

Economic, Financial Security, and Tax Issues Relating to Decommissioning in the UKCS

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Issues

1. Potential market in UKCS and pace of development to 2050.
2. Financial Security instruments and their economic effects.
3. Tax relief issues.

Modelling the Potential Decommissioning Market

Large field-based financial simulation model incorporating Monte Carlo technique for risk analysis. Model incorporates all evolving taxation arrangements since 1960's. Large field database with following features:

- a) Historic production, investment costs (drilling and facilities separately), operating costs (tariffs separately), decommissioning costs. Data from successive OGUK field database plus other sources (e.g. OGA production data)
- b) Data on sanctioned fields, probable and possible fields and incremental projects all relating to future activity sourced from OGUK field database. All these incorporate key data and expected phasing through time.

c) Currently numbers of fields are as follows:

(i) Sanctioned fields	404
(ii) Incremental projects	51
(iii) Probable fields	14
(iv) Possible fields	14

New discoveries modelled according to the following procedures:

- a) Exploration effort based on combination of (i) recent experience and (ii) prospective oil/gas price behaviour (sustained).
- b) Success rates based on combination of (i) experience in recent years and (ii) size of effort. In relation to (ii) it is assumed that higher effort is associated with more discoveries but lower success rate than with medium effort. For whole of UKCS success rates:

Medium Effort = 30%

Low Effort = 33%

Technological progress maintains these success rates in the period to 2045.

Investment Screening Prices

Oil Price (real) \$/bbl	Gas Price (real) P/therm
50	40
60	50

Investment Hurdle Criteria

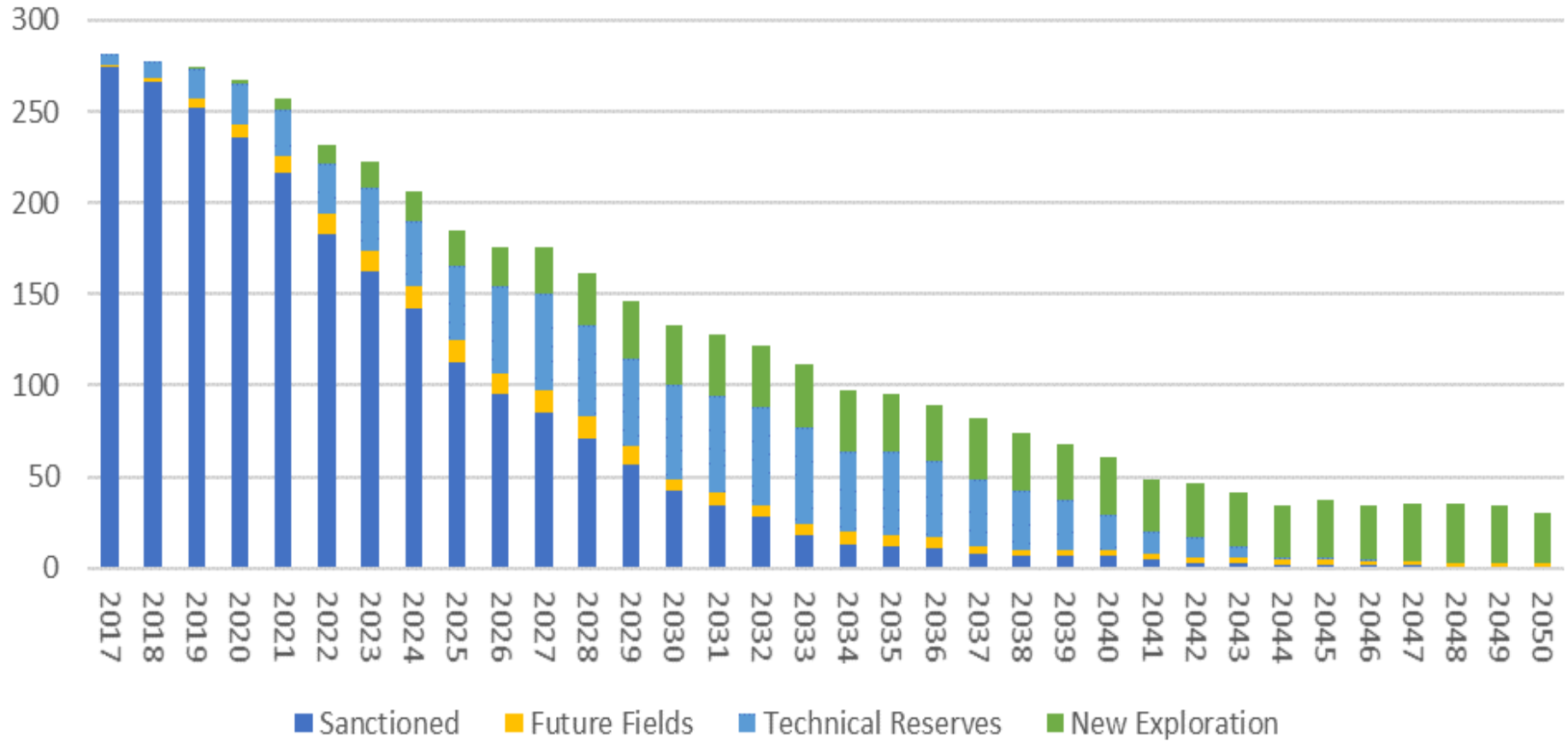
$$\text{NPV (post tax)} / \text{I (pre tax)} \geq 0.3$$

