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# **ACCOUNTING PRACTICES IN THE EXTRACTIVE INDUSTRY**

**AN INTERNATIONAL INVESTIGATION, DISTINGUISHING  
BETWEEN MINING AND OIL & GAS COMPANIES**

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This publication was produced with the help of a grant from ICAEW's charitable trusts. These trusts support educational projects in accountancy and related subjects. All research reports and briefings published under ICAEW's charitable trusts imprint are independently refereed before publication. For more information on ICAEW's research project funding and related publications, please contact:

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# EXECUTIVE SUMMARY

- A key issue of accounting for extractive activities is the treatment of exploration and evaluation (E&E) costs.
- Previous academic research on E&E costs is mainly of two types: (i) old research on the politics of standard-setting in the US, reporting on the battle of 'successful efforts' versus 'full cost', and (ii) a small amount of recent research on IFRS practices (mostly on oil & gas companies) which mainly uses such policy labels, but in a context in which they are not defined.
- IFRS 6 was written as a temporary standard on E&E costs. IFRS literature made proposals in 2010 for a proper standard, which would cover mining and oil & gas. The favoured method would be somewhat similar to the US 'successful efforts' method but defer more costs. However, no formal proposals have been issued by the IASB since 2010.
- In this context, our research programme (of which this report is a part) investigates the international variety of practice under IFRS 6. This report investigates the range of E&E policy methods used by extractive companies and the location of extractive assets on balance sheets.
- Our sample focuses on the three IFRS-using countries with the largest number of listed extractive companies: Australia, Canada and the UK. We start with 25 mining and 25 oil & gas companies from each. After some deletions (eg, for foreign influence), our sample comprises 129 companies.
- We have proposed a classification system of E&E policies, for the use of analysts, standard-setters and researchers. It distinguishes policies by the range of E&E costs deferred, and the size of pool for impairment calculations. We identify 11 methods. For 10 of these, we show IFRS examples; and the remaining one is found in US GAAP.
- Policy labels (successful efforts, area of interest, and full cost) are extensively used by Australian and UK companies, though not Canadians. Previous research has relied mainly on these policy labels. However, many companies using such labels do not conform to any authoritative definition (current or past). We provide examples of this and of the blurring of the distinction between the E&E phase and the development phase.
- Our findings on E&E policies reveal clear differences between the sub-industries (mining versus oil & gas). Mining companies use more conservative policies than oil & gas companies. This might relate, at least partly, to underlying physical and economic features between the sub-industries.
- There are also clear international differences in policy choice. Each country has its own predominant method, seemingly related to pre-IFRS custom. Thus, there is an argument for reducing the differences, in order to increase international comparability of reporting.

## EXECUTIVE SUMMARY

- There is also a clear international difference in the location of E&E assets in balance sheets. A majority of UK companies shows them as intangibles; and only UK companies do that. This again can be traced to pre-IFRS practices.
- One practical implication of our findings is that analysts and researchers should not rely on the policy labels disclosed by companies. Related to this, analysts and researchers should also note that some companies do not clearly distinguish between E&E costs (on which IFRS 6 offers wide policy choice) and development costs (which fall outside of IFRS 6, and do not involve policy choice).
- The policy implication for the IASB is that terms should be defined, and that companies should not be allowed to use undefined labels.
- A conclusion from elsewhere in our research programme is that E&E costs should be covered by an amended IAS 38, which would extend deferral to non-extractive development costs before appraisal for viability. Here we add that it would be helpful to standardise the presentation of such amounts as intangible assets.

# 1. INTRODUCTION

Accounting for exploration and evaluation (E&E) costs is one of the last major issues to remain largely unregulated by IFRS, despite extractive companies being a major part of several large stock markets, including those of Australia, Canada and the United Kingdom. A temporary permissive standard (IFRS 6, Exploration for and Evaluation of Mineral Resources), has been in place since 2004. Under this, companies use a wide range of accounting policies for E&E costs and related assets.

The IASB was expecting that many companies would continue to use their pre-IFRS policies for E&E costs. The policies would be based on national requirements or custom and influenced by managements' various incentives. This variety of practices strikes at one of the core purposes of IFRS: to reduce variety in order to improve comparability. In 2018, this topic was activated as part of the IASB's formal research programme; and it was discussed at several Board meetings in 2020 and 2021.

As part of a project funded by the ICAEW Charitable Trusts, we have collected a large amount of data on this topic from the IFRS annual reports of extractive companies. One output from this work has been a detailed description of all the different policies for E&E costs which are found in practice, divided into 11 types by degrees of conservatism. It included the creation of a classification scheme, showing how the types are related. This has been published in the Australian Accounting Review (Nobes and Stadler, 2021). In that article, we provided suggestions on how the IASB could replace IFRS 6. Another output has been a statistical analysis of the survey of IFRS practices, using the above classification. This has been made publicly available (Stadler and Nobes, 2021). Our two academic articles have been referred to in IASB Board papers, for example in the July 2020 meeting (Simpson and Craig, 2020).

This report provides and discusses some of the data that we have collected, including on:

- The range of E&E costs capitalised.
- The pooling methods used to test E&E costs for impairment.
- How E&E assets are shown in financial statements (separately disclosed on the balance sheet or not; as tangibles, as intangibles or as a special category).

