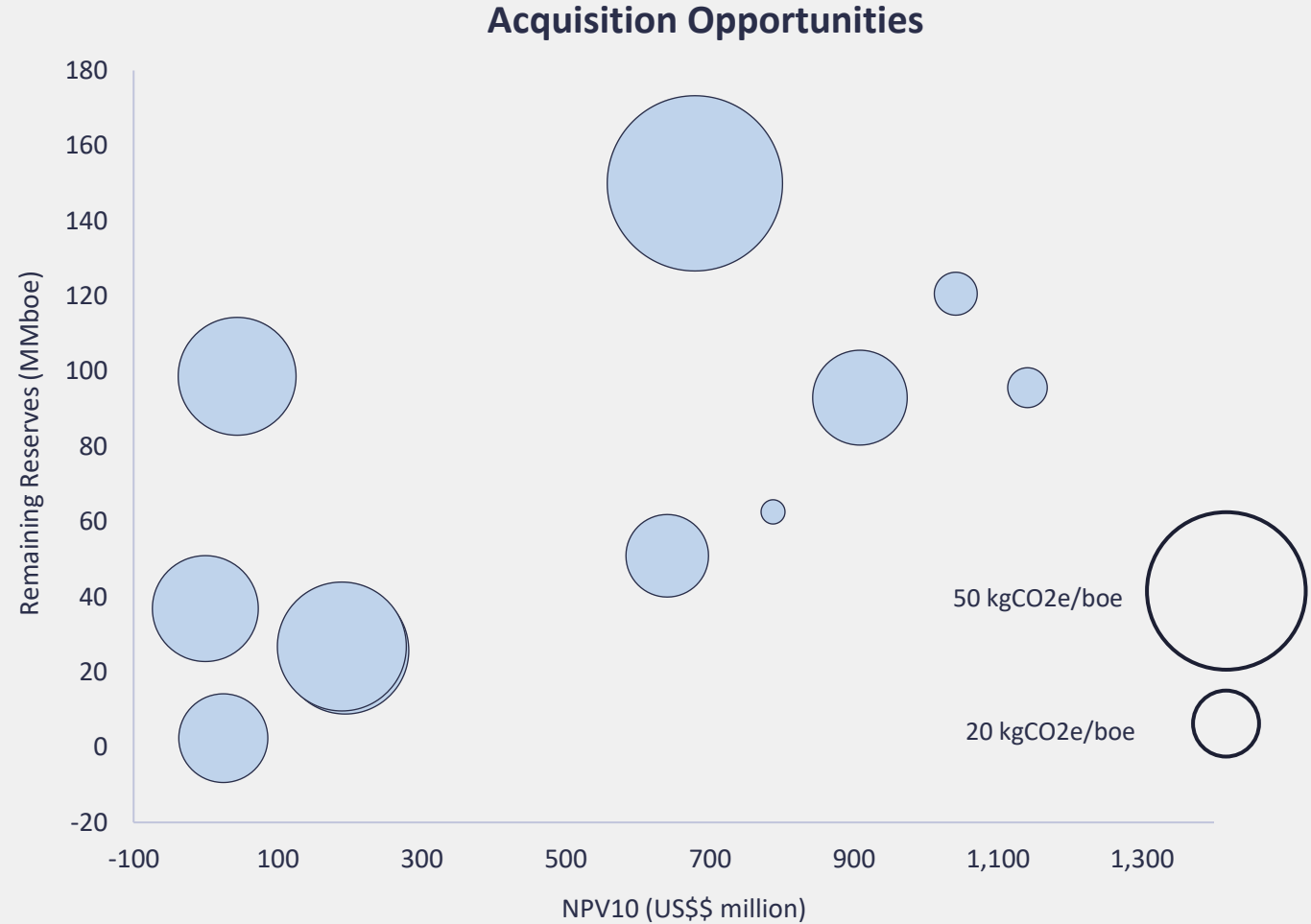
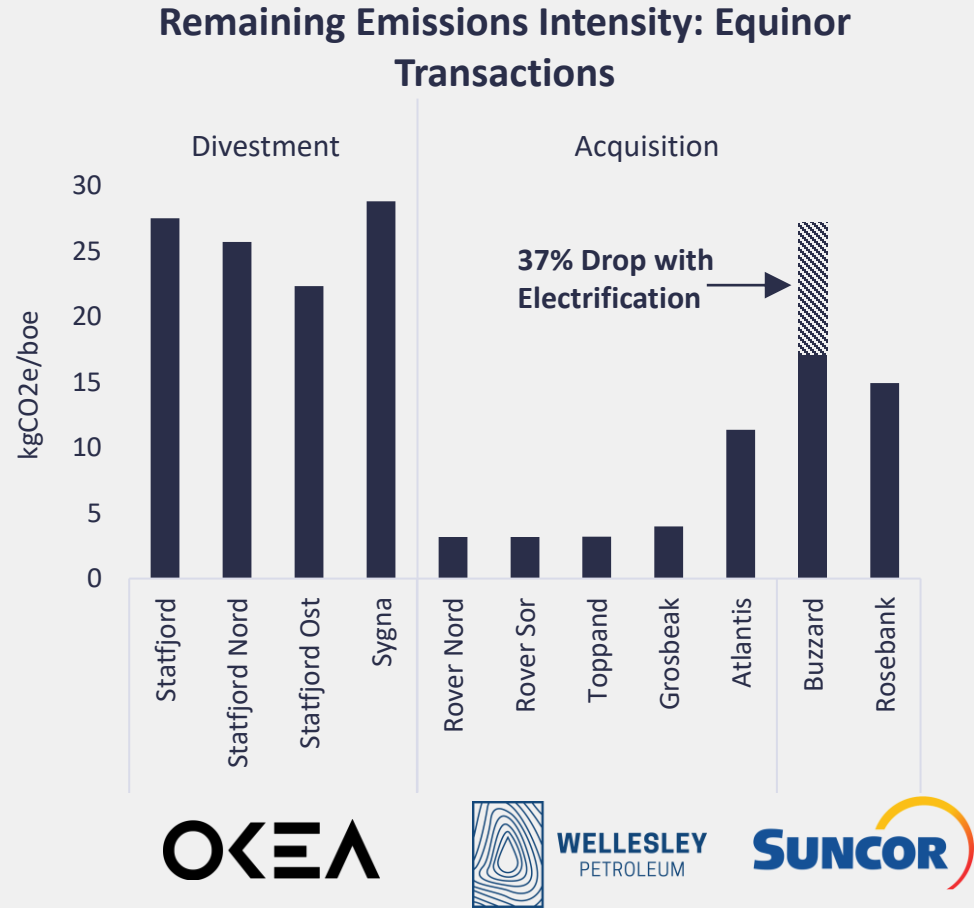
## Facility utilisation has the biggest impact on emissions intensity