with discount rate
of 10% in real terms

Number of Fields in Production \$60/bbl and 50p/therm

Hurdle : Real NPV @10%/Real Devex @ 10% > 0.3

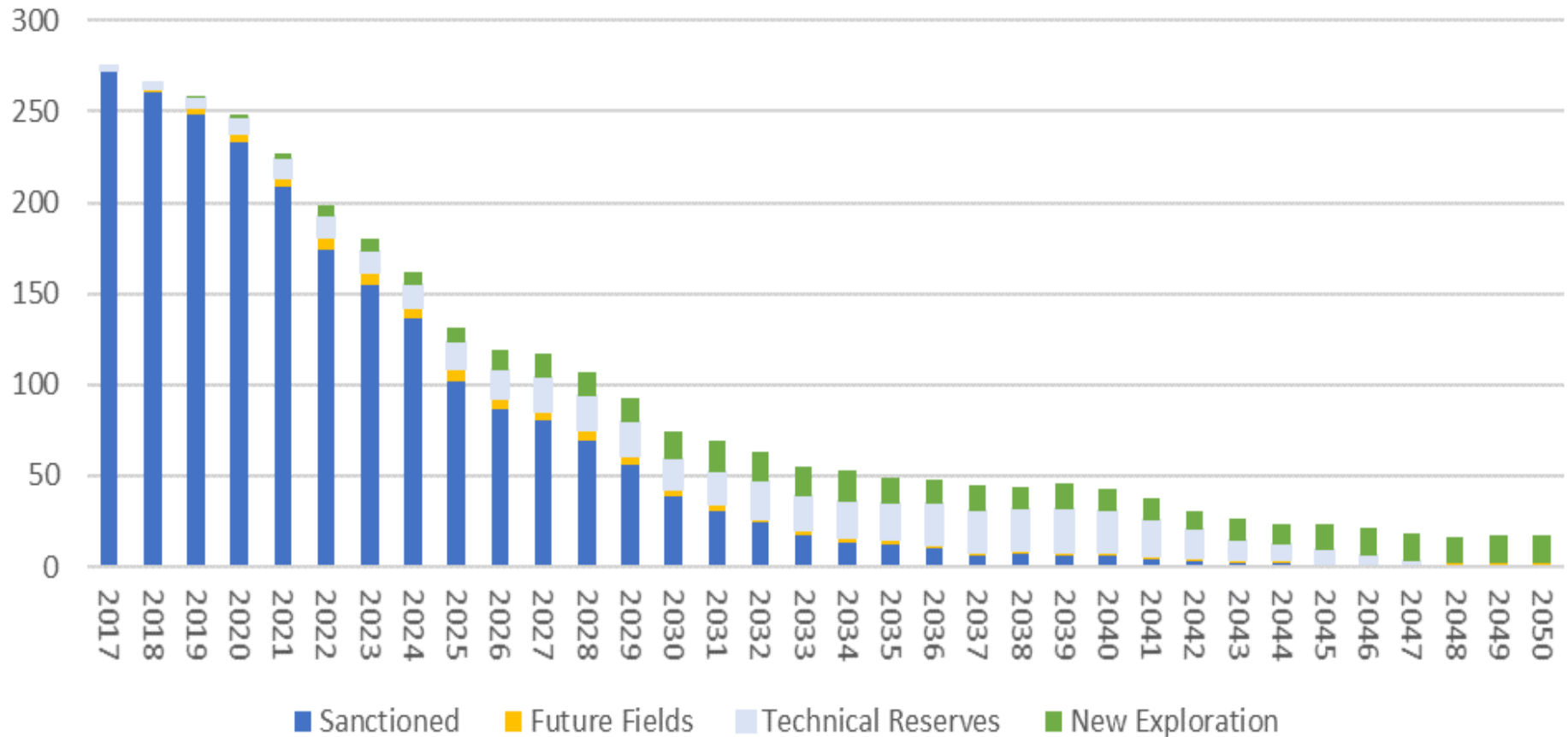
No. of Fields



Number of Fields in Production \$50/bbl and 40p/therm

Hurdle : Real NPV @10%/Real Devex @ 10% > 0.3

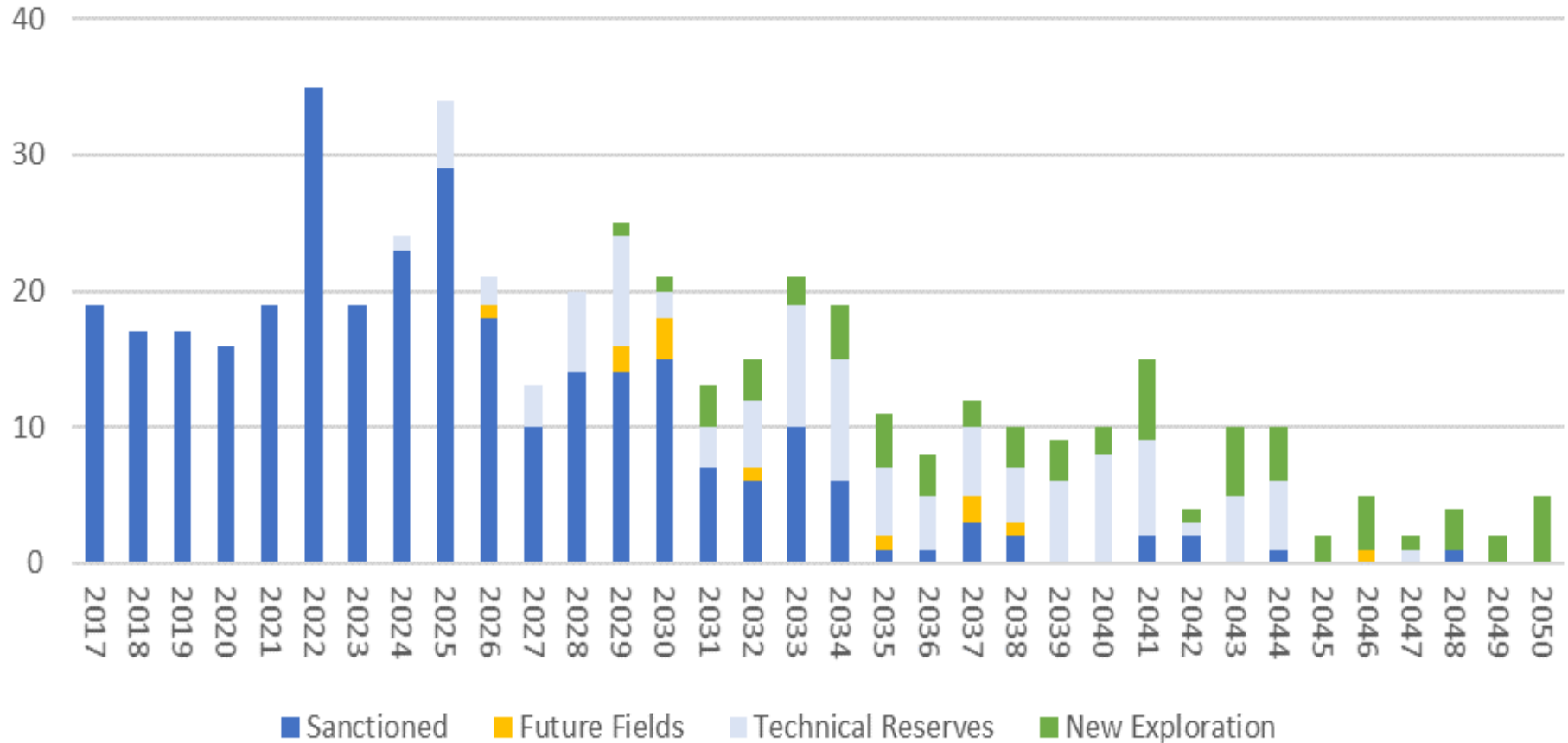
No. of Fields



Potential Number of Fields Decommissioning \$60/bbl and 50p/therm

Hurdle : Real NPV @ 10%/Real Devex @ 10% > 0.3

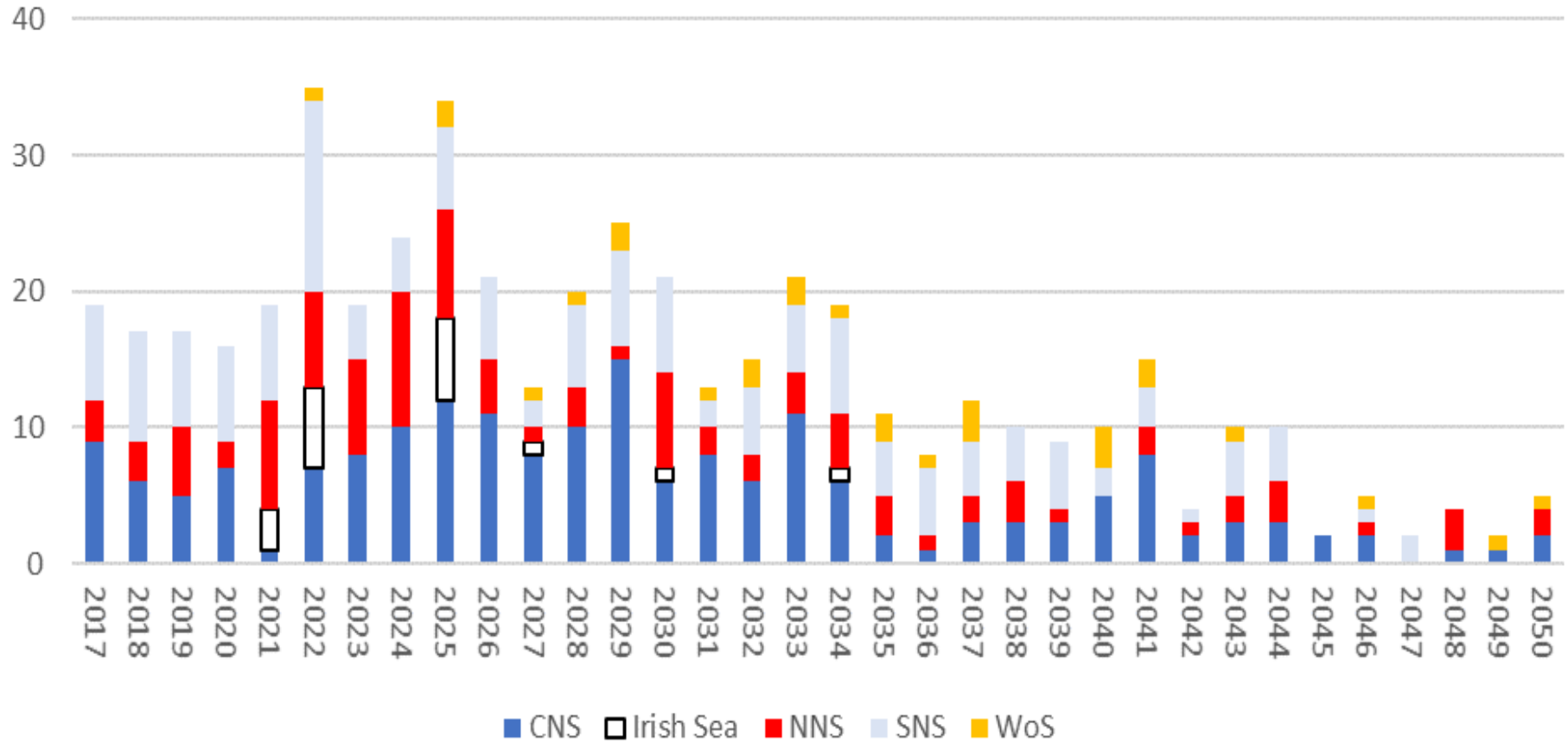
No. of Fields



Potential Number of Fields Decommissioning \$60/bbl and 50p/therm

Hurdle : Real NPV @ 10%/Real Devex @ 10% > 0.3