We hope that our two academic articles (mentioned above) and this report will be useful to investment analysts and to the IASB as it considers how to improve accounting by extractive companies.

The report proceeds as follows:

- Section 2 examines relevant previous regulatory and academic literature.
- Section 3 explains the sample of extractive companies used in this report.
- Section 4 reports and discusses our findings.
- Section 5 summarises our policy conclusions.

## 2. IFRS LITERATURE AND THE FINDINGS OF PREVIOUS RESEARCH

### 2.1 INTRODUCTION

This section examines the relevant literature in three parts: pre-IFRS, IFRS regulatory ('authoritative') literature, and academic findings on IFRS practices. The pre-IFRS literature is of use here because it helps in understanding the background to the present variety in IFRS practices. It also reveals the political sensitivity of the topic and how highly-charged the debate can get. It reveals, too, the importance of distinguishing between the mining and oil & gas sub-sectors.

The IFRS authoritative literature (apart from IFRS 6 itself) is in the form of a Summary of Issues from a steering committee of the International Accounting Standards Committee (IASC, 2000) and an IASB discussion paper (IASB, 2010).

Given the lack of any change to IFRS 6 since its publication in 2004, there has been little recent published research in the area. We summarise it in Section 2.4 below.

The academic literature in the whole field has been reviewed by Gray et al. (2019).

### 2.2 PRE-IFRS LITERATURE

This literature is largely related to major standard-setting battles in the United States in the 1970s that led to permission to use two very different methods: 'full cost' and 'successful efforts'. There was a three-way argument between the Financial Accounting Standards Board (FASB), the Securities and Exchange Commission (SEC) and the extractive companies. The following papers are particularly relevant: Deakin (1989), Gorton (1991), Zeff (2007), Cortese et al. (2010), and Cortese (2011). Some conclusions are:

- The literature is nearly all confined to oil & gas companies rather than mining companies.
- The FASB had wanted to standardise on the conservative 'successful efforts' method, but was pressurised by the SEC (itself pressurised by some of the companies) to allow 'full cost' as well.
- 'Senior' diversified companies had largely already adopted successful efforts, but 'junior' undiversified companies wanted full cost.

One further pre-IFRS paper is important: Luther (1996). This studied the development of accounting requirements for the extractive industry in five English-speaking countries: Australia, Canada, South Africa, the UK and the USA. Luther focused mainly on the mining sub-sector, and concluded that the requirements in all countries were permissive. From the 1970s, Australian standards used an approach intermediate in conservatism between the two US methods, involving 'areas of interest'. In the UK, a Statement of Recommended Practice (SORP) set out versions of the full cost and successful efforts methods, though differently defined from the US versions (see OIAC, 2001). Luther discusses the special features of extractive companies:

- finite lives of projects;
- weak link between costs and revenues;
- great uncertainty;
- capital intensiveness; and
- high level of pressure for public accountability.

## 2.3 AUTHORITATIVE IFRS LITERATURE

The two papers from the standard setters, mentioned in Section 2.1, were not taken forward by the IASC/IASB. The Summary of Issues of 2000 tentatively concluded that:

- A standard on E&E costs should cover both mining and oil & gas.
- Balance sheet figures should continue to be based on historical costs, and pre-acquisition costs should be expensed.
- A form of 'successful efforts' should be adopted, with accumulation of costs by geological units (which sounds like 'areas of interest').

The IASB's Discussion Paper of 2010 largely agreed with these conclusions, proposing that the recognition of assets should be based on legal rights acquired, but that the costs of obtaining information could be added to this asset, which would involve more capitalisation than under the successful efforts method.

Between the dates of those two investigations by the standard-setters, IFRS became widely used around the world, particularly starting with the adoptions in 2005 in the European Union and Australia. This meant that it was urgent to create some form of standard on extractive accounting. Otherwise, companies would have to use existing standards (eg, IAS 38, Intangible Assets) which would have led to major changes in practice before the issue had been properly considered by the IASB.

Therefore, the IASB issued IFRS 6 in 2004. Its main effect is to allow companies to continue pre-IFRS practices. For example, it exempts companies from most of the normal requirements under IAS 8 (Accounting Policies, Changes in Accounting Estimates and Errors) when developing accounting policies. The scope of IFRS 6 is 'exploration and evaluation' (E&E) costs. This is an important point when applying IFRS or interpreting IFRS financial statements. The E&E phase starts once legal rights to explore have been obtained. Before that point, companies might spend 'pre-licence costs', but these must be expensed under IAS 38. The E&E phase stops when the E&E discoveries have been evaluated and can be demonstrated to be commercially viable. They then become 'development' and fall outside of IFRS 6. The costs from then on should be capitalised because they meet the criteria in IAS 38 for the capitalisation of development.

Thus, the costs before and after IFRS 6's scope of E&E costs do not involve policy choice, but the costs under IFRS 6 can be treated in a wide range of different ways.



## 2.4 RESEARCH INTO PRACTICES UNDER IFRS 6

Published research on practices under IFRS 6 is rare but includes: KPMG (2006), Abdo (2016), Power et al. (2017), Hammond and Craig (2020), and Constantatos et al. (2021).