- Emissions intensity at the hub level is heavily driven by utilisation rates and hydrocarbon phase
- The NSTA's 2030 target is largely met through decommissioning. But what about company targets?
- Operators have three options to reduce intensity – sell high EI assets, reduce absolute emissions (electrify) or increase throughput

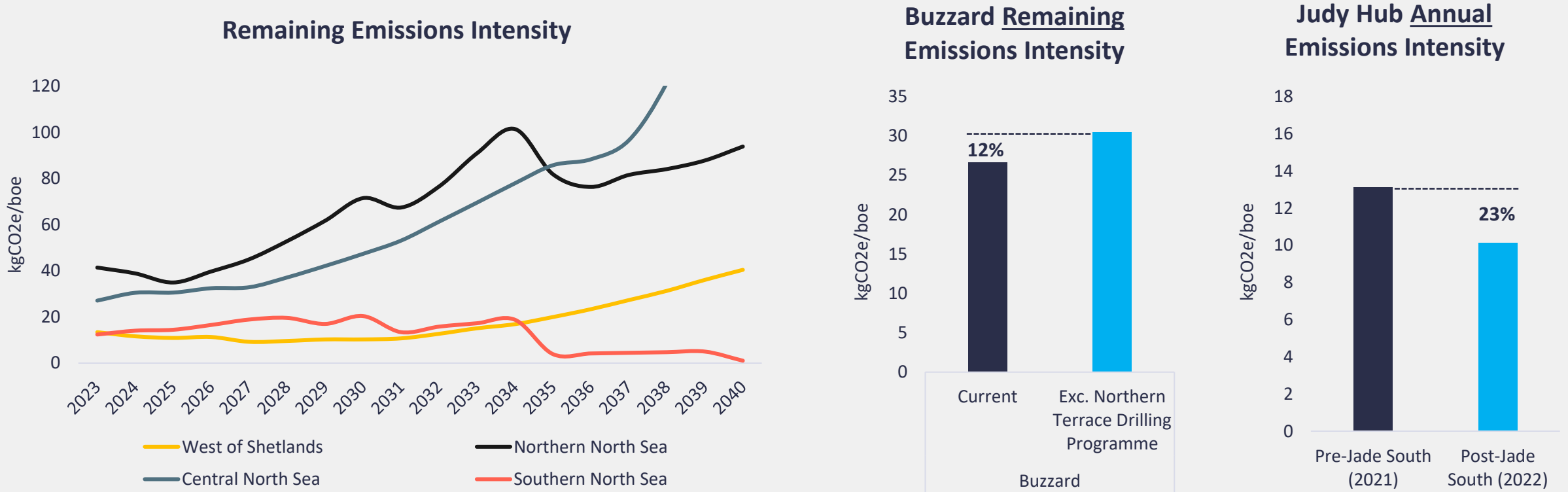
# Reducing GHG emissions – M&A

Strategic M&A can help achieve emissions targets, but is limited by opportunity