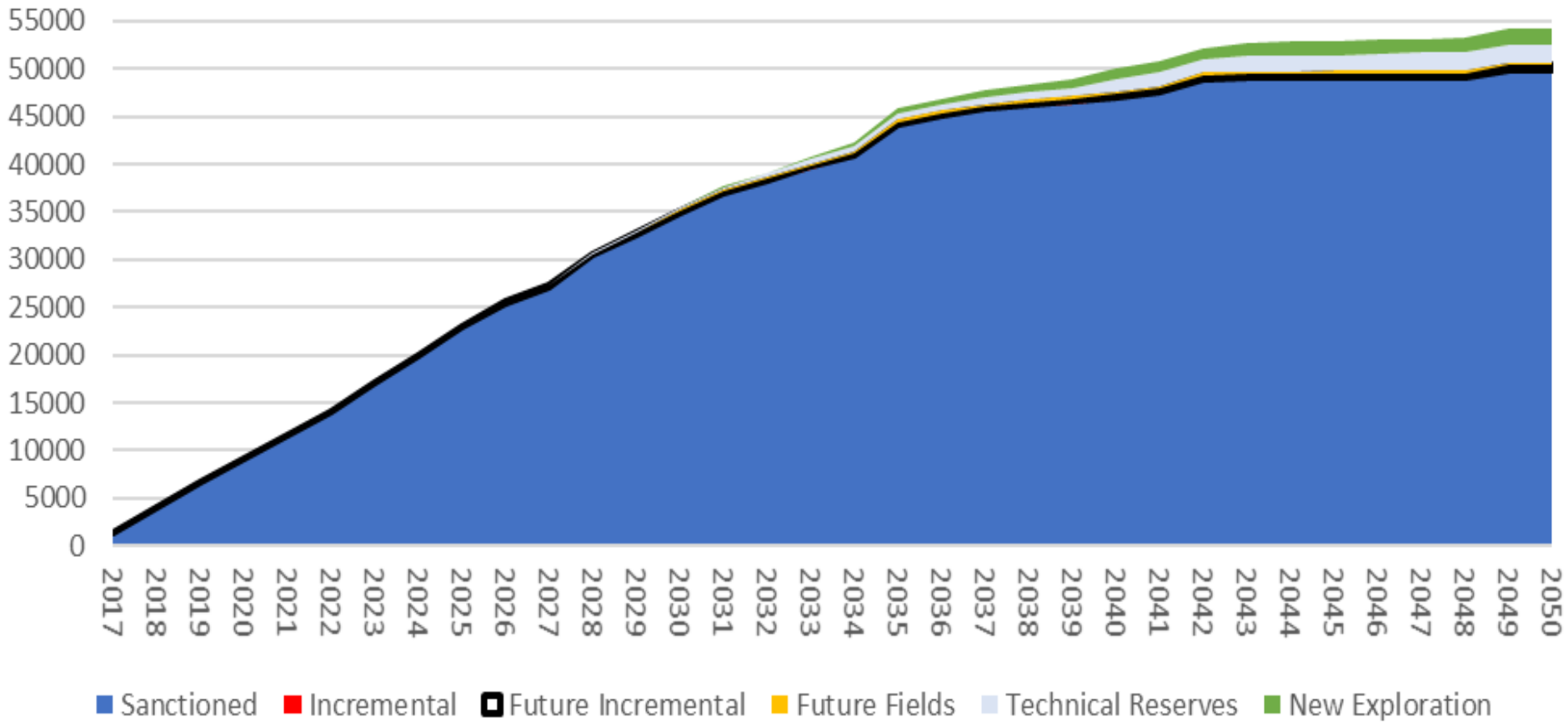
No. of Fields



Potential Cumulative Decommissioning Expenditure \$60/bbl and 50p/therm

Hurdle : Real NPV @ 10%/Real Devex @ 10% > 0.3

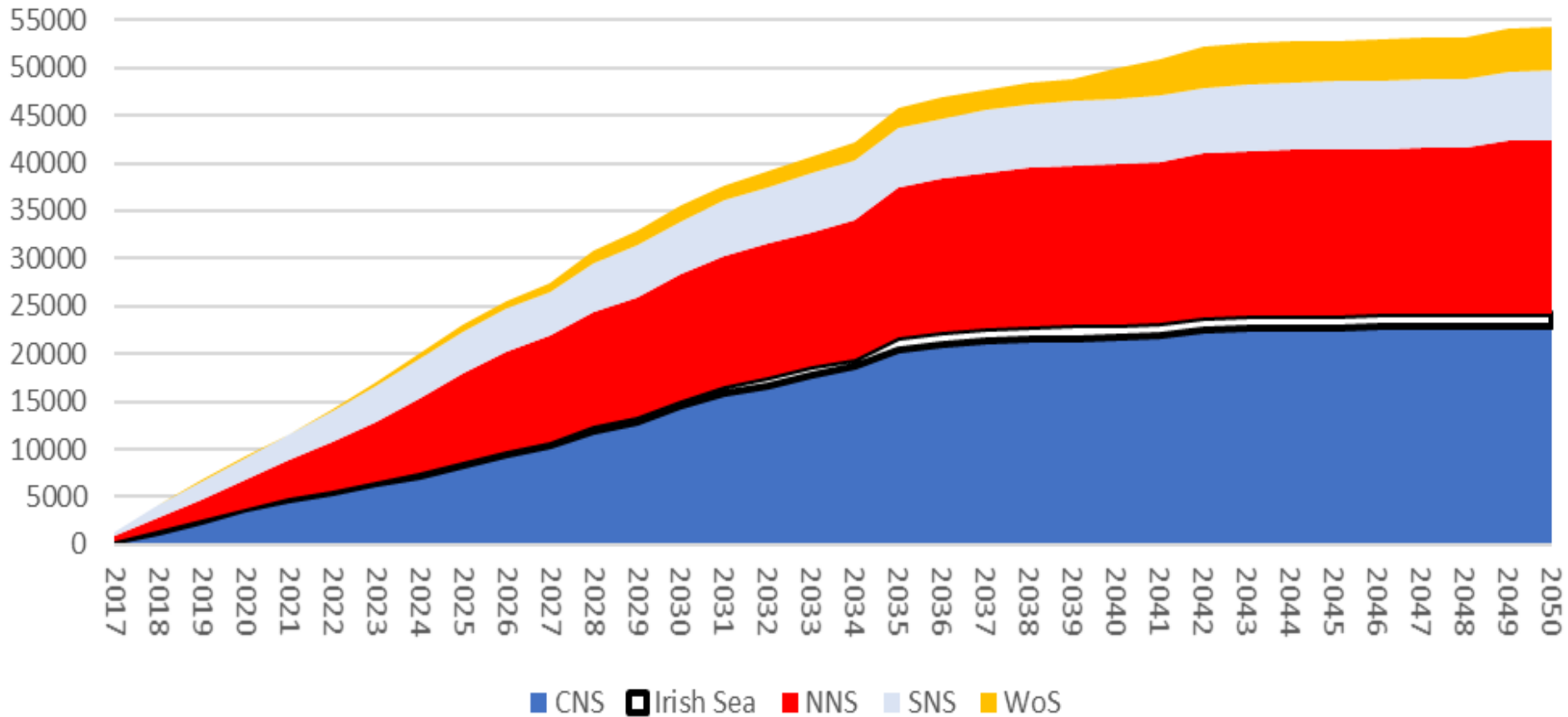
Real 2017 £m



Potential Cumulative Decommissioning Expenditure \$60/bbl and 50p/therm

Hurdle : Real NPV @ 10%/Real Devex @ 10% > 0.3

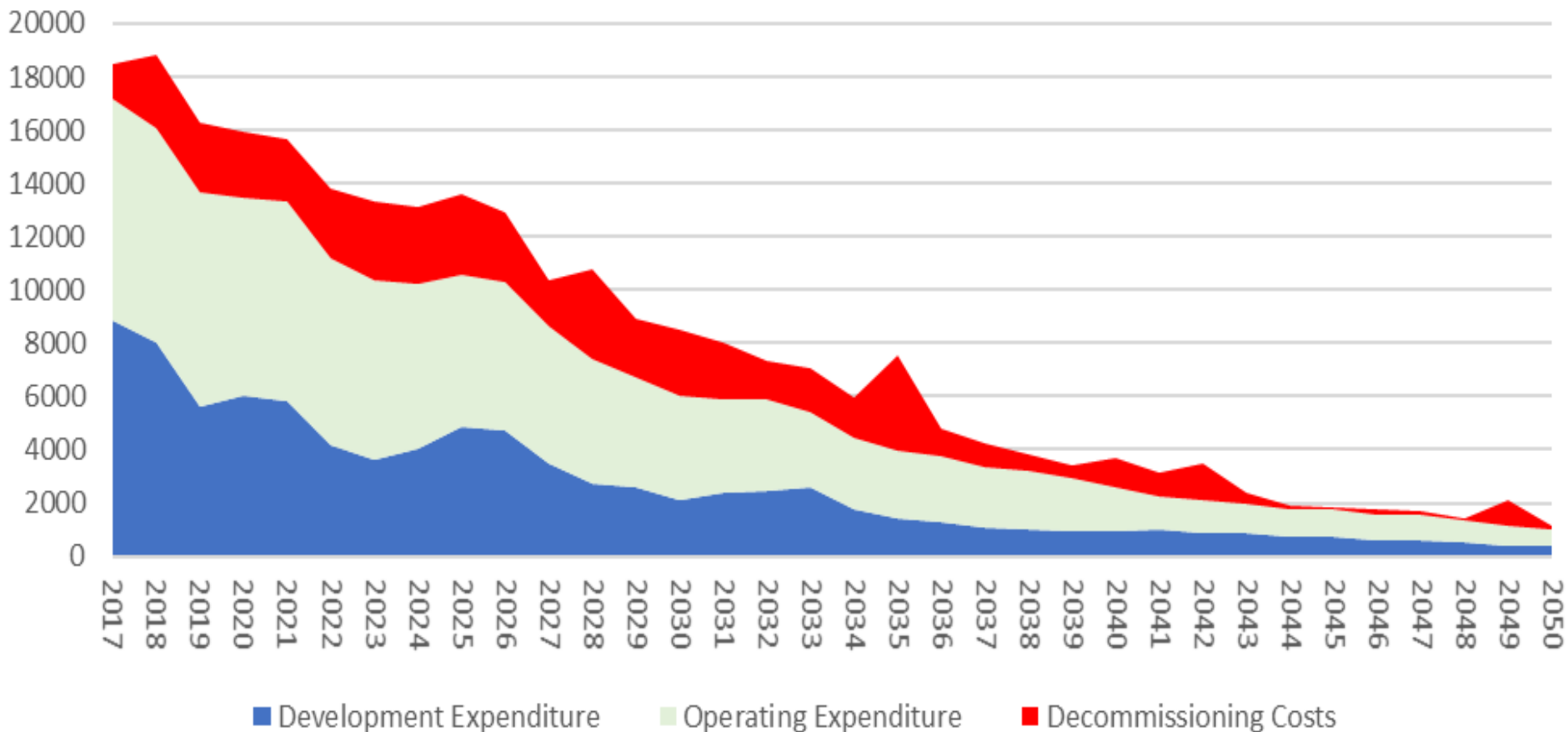
Real 2017 £m



Potential Total Field Expenditure \$60/bbl and 50p/therm

Hurdle : Real NPV @ 10%/Real Devex @ 10% > 0.3

Real 2017 £m



Cumulative Expenditures to 2050 (£bn 2017)

Hurdle NPV/I > 0.3

Prices	\$50 and 40 pence (real)	\$60 and 50 pence (real)
Development	63.6	89.3
Operating	101.6	123.7
Decommissioning	<u>52</u>	<u>54.2</u>
TOTAL	<u>217.2</u>	<u>267.2</u>

Financial Security (Government and Licensees)

1. Since Petroleum Act 1987 UK Government requires joint and several liability among licensees.
2. UK Government can also pursue former licensees unless release obtained from obligation.

Financial Security (Government and Licensees)

3. Bank Guarantee (LOC): Often required by UK Government, particularly after Tuscan Energy/Ardmore problem. Key features:
 - (a) Typically requirement triggered when RNPV falls below threshold value of decommissioning cost.
 - (b) Trigger value commonly = 150% of estimated decommissioning costs.