The first three are not systematic international surveys. The Abdo and Power et al. papers mainly deal with London-listed companies, so they cannot report on international diversity of practice. Some of the findings are:

- The KPMG publication contains a small amount of dated evidence of a country pattern in the treatment by mining companies of E&E costs.
- Abdo reports that 47% of companies were using successful efforts, 28% full cost, 9% area of interest, and 16% no clear method.
- Power et al. found that 71% of oil & gas companies used successful efforts and 29% full cost, whereas 23% of mining companies expensed all E&E costs, 75% used successful efforts and 2% full cost.

The last two papers in the list at the start of this sub-section are more recent larger-scale international surveys:

- Hammond and Craig found extensive use of 'area of interest' but very limited use of successful efforts or full cost; and more expensing by mining companies than by oil & gas companies.
- Constantatos et al. found that 'successful efforts' was common in Canada and the UK, but 'area of interest' in Australia. Mining companies have more varied practices than oil & gas companies.

However, none of these researchers investigated whether the companies use the methods as defined in US GAAP, UK GAAP or in Australia. They rely largely on the labels disclosed by the companies. In our research as part of this project (Stadler and Nobes, 2021), we found that companies referring to 'successful efforts' and 'full cost' were mostly not using the US methods or the former UK methods. We give some examples in Section 4.2.

In our published research under this project (Nobes and Stadler, 2021), we assessed the large number of policy methods found in practice under IFRS 6. We created a classification scheme for them (see Section 4.1 below). We also assessed whether the methods comply with IFRS 6 and other aspects of IFRS, concluding that they do. Prima facie, this suggests the need for a reduction in choice, in order to increase international comparability of reporting by extractive companies. We suggested that the ultimate goal could be as follows:

- Withdraw IFRS 6, and extend IAS 38's scope to include E&E costs.
- Find a new term for 'development' in the extractive context, because it is narrower than the term in IAS 38.
- Amend IAS 38 to require the deferral of development costs (as widely defined to include E&E costs) until assessment of viability, subject to impairment testing.
- Include guidance in IAS 38 about how to assess viability in the context of E&E costs.

This would also address another issue: the criticism that not enough intangibles are shown in balance sheets, causing a widening gap between book and market values.

### 3. OUR SAMPLE OF EXTRACTIVE COMPANIES

We begin our sample selection by identifying 150 oil & gas and mining companies from Australia, Canada and the UK. Details are described in an appendix to this report. We download the annual reports of our sample companies for the accounting period ending on 31 December 2017 or nearest after. Our initial sample reduces to 129 companies for reasons shown in Table 1 and explained in the appendix. For example, we exclude companies where an inspection of the annual report shows that they have no E&E activity.

**TABLE 1: SAMPLE**

	AUSTRALIA	CANADA	UK	TOTAL
Initial companies	50	50	50	150
Excluded:				
- Annual report missing	1	-	-	1
- Not extractive	1	-	1	2
- No E&E activity	2	2	-	4
- Not IFRS	-	1	-	1
- Subsidiary of another company included in the sample	2	1	1	4
- Company included under two countries	1	-	1	2
- Missing data	1	-	-	1
- Foreign company	3	1	2	6
Companies	39	45	45	129

We then hand-collect the following data on E&E policies: (1) whether or not exploration rights costs, pre-appraisal costs and G&G costs are capitalised; and (2) the size of the cash generating unit (CGU) for impairment. We also hand-collect data on the location of the E&E asset on the balance sheet.

