MINIMUM ECONOMIC FIELD SIZE ANALYSIS ACROSS THE UKCS AND ITS IMPLICATIONS FOR THE DISCOVERED RESOURCES

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INTRODUCTION

United Kingdom Continental Shelf (UKCS) is a mature basin that produce oil & gas. The number of fields has increased over time, new discoveries are much smaller and many fields are marginal and inter dependent. This study is an economic evaluation for three different oil & gas fields and examine the feasibility of the development of them.

AIM

The project deals with an economic evaluation and investment of some of the undeveloped discoveries of the UKCS. The aim of the project is to investigate if the small discoveries close to oil fields in the North Sea are economically viable.

METHOD

Field Model Description

Cepheus Deterministic Is the base case scenario for which input variables are fixed. Deterministic analysis is undertaken to estimate NPV, IRR. Sensitivity Analysis on NPV is carried out. Base Price assumed 44 pence/therm.

Amos & Vorlich Stochastic Oil prices were randomly simulated assuming normal distribution. MC Simulation was run (1000 times) to check their effect on the Post Tax NPV of the project.

Cepheus Stochastic Gas prices were randomly simulated assuming normal distribution. MC Simulation was run (1000 times) to check their effect on the Post Tax NPV of the project.

RESULTS

Field Model Post Tax NPV - Cepheus

Pre-Tax NPV $m $120.00
Post Tax NPV $m $100.00
IRR (%) 40%
NPV/I -66%
Government Tax ($m) $4.83
Government Take (%) 4.13%
Breakeven Price ($/bbl.) 55.00

Pre-Tax NPV $m $217.80
Post Tax NPV $m $199.14
IRR (%) 15%
NPV/I -66%
Government Tax ($m) $4.83
Government Take (%) 4.13%
Breakeven Price ($/bbl.) 55.00

Pre-Tax NPV $m $199.14
Post Tax NPV $m $150.00
IRR (%) 22%
NPV/I -66%
Government Tax ($m) $4.83
Government Take (%) 4.13%
Breakeven Price ($/bbl.) 55.00

Pre-Tax NPV $m $497.76
Post Tax NPV $m $303.86
IRR (%) 22%
NPV/I -66%
Government Tax ($m) $294.90
Government Take (%) 39.55%
Breakeven Price ($/bbl.) 48.75

45.83% of generating a positive NPV – Gas Price- Cepheus Field

48.75% of generating a positive NPV – Oil Price- Vorlich Field

50.25% of generating a positive NPV – Oil Price- Amos Field

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