# Reducing GHG emissions – upside

## Impact of upside on emissions intensity is facility dependent

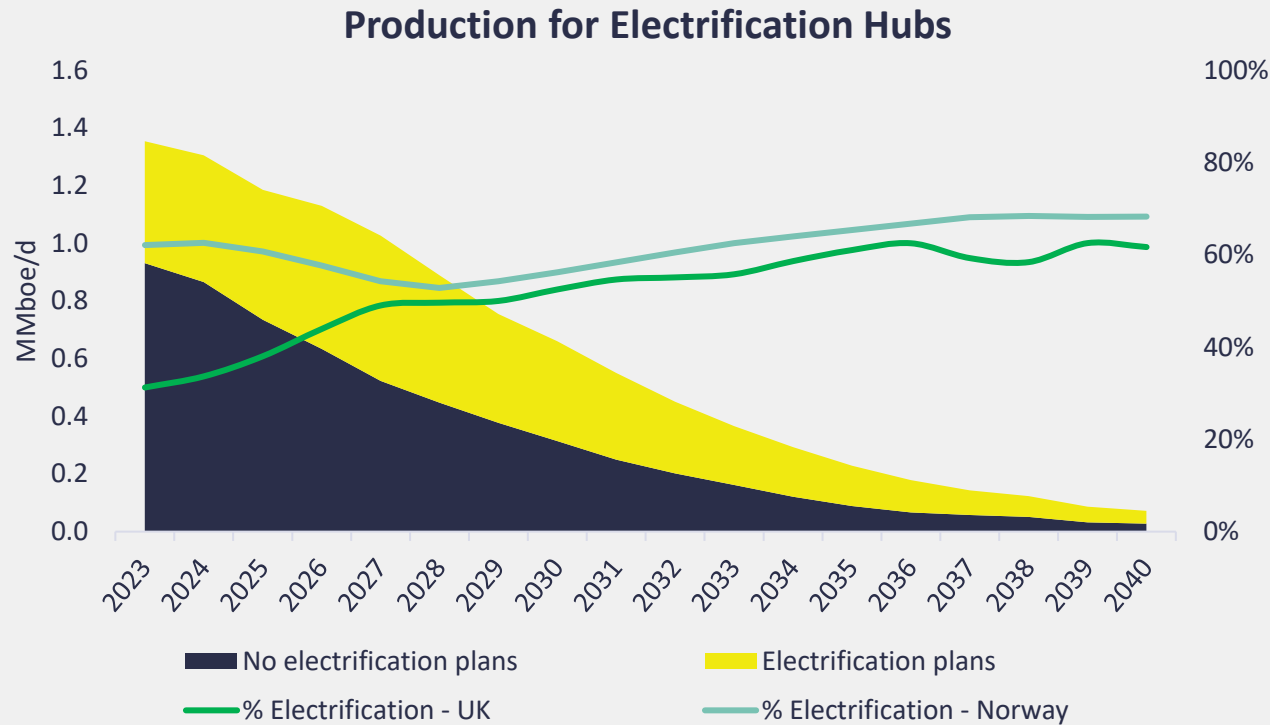


- Emissions intensity is variable by basin and heavily driven by the nature of facilities – age and hydrocarbon phase have varying impacts
- Upside has the potential to reduce emissions intensity – but case dependent

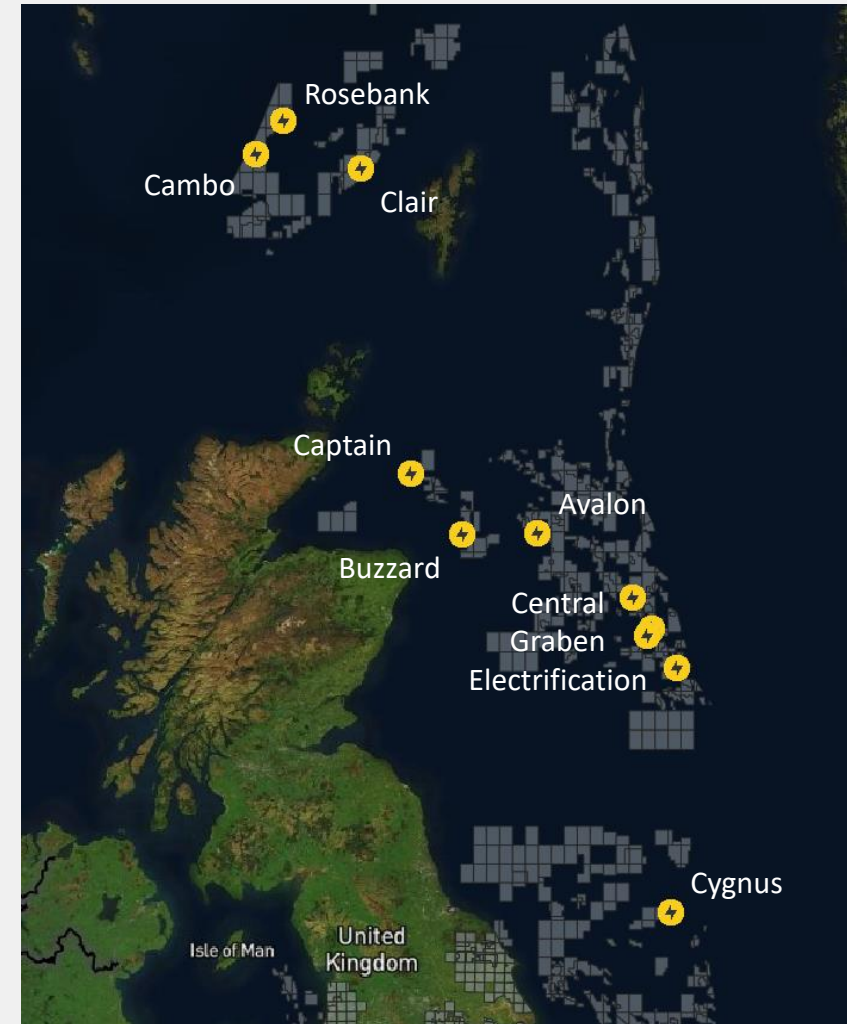


# Reducing GHG emissions – electrification

Economical viability is a key stumbling block to electrifying long life assets in the UK