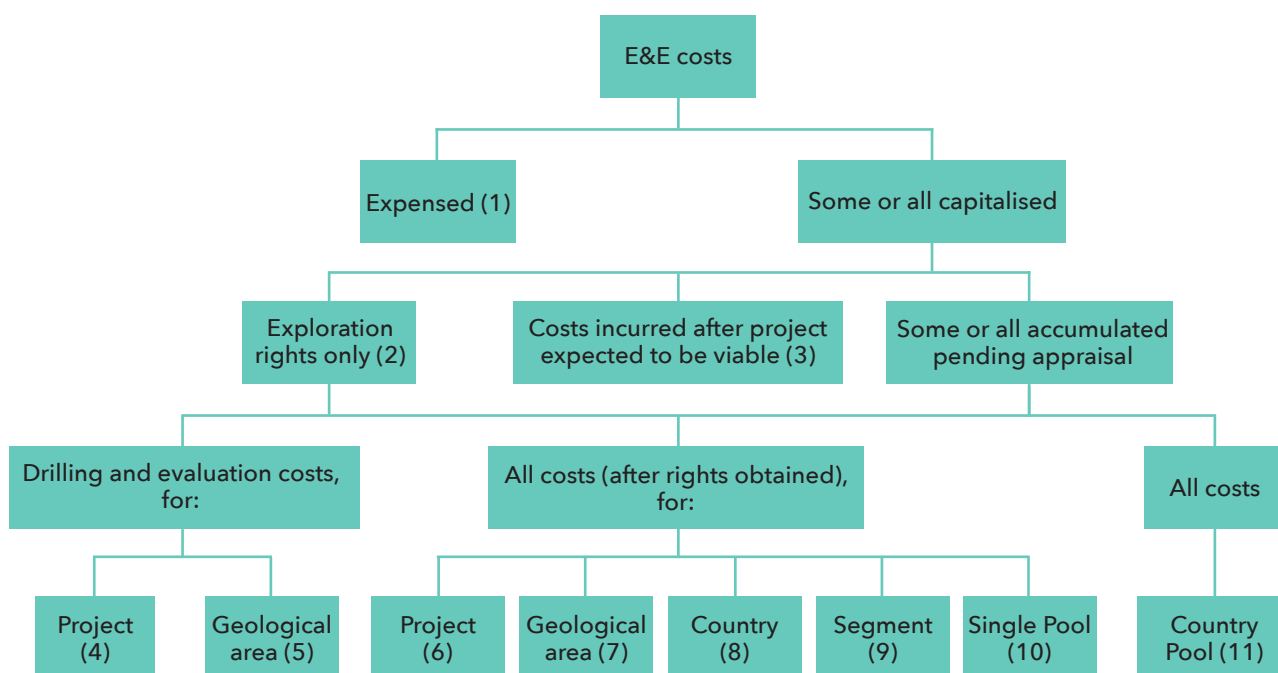
# 4. OUR FINDINGS

## 4.1 A CLASSIFICATION OF E&E PRACTICES

Our investigation of the annual reports of our sample of IFRS companies plus some US reports for contrast revealed a large range of practices for E&E costs. We focussed on two aspects: the range of costs capitalised, and the size of pool for testing of impairment. A small range of costs and a small pool for impairment testing could be called a more 'conservative' approach. Of course, the most conservative approach is immediate expensing of all E&E costs.

Figure 1 shows our own classification system. It is a slightly refined version (see the Table footnote) of that published in our article in Australian Accounting Review, referred to in Section 1. Approximately speaking, Method 1 is the most conservative, and Method 11 the least. We hope that this figure will help standard-setters, preparers, auditors and readers of financial statements. In Table 2, we give examples of each of these 11 methods from the annual reports of companies. In the case of Methods 1 to 10, these are all from our sample of IFRS companies. However, Method 11 was not found in our sample, because it involves capitalisation of pre-licence costs (see Section 2.3). However, since Method 11 corresponds to the US version of the 'full cost' method, we give an example of a US company.

**FIGURE 1: CLASSIFICATION OF E&E POLICY METHODS BY DEGREE OF CONSERVATISM**



Note: This figure is a refined version of Figure 1 of Nobes and Stadler (2021). First, for Method 2, we use the more precise 'Exploration rights only' rather than 'Acquisitions only'. Second, for Method 3, we use the more precise 'after project expected to be viable' rather than 'after project appraised as viable'. Third, for Methods 4 to 11, we have improved the wording.

TABLE 2: EXAMPLES OF POLICIES FOR E&amp;E COSTS FROM IFRS ANNUAL REPORTS

METHOD	POLICY	EXAMPLE
1.	Expense all costs related to E&E	'The expenditures include acquisition of rights to explore, topographical, geological, geochemical and geophysical studies, exploratory drilling, trenching, sampling, activities in relation to evaluating the technical feasibility and commercial viability of extracting mineral resources. These costs are expensed as incurred.' (Evraz, 2017 Annual Report & Accounts, p.172; UK)
2.	Expense all costs except exploration rights	'Exploration and evaluation costs are expensed as incurred. Acquisition costs of rights to explore are capitalised in respect of each separate area of interest and carried forward where right of tenure of the area of interest is current.' (Central Petroleum, 2018 Annual Report, p.46; Australia)
3.	Expense E&E costs except those incurred after an E&E asset is expected to be viable, which are deferred pending appraisal of whether viability is demonstrable	'Project costs in relation to these activities are expensed as incurred until such time as the Company expects that mineral resources will be converted to mineral reserves within a reasonable period. Thereafter, costs for the project are capitalized prospectively as capitalized exploration and evaluation costs in property, plant and equipment. [...] Acquired or capitalized E&E costs for a project are classified as such until the project demonstrates technical feasibility and commercial viability. Upon demonstrating technical feasibility and commercial viability, and subject to an impairment analysis, capitalized E&E costs are transferred to capitalized development costs within property, plant and equipment. Technical feasibility and commercial viability generally coincides with the establishment of proven and probable mineral reserves.' (Kinross Gold, 2017 Annual Report, p.FS15; Canada)
4.	Expense E&E costs except drilling and evaluation, which are deferred until appraisal; then expense the deferred costs unless related to a successful project of mine/well or field/license [US 'successful efforts']	'Oil and natural gas exploration, appraisal and development expenditure is accounted for using the principles of the successful efforts method of accounting [...] Exploration licence and leasehold property acquisition costs are capitalized within intangible assets [...] Geological and geophysical exploration costs are recognized as an expense as incurred. Costs directly associated with an exploration well are initially capitalized as an intangible asset until the drilling of the well is complete and the results have been evaluated.' (BP, 2017 Annual Report and Form 20-F, p.132; UK)
5.	As 4, but widen the asset tested to geological area	'Costs related to the exploration for and evaluation of hydrocarbon resources, including costs of acquiring unproved property, drilling and completing exploratory wells and estimated asset retirement costs, are initially capitalized, pending determination of technical feasibility and commercial viability. [...] Exploratory geological and geophysical costs, pre-license costs, and annual lease rentals are expensed as incurred. [...] For the purpose of impairment testing, non-financial assets are tested individually or, in certain circumstances, grouped together into a cash-generating unit ("CGU"), which consists of the smallest group of assets that generate cash inflows that are largely independent of the cash inflows of other assets or groups of assets. Following two significant acquisitions in 2017, the Company's conventional operations have been re-grouped into four new CGUs: the Grande Prairie CGU, the Kaybob CGU, the Central Alberta CGU and the Northern CGU. The Company's non-conventional E&E assets associated with the Shale Gas Project form a fifth CGU for the purposes of impairment testing.' (Paramount Resources, 2017 Annual Report, pp.59+60; Canada)