Financial Security

(Government and Licensees)

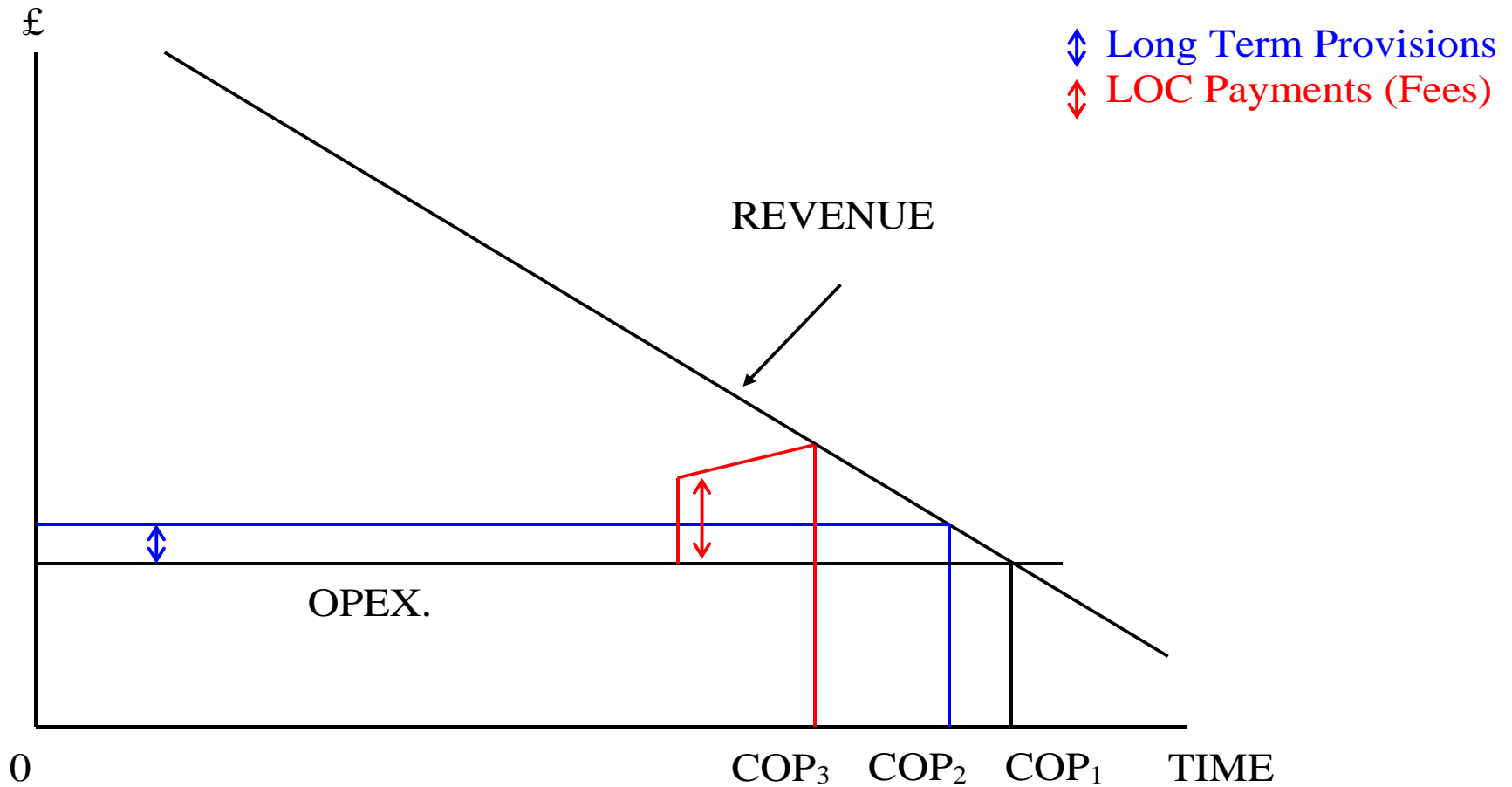
- (c) For very small fields Government can require LOC from time of field development.
- (d) Annual bank charges based on estimate of decommissioning cost. Precise amount also depends on credit rating of the licensee.
- (e) Fee is tax deductible.

Financial Security

(Government and Licensees)

- (f) Details of LOC have to be disclosed in company accounts and they reduce borrowing capacity.
- (g) Base for fee is after net cash flows from production and so cost base increases as field approaches COP date.
- (h) Presence of LOC accelerates COP date.

COP Timing with Decommissioning Security Payments



Financial Security (Government and Licensees)

4. Decommissioning Trust Fund (Escrow Account as variant) Key features:
 - (a) Monies deposited into Fund during life of field such that contributions plus net interest accrue to meet decommissioning costs.

Financial Security

(Government and Licensees)

(b) In UK contributions to a Trust Fund or provisions in escrow account not tax deductible. Debate on subject some years ago. Government argued that tax deductions should not be permitted until the relevant expenditure was incurred. Also, concern that over-provision would be encouraged. Gross Fund is obviously unattractive to investors.

Financial Security

(Government and Licensees)

(c) In UK fees paid to bank for LOC are tax deductible as are all decommissioning expenditures when they are incurred. Thus element of double cost to HMT.

Financial Security (Government and Licensees)

5. Parent Company Guarantee. Acceptable where parent (or associate) company is financially strong. Where this is not the case Government may require other form of security.
6. Financial Security Among Co-Licensees. When joint and several liability exists same security issues arise among co-licensees. In UK defaulting partner's costs are tax deductible for licensee who has to meet these costs.

Decommissioning Tax Relief for Costs

1. In UK over many years the tax relief rules gradually became clear and coherent with relief against PRT, CT and SC. Definition of the costs clarified, carry back indefinitely for PRT and to 2002 for CT and SC. Sideways and carry forward of relief for CT and SC also available.

Decommissioning Tax Relief for Costs

2. Drama of UK Budget 2011 and Consequences.

A.	<u>Pre-Budget</u>	<u>Post-Budget</u>
MR of Tax on income	CT + SC $0.3 + 0.2 = \underline{0.5}$	CT + SC $0.3 + 0.32 = \underline{0.62}$
Decom. Tax relief rate	<u>0.5</u>	<u>0.5</u>

CT and SC are profits taxes, therefore relief for all legitimate costs at the given rates. Capping decom. relief at 50% when rate on income 62% conceptually very dubious.

- B. Protests of industry on grounds of (i) conceptual dubiety, and (ii) increased uncertainty regarding future relief.
- C. Eventually result was DRD. A contract between licensees and Government guaranteeing tax relief for decommissioning, but for CT+SC at maximum rate of 50%. A major reduction in risk facing investors is key effect.

- D. The existence of DRD had other consequences. Fee for LOC could be based on post-tax decom. cost, not pre-tax as before. With CT+SC now = 40% the base of the LOC value is reduced by 40%. Results:
- i. As fee is opex in principle the COP date is put further into future
 - ii. The enhanced net cash flows can facilitate further E, A, D work.
 - iii. The lower value of any LOC fees are reflected in reduced amounts in company accounts. This enhances the debt capacity of the company.

Other Tax Complexities and Decommissioning Relief in UK

The current UK tax system includes CT@30% and SC@10%. As well as capital allowance on 100% first year basis for both CT and SC there is an Investment Allowance (IA) of 62.5% for SC. Thus relief for development costs =

$$0.3+0.1+0.625 (0.1) = \underline{46.25\%}.$$

IA is activated only when income commences from the field to which it relates.

