

Responsible O&G Production through Automation of Emissions Reduction Action Plans

Topsides UK 2022

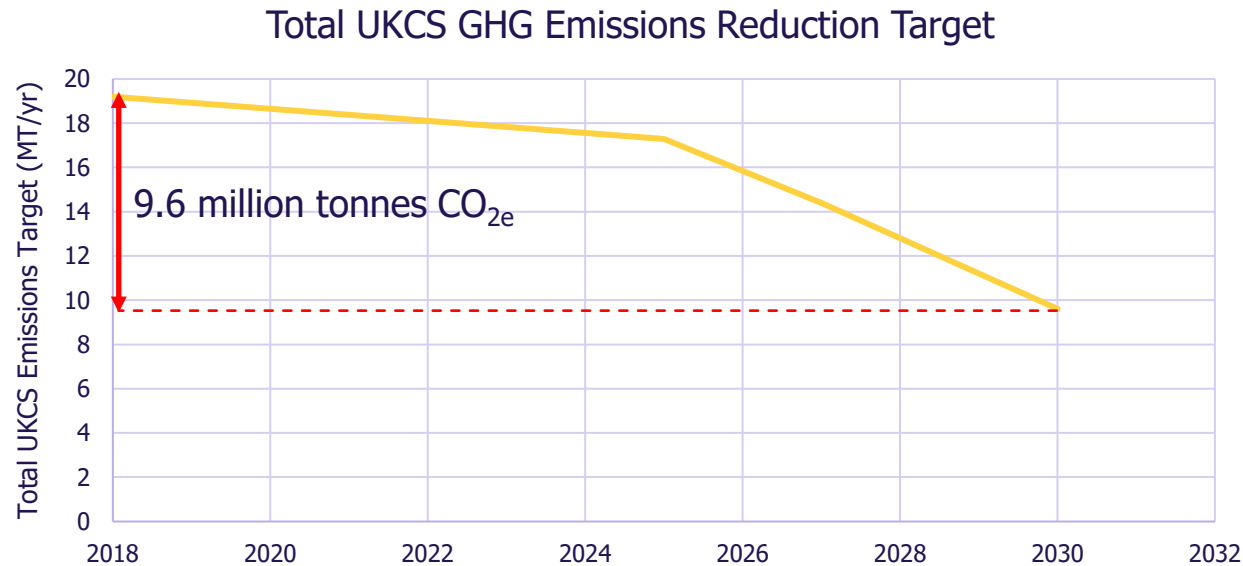
The Challenge

WHAT North Sea Transition Deal's targets?

HOW What is the best solution?

WHEN How long will it take to implement?

COST What is the optimum ERAP?



Department for Business, Energy & Industrial Strategy

OGUK

North Sea Transition Deal

19.2 Mt CO_{2e} in 2018

Targets
2025: 2018 -10%
2027: 2018 -25%
2030: 2018 -50%

TOGETHER FOR OUR PLANET

Emissions Quantification – Complex

- ❖ **Flow dependent** emissions – reduce over time as production declines
 - Compressor / pump power (capped at equipment minimum flow)
 - Heaters duty
- ❖ Emissions increasing due to **changes in reservoir** over time
 - Lower reservoir pressure
 - Requirement for gas lift, water injection, gas injection
 - Increased produced water rate which requires treatment
- ❖ Emissions increasing due to facilities **ageing**
 - Reduced uptime / less reliable equipment
 - Reduced efficiency of compressors / pumps
- ❖ **Insensitive** emissions – not linked to production rate or age
 - Purge / blanketing
 - Seal vent
 - Emergency flaring

Require rigorous prediction
of emissions over time to
identify best ERAP

Conventional Approach

Project Data

- Peak year production rates
- Pre-selected option(s)
- Fixed gas turbine efficiency
- Fixed carbon credit cost

Steady State Model



Assessment Output

- GHG emission delta (based on peak year)
- Carbon credit cost (based on fixed rate)
- CAPEX
- Project Schedule / Shutdown Requirements