TABLE 2: EXAMPLES OF POLICIES FOR E&amp;E COSTS FROM IFRS ANNUAL REPORTS

METHOD	POLICY	EXAMPLE
6.	Defer all E&E costs until appraisal; then expense the deferred costs unless related to a successful project	<p>‘Exploration and evaluation costs arising following the acquisition of an exploration licence are capitalised on a project-by-project basis, pending determination of the technical feasibility and commercial viability of the project. Costs incurred include appropriate technical and administrative overheads. [...] Impairment reviews for deferred exploration costs are carried out on a project-by-project basis, with each project representing a potential single cash generating unit.’</p> <p>(Solgold, 2018 Annual Report, pp.78+79; UK)</p>
7.	As 6, but widen the pool tested to geological area	<p>‘Costs incurred prior to obtaining the right to explore a mineral resource are recognized as an expense in the period incurred. Intangible exploration and evaluation expenditures are initially capitalized and may include mineral license acquisitions, geological and geophysical evaluations, technical studies, exploration drilling and testing and other directly attributable administrative costs. Tangible assets acquired which are consumed in developing an intangible exploration asset are recorded as part of the cost of the exploration asset. These costs are accumulated in cost centres by exploration area pending the determination of technical feasibility and commercial viability. [...] For purposes of impairment testing, exploration and evaluation assets are allocated to CGUs. [...] CGUs have been determined based on similar geological structure, shared infrastructure, geographical proximity, operating structure, commodity type and similar exposures to market risks.’</p> <p>(Birchcliff Energy, 2017 Annual Report, pp.103+107+108; Canada)</p>
8.	As 6, but widen the pool to country	<p>‘The costs of exploring for and evaluating oil and gas properties, including the costs of acquiring rights to explore, geological and geophysical studies, exploratory drilling and directly related overheads, are capitalised and classified as intangible E&amp;E assets. These costs are directly attributed to regional CGUs for the purposes of impairment testing; UK &amp; Ireland and Africa.’</p> <p>(Serica Energy, 2017 Annual Report &amp; Financial Statements, p.46; UK)</p>
9.	As 6, but widen to segment	<p>‘Exploration and evaluation (“E&amp;E”) expenditures are initially capitalized within “Exploration and evaluation assets”. E&amp;E costs may include the costs of acquiring licenses, technical services and studies, seismic acquisition, exploration drilling and testing costs and directly attributable general and administrative costs. [...] E&amp;E assets are tested for impairment at the operating segment level.’</p> <p>(NuVista Energy, 2017 Financial Report, p.9; Canada)</p>

TABLE 2: EXAMPLES OF POLICIES FOR E&amp;E COSTS FROM IFRS ANNUAL REPORTS

METHOD	POLICY	EXAMPLE
10.	As 6, but widen to single pool CGU	<p>'Pre-acquisition costs on oil and gas assets are recognised in the Income Statement when incurred. Costs incurred after rights to explore have been obtained, such as geological and geophysical surveys, drilling and commercial appraisal costs and other directly attributable costs of exploration and appraisal including technical and administrative costs, are capitalised as intangible exploration and evaluation ("E&amp;E") assets. The assessment of what constitutes an individual E&amp;E asset is based on technical criteria but essentially either a single licence area or contiguous licence areas with consistent geological features are designated as individual E&amp;E assets. [...] Once active exploration is completed the asset is assessed for impairment. [...] The Group's oil and gas assets are analysed into cash generating units ("CGU") for impairment review purposes, with E&amp;E asset impairment testing being performed at a grouped CGU level. The current CGU consists of the Group's whole E&amp;E portfolio.'</p> <p>(Faroe Petroleum, 2017 Annual Report and Accounts, p.89; UK)</p>
11.	Capitalise all E&E costs including those before legal rights are obtained; ceiling test on a country basis [US 'full cost' method]. Not allowed under IFRS, so US example given here.	<p>'We use the full cost method of accounting for our oil and gas operations. All costs associated with property acquisition, exploration, and development activities are capitalized. Exploration and development costs include dry hole costs, geological and geophysical costs, direct overhead related to exploration and development activities, and other costs incurred for the purpose of finding oil and gas reserves. [...] Under the full cost method of accounting, we are required to perform quarterly ceiling test calculations to test our oil and gas properties for possible impairment.'</p> <p>(Cimarex Energy, 2020 Form 10-K, p.60; USA)</p>

## 4.2 DIFFICULTIES IN DISCERNING E&E PRACTICES

On the whole, the policy disclosures made by extractive companies under IFRS are adequate. They enabled us to identify which of the detailed methods in Figure 1 our sample companies used, as we explain in Section 4.3 below. However, we will first explain why we did not use data based on labels such as 'full cost', 'successful efforts' or 'area of interest'. These labels are prevalent among Australian and UK companies, though not Canadian companies. Previous researchers assessed companies' policy choices largely by looking at these labels.