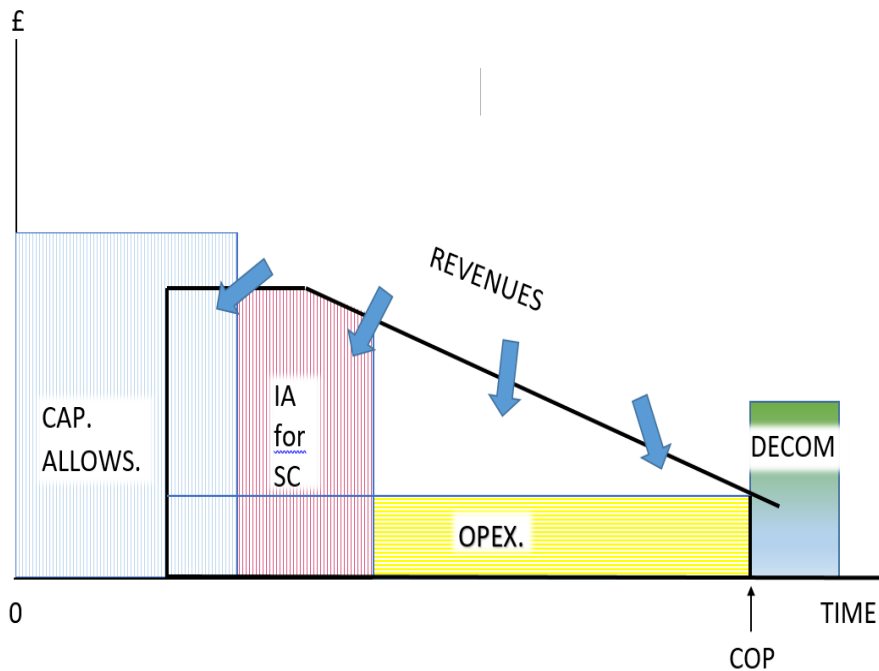
Other Tax Complexities and Decommissioning Relief in UK

Note that the IA is available for a discrete incremental project developed in late field life. Thus the various allowances can extend to later field life especially when the investor has no other income against which to set his capital allowance.

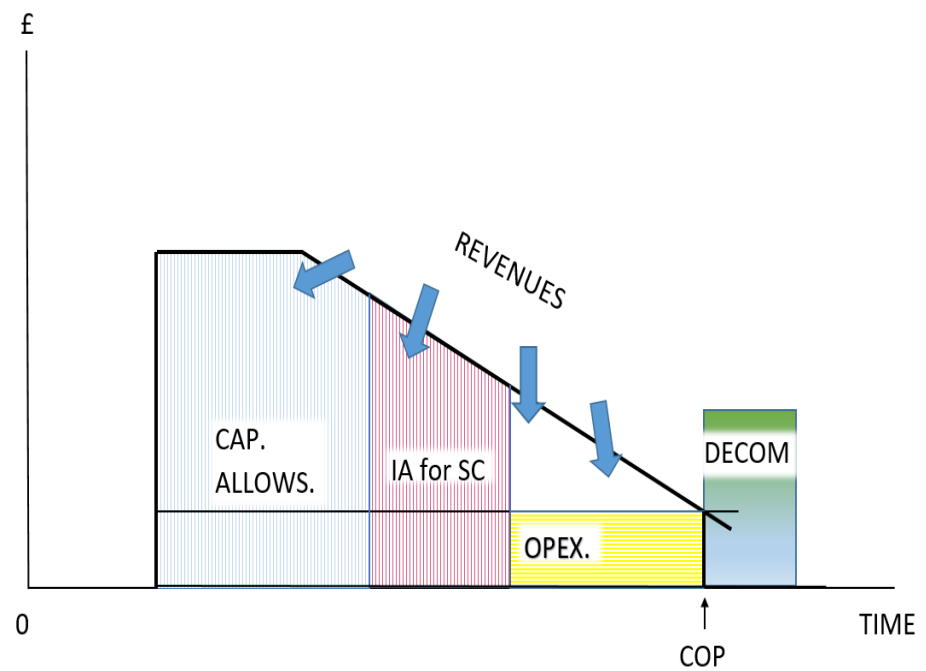
The tax rules are that decom. losses carried back displace the IA for SC. (They can also displace the small field allowance, HP/HT allowance and heavy oil allowance). The result is then that effective decom. relief for SC is reduced.