- 31 fields (11 hubs) with remaining reserves 1.85 Bnboe and NPV10 of over US\$20 billion have some form of electrification scoping
- The top 7 largest producers operate 79% of potentially electrified reserves

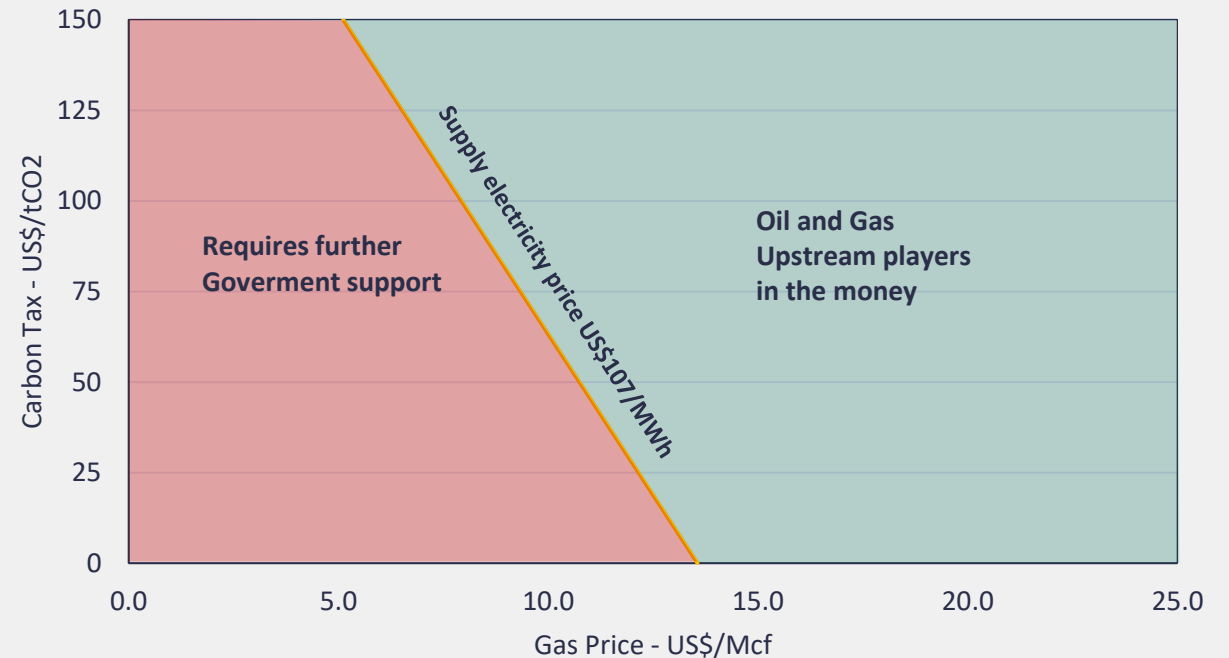


# Electrification could unlock US\$3.3 billion\* per year

## Electrification via offshore wind is proving to be a challenge



**INTOG Areas 6 & 7**  
Gas prices and carbon tax required by upstream to break even



- Material prize is at stake through electrification, with multiple sources of cost savings. But timing is crucial, with the opportunity decreasing as facilities are abandoned.
- There are significant challenges to electrification via offshore wind, including costs, supply chain, gas prices and feasibility.

\*Includes additional revenue from gas sales along with diesel and carbon tax saving (US\$12.5/Mcf; US\$7.5/gal; US\$75/tCO2)

Source: Welligence Energy Analytics

# Closing remarks

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- Another decade of material capital investment remains in the UK – decarbonisation spend could extend this further, but ABEX is looming
- No silver bullet in reducing GHG emissions intensity. Divestments, upside and reducing absolute emissions all have challenges, however a combination of all three will have the greatest impact
- Electrification offers many cost benefits and the EPL has provided incentive, so the time is now. However, the challenges are numerous – can decarbonisation and MER work together?



**SETTING THE STANDARD IN ENERGY RESEARCH AND ANALYTICS**