The problem here is that IFRS 6 does not define (or even mention) these labels. US GAAP does define two of them: the US version of the 'successful efforts' method is our Method 4 (see Figure 1 and Table 2), and the US version of the 'full cost method' is our Method 11. The former UK SORP had a similar version of 'full cost' but a version of 'successful efforts' which also deferred pre-acquisition costs. Since this is not allowed under IFRS 6, it is not now found in practice.

Thus, any IFRS company which reports the use of 'full cost' is not using a method as defined in any accounting standard (current or past). An example of a 'full cost' disclosure (from page 34 of the 2020/21 Annual Report of Indus Gas, a UK company) is:

The Group adopts the full cost method of accounting for its oil and gas interests, having regard to the requirements of IFRS 6: Exploration for and Evaluation of Mineral Resources. Under the full cost method of accounting, all costs of exploring for and evaluating oil and gas properties, whether productive or not are accumulated and capitalized by reference to appropriate cost pools. Such cost pools are based on geographic areas and are not larger than a segment. [...] Exploration and evaluation costs may include costs of license acquisition, directly attributable exploration costs such as technical services and studies, seismic data acquisition and processing, exploration drilling and testing, technical feasibility, commercial viability costs, finance costs to the extent they are directly attributable to financing these activities and an allocation of administrative and salary costs as determined by management. All costs incurred prior to the award of an exploration license are written off as a loss in the year incurred.

The 'having regard to the requirements of IFRS 6' (in lines 1 and 2) is a clue that this is not the former UK version of 'full cost'. For example, it does not defer pre-licence costs.

Similarly, many companies that report 'successful efforts' are not following any authoritative definition. For example, the policy note of Hurricane Energy, a UK oil company follows (from the 2020 Annual Report and Group Financial Statements, p.109):

The Group follows the successful efforts method of accounting for oil and gas exploration and evaluation activities (intangible exploration and evaluation assets) as permitted by IFRS 6 'Exploration for and Evaluation of Mineral Resources'.

Pre-licence costs, which relate to costs incurred prior to having obtained the legal right to explore an area, are charged directly to the income statement within operating expenses as they are incurred. Once a licence has been awarded, all licence fees and exploration and appraisal costs relating to that licence are initially capitalised in well, field or specific exploration cost centres as appropriate pending determination. These costs include directly attributable staff and related overhead expenditure, which is allocated to assets via the Group's timewriting process. Expenditure incurred during the various exploration and appraisal phases is then written off unless commercial Reserves have been established or the determination process has not been completed.

When commercial Reserves have been found and a field development plan has been approved, the net capitalised costs incurred to date in respect of those Reserves are transferred into a single field cost centre and reclassified as oil and gas properties within property, plant and equipment (subject to an impairment test before reclassification).

This policy does not fit the US version of 'successful efforts' because it defers a wide range of costs. The policy does not fit the former UK version of 'successful efforts' because that would have involved deferring pre-licence costs.

Researchers and analysts should also note that the description of the 'expense all' policy (our Method 1) as used by the previous researchers mixes up E&E with 'development'. The policy of 'expense all' of Power et al. (2017, Table 1) and Constantatos et al. (2021, Table 4.3) is defined in 270 words, of which the opening and closing sentences are:

All exploration expenditure is expensed until it is determined to have an associated future economic benefit. [...] Once an associated future benefit in relation to expenditure is determined, future exploration expenditure is capitalised.



However, as discussed at the end of Section 2.3, once economic benefit has been 'determined', the costs fall outside of the E&E phase and thus outside of IFRS 6 and thus involve no policy choice. So, the long description could be abbreviated to the first five words (replacing 'exploration' with 'exploration and evaluation'). Part of the confusion comes from the fact that evaluation activity could still continue in the development phase. The following is an example policy from a UK miner (Pan African Resources, 2021 Integrated Annual Report, p.172):

Mineral exploration and evaluation costs are expensed in the year in which they are incurred until they result in projects that the Group:

- evaluates as being technically or commercially feasible
- has sufficient resources to complete development
- can demonstrate will generate future economic benefits.

Once these criteria are met, all directly attributable development costs and ongoing mineral exploration and evaluation costs are capitalised within property, plant and equipment and mineral rights

This is an 'expense all' policy for E&E costs, despite the 'until' and 'Once' in the quotation.