Innovative Approach

Options List

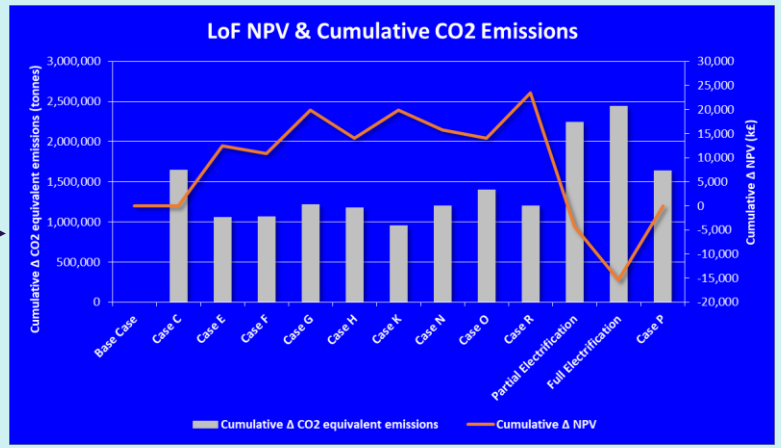
1. Case C
2. Case E
3. Case F
4. ..
5. ..

Financial Assumptions

Life of Field Data

Carbon Intensity Reduction Package

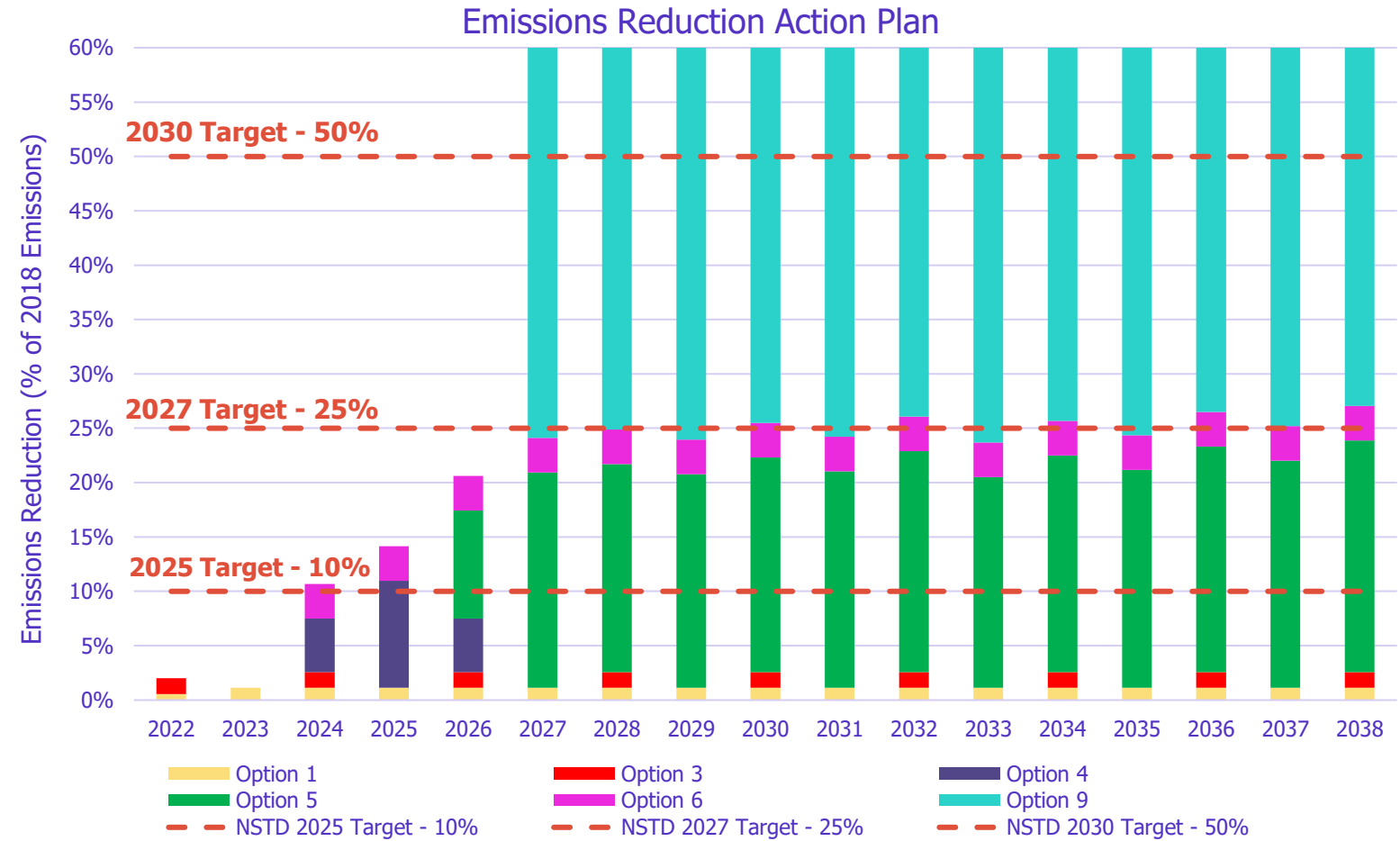
- ✓ Quick
- ✓ Flexible - sensitivity cases
- ✓ Rigorous – uses same basis throughout the options