DECOMMISSIONING RELIEF FOR SUPPLEMENTARY CHARGE IN UKCS

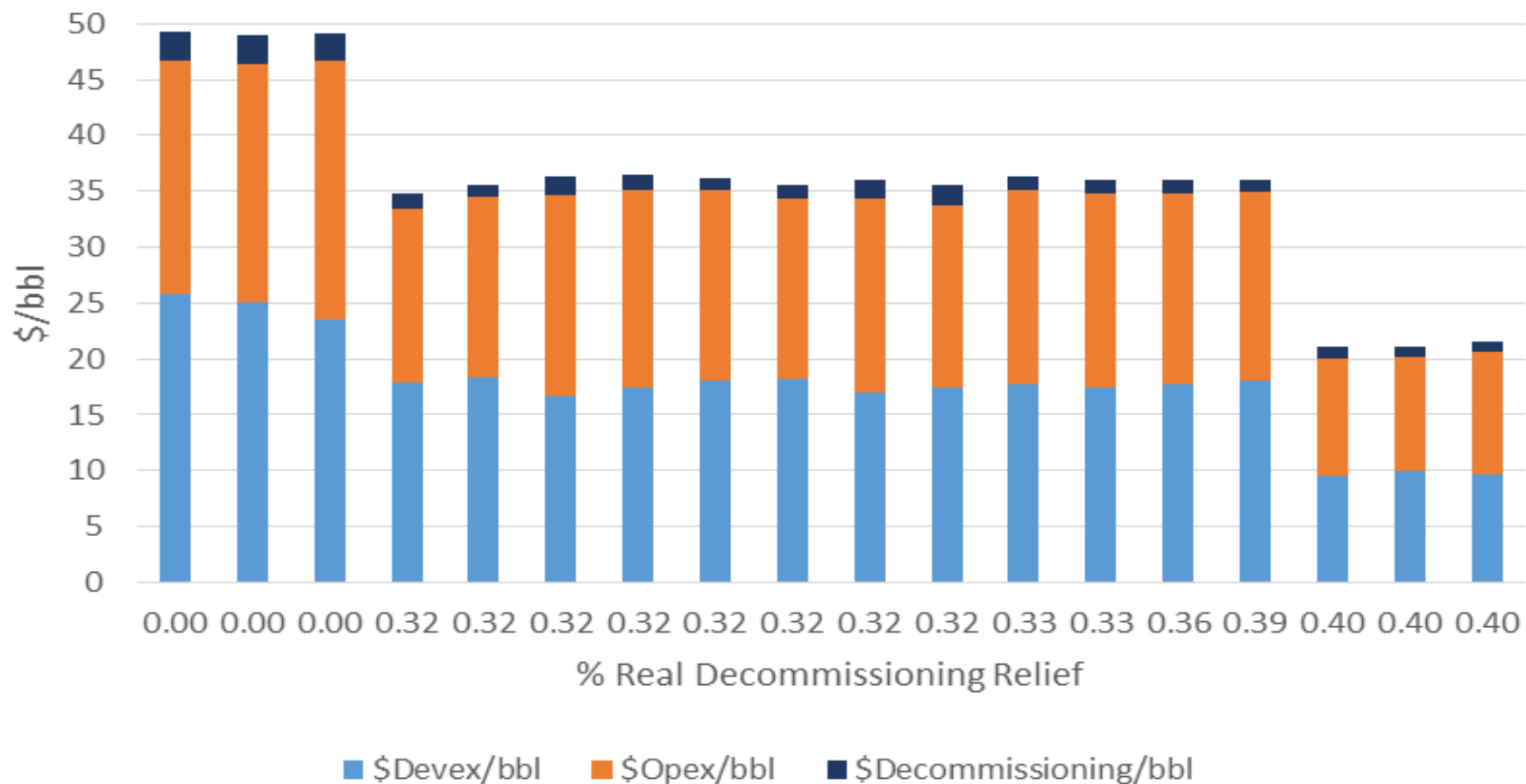
INVESTOR WITH OTHER FIELD INCOME



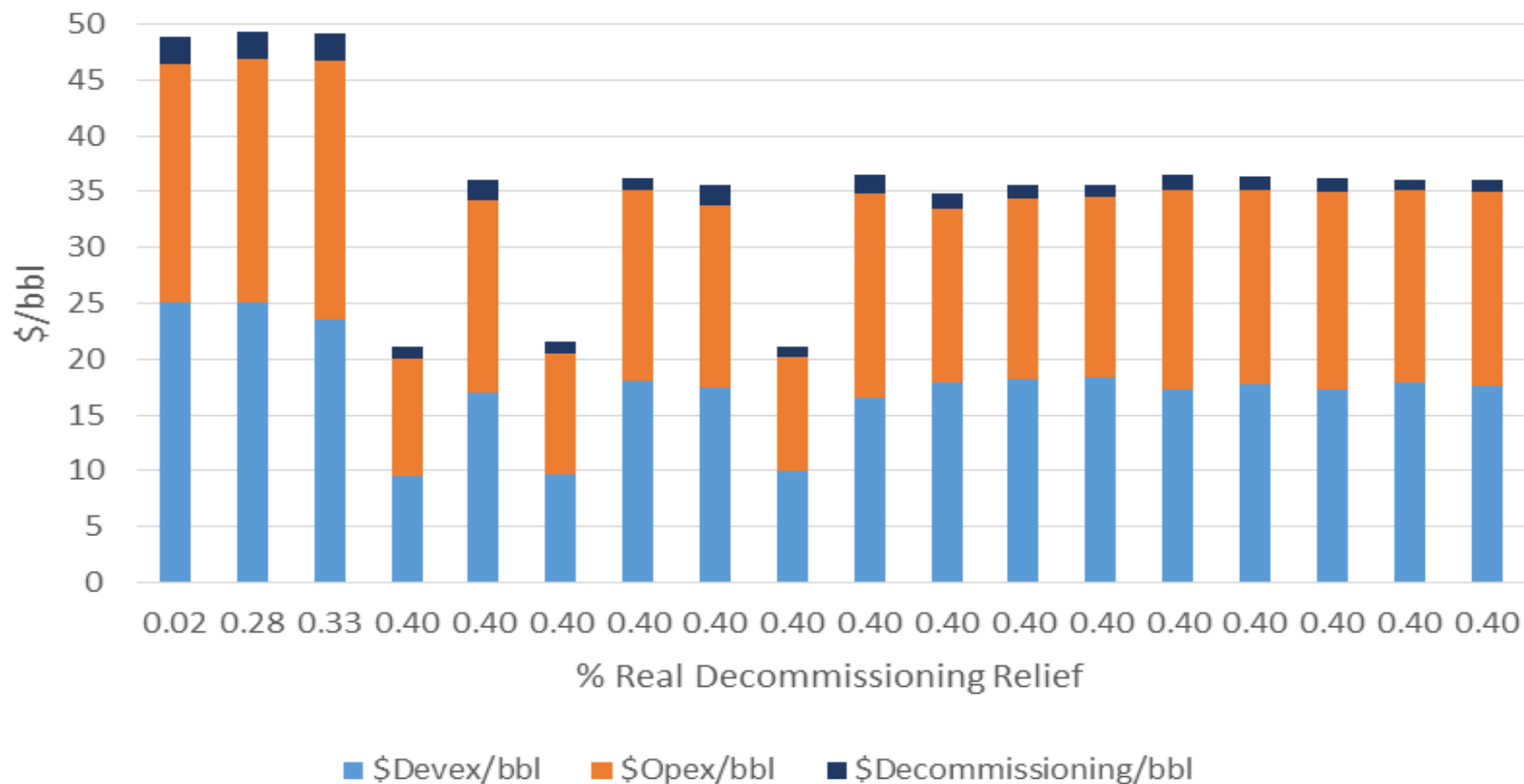
INVESTOR WITH NO OTHER FIELD INCOME



Real \$/bbl costs and Real Decommissioning Relief
 \$50/bbl
 Base year 2016



Real \$/bbl costs and Real Decommissioning Relief
 \$60/bbl
 Base year 2016



Other Tax Complexities and Decommissioning Relief in UK

PRT. The PRT rate is now 0%. It was 35% in 2015. This also affects decom. relief as shown in example:

	2015	2016	2017	2018
Taxable income for PRT (£m.)	200	100	100	
PRT paid (£m.)	70	0	0	
Decom. cost (£m.)	0	0	0	200
Decom. loss carried back (£m.)		100	100	
Decom relief (£m.)	0	0	0	

Decom loss is set against PRT income which is taxed at 0%, therefore no relief even when PRT has been paid in earlier years.

Decommissioning Relief and Late Field Life Asset Transactions

1. Late field life asset transactions are now common. Decom. issues can add great complications. Cost is high and income post-transaction may not be large. Seller could retain the decom. obligation but will not want to do so. Condition of asset he receives back is an issue.

Decommissioning Relief and Late Field Life Asset Transactions

2. Tax system should not have a negative effect on transactions. But RNPV of seller could exceed that of the buyer because seller obtains fuller decom. relief for CT and SC when the losses are carried back. Currently tax history for CT and SC cannot be transferred from seller to buyer as part of deal. If RNPV of seller > RNPV of buyer transaction may be inhibited.

Late life assets - example

Seller view	Pre-2015	2016	2017	2018	2019	2020	2021	2022	2023
Profits (ignoring decom)	500	300	300	150	100				
Decom						(50)	(150)	(350)	(200)
Tax (paid)/repaid	(250)	(120)	(120)	(60)	(40)	20	60	140	80
Pre-tax NPV(10) at 1 Jan 17			44						
Post-tax NPV(10) at 1 Jan 17			27						

Buyer view	Pre-2015	2016	2017	2018	2019	2020	2021	2022	2023
Profits (ignoring decom)			300	150	100				
Decom						(50)	(150)	(350)	(200)
Tax (paid)/repaid			(120)	(60)	(40)	20	60	140	
Pre-tax NPV(10) at 1 Jan 17			44						
Post-tax NPV(10) at 1 Jan 17			(14)						

Source: Ernst & Young

Result in table more likely the greater the decom. cost in relation to post-transaction profits. The later in field life is the transaction, the higher the possibility of seller's RNPV > that of buyer.