### 4.3 OUR FINDINGS ON E&E POLICY METHODS

Given the above problems of relying on policy labels such as ‘successful efforts’, we do not report data on these labels here. Instead, we use the classification in Figure 1, and collect the data needed to locate companies within it. We do this for the 129 companies in our sample, by investigating the detailed accounting policies disclosed in their annual reports.

As expected (see Section 4.1), we did not find any example of Method 11, but we did find examples of all the other 10 methods. Table 3 shows our findings, divided into the three countries and the two sub-industries.

Two patterns stand out in Table 3. First, the most conservative methods are clearly more prevalent among mining companies than among oil & gas companies. Secondly, each country has its predominant method: (i) full deferral of costs with impairment by (geological) area for Australian miners, (ii) ‘expense all’ for Canadian miners, and (iii) full deferral with impairment by project for UK oil & gas companies. These Australian and UK methods can be traced back to pre-IFRS practices, in that impairment by (geological) area fits the Australian ‘area of interest’, and the project basis fits the pre-IFRS version of the successful efforts method used by UK oil & gas companies.

**TABLE 3: E&E POLICY METHODS USED, SPLIT BY COUNTRY AND BY SUB-INDUSTRY**

POLICY METHOD	AUSTRALIA		CANADA		UK		TOTAL
	MINING	OIL/GAS	MINING	OIL/GAS	MINING	OIL/GAS	
1. Expense all	2	1	9	0	6	1	19
2. Expense all but exploration rights	2	1	2	0	1	0	6
3. Expense all until viability expected	1	0	6	0	2	0	9
4. Expense all except drilling and evaluation; impair by project	0	2	1	3	0	3	9
5. As 4, but impair by (geological) area	0	0	0	1	0	0	1
6. Defer all except pre-licence costs; impair by project	1	9	1	1	2	12	26
7. As 6, but impair by (geological) area	12	7	1	7	7	3	37
8. As 6, but impair by country or unspecified	0	1	1	5	2	4	13
9. As 6, but impair by segment	0	0	0	5	0	1	6
10. As 6, but impair by single pool	0	0	0	2	0	1	3
<b>TOTAL</b>	<b>18</b>	<b>21</b>	<b>21</b>	<b>24</b>	<b>20</b>	<b>25</b>	<b>129</b>

Two conclusions can be drawn from these findings. First, there is strong evidence that miners use different policies from oil & gas companies. This reflects different physical and economic features of the two sub-industries. However, it does not mean that the two sub-industries cannot be dealt with in the same accounting standard. Policy requirements should be linked to differences in underlying features. Secondly, the clear international differences seem less likely to be reflecting underlying economic differences but, rather, differences in accounting habits from the past. This suggests that these habits impair international comparability, which suggests that the IASB should consider trying to remove the differences.

#### 4.4 OUR FINDINGS ON THE LOCATION OF E&E ASSETS IN THE BALANCE SHEET

One of the many choices to be made by preparers of the financial statements of extractive companies is the location of any capitalised costs (E&E assets). IFRS 6 offers no guidance here, and nor did the pre-IFRS Australian standard. However, the pre-IFRS UK SORP (see Section 2.2) did contain instructions in Paragraph 59, requiring E&E assets to be shown as intangible assets by companies using the successful efforts method (which was the majority UK practice). In principle, pre-IFRS requirements are not relevant under IFRS. Nevertheless, there is extensive research showing that companies tend to continue with pre-IFRS practices when adopting IFRS (see a summary in Nobes, 2013). Table 4 shows a good example of such an effect, as now discussed.

Table 4 shows the location of the E&E asset in the balance sheets of our 129 companies. The table splits companies into the two sub-industries: mining and oil & gas. As may be seen, a very large majority of extractive companies had capitalised some E&E costs, and most of them showed the E&E asset, labelled as such, as a specific line on the balance sheet (row #1 in the table). Table 4 also shows that only UK companies showed the E&E asset within intangibles (#4 and #5 in the table). In addition, several of the companies of row #1 which showed a separate E&E asset also added words to label it as intangible. These are shown in brackets in row #1. Again, only UK companies did that. In total, 23 of the 40 UK companies with an E&E asset showed it as an intangible, and no non-UK companies did so. This is evidence of influence of pre-IFRS practice.

One conclusion here is that the IASB should consider making requirements for presentation of E&E assets. An obvious possibility is to require them to be shown as intangibles, though Table 4 shows that a few mining companies in all countries currently show this as PPE.

When comparing Tables 3 and 4, the number of Method 1 ('Expense all') companies from Table 3 does not equal the number of Location #0 ('No E&E recorded') companies from Table 4. Two key reasons for this are: (1) a company has a policy of capitalising (some) E&E costs but the criteria for capitalisation have not been met and therefore no E&E asset is recorded; and (2) Table 3 does not consider E&E assets from business combinations or asset acquisitions whereas Table 4 does.