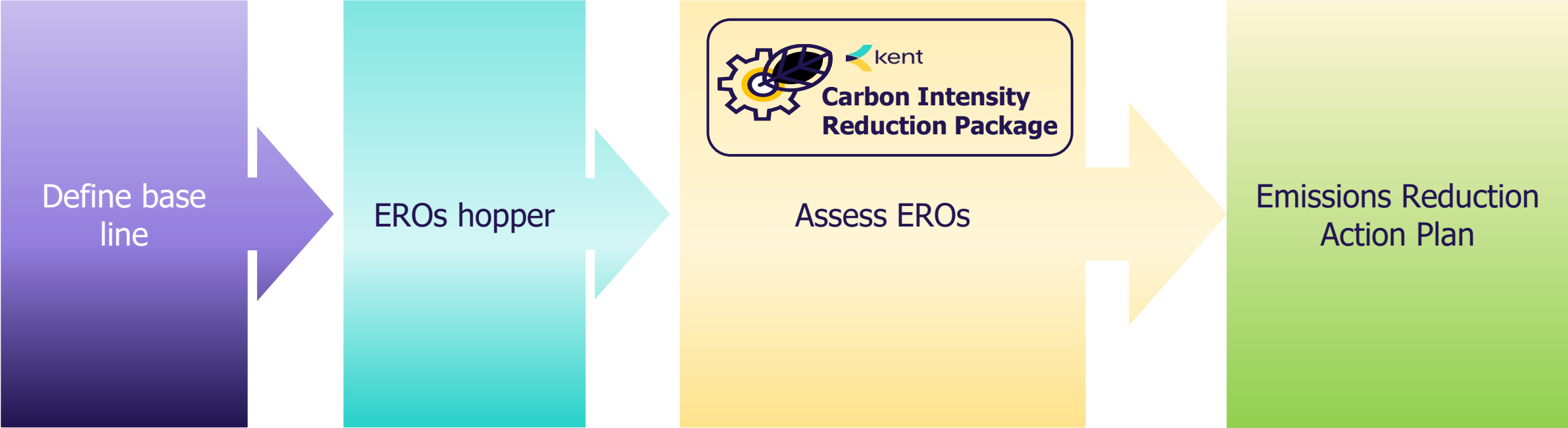


Future Emissions Reduction Potential

- Emission reduction option screening study
- Emissions reduction action plan developed for major North Sea gas producer
- Identified strategy to achieve set emissions reduction targets
- Cumulative emissions saving of **40 thousand tonnes_{CO2e}** over next 5 years
- Cumulative emissions saving of **500 thousand tonnes_{CO2e}** over remaining field life



Summary





THANK YOU

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Authority

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