Decommissioning Relief for Real Fields Following Late Field Life Asset Transactions

Field		Buyer	Seller
A	\$50	26.8%	40%
	\$55	31.3%	40%
	\$60	35.8%	40%
	With Δ l 3 mmbbls	40%	40%
B	\$50	17.3%	40%
	\$55	30.8%	40%
	\$60	40%	40%
	With Δ l 3 mmbbls	40%	40%
C	\$50	23.6%	40%
	\$55	26.8%	40%
	\$60	29.9%	40%
	With Δ l 3 mmbbls	40%	40%

Decommissioning Relief for Real Fields Following Late Field Life Asset Transactions

Field		Buyer	Seller
D	\$50	9%	40%
	\$55	18.3%	40%
	\$60	33%	40%
	With Δ 3 mmbbls	40%	40%
E	\$50	34%	40%
	\$55	38%	40%
	\$60	40%	40%
	With Δ 3mmbbls	40%	40%
F	\$50	31.1%	40%
	\$55	40%	40%
	\$60	40%	40%
	With Δ 3mmbbls	40%	40%

Decommissioning Relief for Real Fields Following Late Field Life Asset Transactions

Field		Buyer	Seller
G	\$50	23.1%	36.9%
	\$55	32.5%	36.9%
	\$60	40%	37.1%
	With Δ 3 mmbbls	40%	
H	\$50	21%	39.6%
	\$55	23.4%	39.6%
	\$60	25.7%	39.6%
	Δ 3mmbbls		
	\$50	38.8%	40%
	\$55	40%	40%
	\$60	40%	40%
I	\$50	27.4%	40%
	\$55	31.3%	40%
	\$60	35.2%	40%
	Δ 3mmbbls		
	\$50	29.3%	37.2%
	\$55	37.2%	
	\$60	37.8%	

Decommissioning Relief for Real Fields Following Late Field Life Asset Transactions

Field		Buyer	Seller
J	\$50	28.9%	40%
	\$55	32.2%	40%
	\$60	35.4%	40%
	With ΔI 3mmbbls		
	\$50	40%	40%
	\$55	40%	40%
	\$60	40%	40%
K	\$50	37%	40%
	\$55	40%	40%
	\$60	40%	40%
	With ΔI 3mmbbls		
	\$50	38.4%	40%
L	\$50	13.2%	40%
	\$55	17.3%	40%
	\$60	23.1%	40%
	With ΔI 3mmbbls		
	\$50	17.3%	31.5%
	\$55	33%	40%
	\$60	36.8%	40%

Decommissioning Relief for Real Fields Following Late Field Life Asset Transactions

Field		Buyer	Seller
M	\$50	29.4%	40%
	\$55	34.3%	40%
	\$60	39.2%	40%
	With Δ 3mmbbls		
	\$50	19.5%	38.9%
	\$55	24.1%	38.9%
	\$60	31.4%	40%
N	\$50	38.3%	40%
	\$55	40%	40%
	\$60	40%	40%
	With Δ 3mmbbls		
	\$50	34.5%	36.5%
	\$55	37.2%	37.2%
	\$60	39.3%	39.3%

Decommissioning Relief for Real Fields Following Late Field Life Asset Transactions

Field		Buyer	Seller
O	\$50	27.7%	40%
	\$55	33.4%	40%
	\$60	39.3%	40%
	With Δ 3mmbbls		
	\$50	25.4%	37.2%
	\$55	36.1%	37.2%
	\$60	37.8%	37.8%
P	\$50	32.5%	40%
	\$55	38.0%	40%
	\$60	40%	40%
	With Δ 3mmbbls		
	\$50	28.9%	38.2%
	\$55	38.02%	38.2%
	\$60	38.58%	38.6%

Professor Kemp's Proposed Solution

1. At the time of the asset transaction an effective ring fence would be established around the expenditures and receipts directly relating to the asset in question.
2. The industry is used to the concept of ring fence and this should be regarded as a minor inconvenience to facilitate something which investors are requesting.

Professor Kemp's Proposed Solution

3. The cash flows within the newly-established ring fence would then be accumulated (without interest) until the end of field life and the subsequent decommissioning costs.
4. There would be no question of estimating future decommissioning costs with all the associated uncertainties.

Professor Kemp's Proposed Solution

5. If the final accumulated sum were negative the value in question would indicate the maximum amount of tax history which could be transferred.
6. Relief for the decommissioning costs would be given essentially as at present.

Professor Kemp's Proposed Solution

5. Thus the losses would initially be carried back against the last income from the field and appropriate refunds made.
6. Relief against transferred tax history amounts would be given last.

Monitoring Obligation and Residual Liability

- a. Currently in UKCS decommissioning plan has to be approved by BEIS and conform to OSPAR Convention. The latter provides for full removal but derogation is possible to leave in place (i) footings > 10,000 tonnes, and (ii) concrete jackets/legs where full removal extremely risky (safety) or environmentally damaging. Permission may be given to leave oil-based drill cuttings in place. Nowadays all platforms have to be constructed such that they can be removed.

Monitoring Obligation and Residual Liability

- b. OSPAR rules are reviewed every 5 years and can be changed then. It is possible that a decommissioning plan has been approved but new OSPAR regulations appear and plan has then to be amended. This constitutes a risk factor for investors.

Monitoring Obligation and Residual Liability

- c. In general 500 metre exclusion zone not required to continue after an approved decommissioning plan. If there are remains they have to be shown on charts and marked with buoys to warn other users of the sea. An awareness area may be required by BEIS in some cases.

Monitoring Obligation and Residual Liability

- d. Monitoring obligations post decommissioning are required with the details at discretion of BEIS. Full guidance not published. More promised. Typically they require (i) environmental surveys (often 2), (ii) surveys of footings (often 2), and (iii) surveys of pipelines. The obligations for (i) and (ii) typically for 3-5 years, but for pipelines could be 30 years. Fuller guidance promised from BEIS.

Monitoring Obligation and Residual Liability

- e. Monitoring costs are tax deductible as decommissioning costs for CT and SC (they were for PRT). Special arrangements made to permit this.
 - f. Investors have legal residual liability in perpetuity for accidents/damages relating to any remains. This could relate to other users of the sea such as submarines and shipping.
- (Cont.)

Monitoring Obligation and Residual Liability

- f. (Cont.) The contingent liability has to be noted in accounts and could affect credit rating. Investors in the UKCS (or other oil-producing countries) will not exist in perpetuity. The contingent liability could pass to a foreign-based affiliate of a company which has exited the UKCS. Some in industry feel that residual liability should not exist if a site were cleared to the Government's standards and was properly charted and buoyed.
(Con.)

Monitoring Obligation and Residual Liability

- f. (Cont.) Industry would like liability to pass to Government. Government reluctant to accept this.
- g. Methods of permitting liability on investors to be extinguished at no cost to the Government are being examined. (Cont.)

Monitoring Obligation and Residual Liability

- g. (Cont.) One idea which was discussed some years ago is to establish a Protection and Indemnity Club (P and I Club) such as exists for shipwrecks. This is essentially a traditional mutual funding vehicle for marine insurance. One idea is that individual licensees would pay a single premium to the club when a platform was decommissioned. (Cont.)

Monitoring Obligation and Residual Liability

- g. (Cont.) The premium would be sufficient to generate the annual cost of the required reinsurance premium. An advantage is that the members' funds would be locked into the club at the time of the decommissioning. If subsequently a member liquidated there would be no depletion of the funds of the club. (Con.)

Monitoring Obligation and Residual Liability

- g. (Cont.) The concept would be an industry solution owned by members. A problem is that the insurance industry is generally unwilling to accept a risk in perpetuity, though long term policies are quite well known. Some years ago the UK Government rejected industry proposal for the P and I Club.

Monitoring Obligation and Residual Liability

- h. An alternative would be for licensees to incorporate the risks in post decommissioning years in their own insurance policies. There is concern that such cover would become very expensive if losses did occur. A particular problem would be insurance against partner default. Perpetuity problem remains.

References

(can be found at <https://www.abdn.ac.uk/research/acreef/working-papers/>)

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- The Prospects for Activity I the UKCS to 2050 under “Lower for Longer” Oil and Gas Price Scenarios, and the Unexploited Potential, North Sea paper No. 138, by A G Kemp and L Stephen (February 2017) pp.86
- Can the Transfer of Tax History Enhance Later Field Life Transactions in the UKCS? ,North Sea Paper No.140, by A G Kemp and L Stephen (July 2017) pp.53