**TABLE 4: LOCATION OF THE E&E ASSET ON BALANCE SHEETS,  
SPLIT BY COUNTRY AND BY SUB-INDUSTRY**

COUNTRY	AUSTRALIA		CANADA		UK		TOTAL
	MINING	OIL/GAS	MINING	OIL/GAS	MINING	OIL/GAS	
<b>LOCATION ON BALANCE SHEET:</b>							
#0: No E&E recorded	0	2	5	1	4	1	13
#1: As E&E asset	10	19	2	21	5	15	72
(as intangible)	(0)	(0)	(0)	(0)	(2)	(7)	(9)
#2: PPE	5	0	5	0	3	1	14
#3: Oil & gas / mining assets	1	0	8	1	1	0	11
#4: Intangible assets	0	0	0	0	6	6	12
#5: Intangible oil & gas /mining assets	0	0	0	0	0	2	2
#6: Other	2	0	0	0	0	0	2
#7: Some tangible, some intangible	0	0	0	0	1	0	1
#2N: #2 but no E&E amount disclosed	0	0	0	1	0	0	1
#7N: #7 but no E&E amount disclosed	0	0	1	0	0	0	1
<b>TOTAL</b>	<b>18</b>	<b>21</b>	<b>21</b>	<b>24</b>	<b>20</b>	<b>25</b>	<b>129</b>

## 5. CONCLUSIONS

A summary of this report can be seen at the front under 'Executive Summary'. This section draws together our policy conclusions for analysts, researchers and standard-setters, as follows. The brackets at the beginning of each bullet show the relevant section number in the report.

- [2.4] Our research proposes that E&E costs should be covered by an amended IAS 38, which would extend deferral to non-extractive development costs before appraisal for viability. The different meanings of 'development' (as an extractive activity compared to its meaning in IAS 38) should be attended to by the IASB.
- [4.1] We have proposed a classification system of E&E policies, for the use of analysts, standard-setters and researchers.
- [4.2] Policy labels ('successful efforts', 'area of interest', and 'full cost') are extensively used, but many companies using these labels do not conform to any authoritative definition (current or past). This suggests that analysts and researchers should not rely on the labels. Related to this, analysts and researchers should also note that some companies do not clearly distinguish between E&E costs (on which IFRS 6 offers wide policy choice) and development costs (which fall outside of IFRS 6, and do not involve policy choice). The policy implication for the IASB is that terms should be defined, and that companies should not be allowed to use undefined labels.
- [4.3] Our findings on E&E policies reveal clear differences between sub-industries (mining versus oil & gas) and between countries. The differences between the sub-industries seem to relate, at least partly, to underlying physical and economic features. In an accounting standard, these factors could be set out, leading to appropriately different practices. By contrast, the international differences seem to relate to pre-IFRS custom. Thus, there is an argument for reducing them, in order to increase international comparability of reporting.
- [4.4] As in the previous section, there is a clear international difference in the location of E&E assets in balance sheets. A majority of UK companies shows them as intangibles; and only UK companies do that. This again can be traced to pre-IFRS practices. This suggests that an international standard could align international practice. If our proposal in [2.4] were taken up, presentation of E&E assets as a separate class of intangibles would be appropriate.

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## APPENDIX: INITIAL SAMPLE SELECTION

We begin our sample selection by identifying all companies which satisfy the following criteria: (1) allocated by Worldscope to Australia, Canada or the UK; (2) extractive company (see below); (3) active in 2017 (ie, Worldscope contains accounting data); (4) use of IFRS according to Worldscope (data field WC07536); and (5) market capitalization and total assets available in Worldscope (data fields WC07210 and WC02999, respectively). We identify a company as extractive if it is classified as such both by Worldscope's Industry Classification Benchmark (ICB) code (ie, the ICB code is 0533 or 0537 for oil & gas companies or 1753 to 1779 for mining companies) and by Standard Industrial Classification (SIC) code (ie, the primary, secondary or tertiary SIC code is between 1000 and 1499). For each country, we select the largest 25 oil & gas companies and 25 mining companies, by market capitalization as of 2017. Therefore, our initial sample comprises 150 companies.

We download the annual reports of our sample companies from corporate websites, national filing systems (eg, SEDAR in Canada) and Bloomberg for the accounting period ending on 31 December 2017 or nearest after, such as 30 June 2018. Our initial sample reduces to 129 companies for the reasons listed in Table 1. The reason for excluding foreign companies from our national samples is that their policy choices might be affected by their nationality. This is relevant because we detect, and comment on, apparently country-based policy choice. For identifying foreign companies, we hand-collect data on the country or countries in which a company's registered office, corporate head office and auditor are located. We exclude a company from a national sample if its registered office is in a foreign country, except if the company is registered in Bermuda or the Cayman Islands. These British Overseas Territories do not have their own financial reporting rules, and mere registration in them (when the head office and auditor are elsewhere) is likely to be for other reasons such as taxation. Nevertheless, we exclude companies registered in these territories from a national sample if their head office or their auditor is located in a foreign country. We treat Guernsey, Jersey and the Isle of Man as belonging to the UK.

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## ACKNOWLEDGEMENTS

The authors are grateful for the support of the ICAEW Charitable Trusts and Gillian Knight. They gratefully acknowledge comments from two anonymous reviewers (one academic and one practitioner); and research assistance from Natalia Dąbkowska, Katarzyna Kurlej and Ahilesh Ramesh. Help and encouragement has been received from Ann Tarca and Tim Craig of the IASB.



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