

EMISSION RIGHTS: ACCOUNTING & REPORTING PRACTICE IN EU

Introduction

Emission rights are permits to emit greenhouse gases. Governments give or sell them to entities such as companies. A permit allows an entity to emit a greenhouse gas such as carbon dioxide up to a certain level over a specified period. In schemes where permits are tradable, an entity can buy additional permits from – or sell surplus ones to – other entities.

In this note, we focus on emission rights issued and traded within the EU and how companies account for them. We outline the EU's emissions trading system: its scope, current operation and planned future shape. We explain the IASB's proposed accounting for emission rights, why the proposal was not implemented and the two most common ways EU-listed companies account for such rights today.

EU Emissions Trading System

Framework

The EU's Emissions Trading System – or ETS – is a 'cap and trade' scheme. The European Commission sets a limit – or *cap* – on the total amount of greenhouse gases (GHG) that companies in industries covered by the scheme can emit each year. The Commission reduces the cap annually so that overall EU emissions fall over time.

The cap is expressed in *emission allowances* (emission rights by another name). One allowance gives a company the right to emit GHG equivalent to one tonne of CO₂. (Carbon dioxide is the dominant greenhouse gas.) Most allowances are sold in auctions organised by member states but some allowances are granted to companies for free. The supply of allowances falls as the Commission cuts the cap each year.

Companies can trade allowances. If a company emits fewer GHG in the year than expected and ends the year with surplus allowances, it can keep the surplus for future use or sell them. Similarly, companies that emit more GHG than expected and are short of allowances at year-end, can buy additional allowances to cover the shortfall.

There is an active market for emission allowances, thanks to periodic auctions and the trading of allowances. The market price of an allowance is, in effect, a carbon price. As with any good or service, the price of an emission allowance is driven by supply and demand. The ETS influences the price of allowances on the supply side. Cutting the cap each year reduces the supply of allowances, pushing up its price. This spurs companies to cut their emissions and thus their demand for allowances.

The sale of allowances at auction generates revenue for member states. Between 2013 and 2020, the ETS raised over €175bn. Member states must use the revenue to finance investments in renewable energy, energy efficiency improvements and low-carbon technologies. Part of the revenue from auctions goes to the EU's Innovation Fund and Modernisation Fund which support such investments.¹

¹ European Commission, *EU Emissions Trading System*, https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en, accessed 18 October 2024.

Coverage

Industries covered by the ETS are those that are high GHG emitters. High CO₂ emitters are energy-intensive industries: electricity and heat generation, industrial manufacturing, aviation and maritime transport.² Not all industrial manufacturers are energy-intensive. High CO₂ emitters in this sector are oil refineries, steel works, and producers of materials such as iron, aluminium, cement, glass, paper and organic chemicals. The European Commission also identifies industries that are high emitters of other GHG such as nitrous oxide. Participation in the ETS is mandatory for companies in these industries but there are exemptions for small operators.

Achievements to date and future targets

The ETS has helped reduce the EU's GHG emissions. Emissions from European industrial plants fell by around 47% between 2005 and 2023. Actual CO₂ emissions in the EU were 2.5bn tonnes in 2023. Member states agreed that year that the rate of reduction in emissions was not fast enough to achieve the goal of net zero emissions by 2050. The ETS cap was tightened. The cap for 2024 is 1.4bn allowances (equivalent to 1.4bn tonnes of CO₂). Allowances will be reduced by 4.3% p.a. between 2024 and 2027 and 4.4% p.a. from 2028. The aim is to cut emissions by 62% by 2030, compared to 2005 levels.

The rules regarding free allowances were also revised in 2023. Between 2013 and 2020, 43% of allowances were granted to companies for free. However, the Commission began reducing free allowances in 2013. For example, industrial manufacturers received 80% of emission allowances for free in 2013 but only 30% in 2020. Under the revised rules, free allowances will continue until 2030 but they will be given mainly to companies in sectors under competitive pressure to relocate production outside the EU. In other sectors, free allocation will be phased out after 2026 and eliminated by 2030.

A second emissions trading system, ETS₂, was created in 2023. It will cover emissions from buildings, road transport and other sectors such as small industry and will start operating in 2027. Revenue raised from the auction of allowances will finance a Social Climate Fund that will help protect EU citizens affected by ETS₂'s carbon pricing regime.

Other countries and states have introduced emission 'cap and trade' schemes similar to the EU's. The UK Emissions Trading Scheme (UK ETS) was introduced in January 2021 after the UK left the EU. It is modelled on the EU ETS.³ According to the International Carbon Action Partnership, there were 36 emissions trading schemes in force in 2024 covering 18% of global GHG emissions. Jurisdictions – including states and provinces such as California in the USA and Québec in Canada – that use emissions trading were responsible for almost 60% of global GDP in 2023.⁴

² 'Aviation' applies to flights within the European Economic Area (& departing flights to Switzerland & UK). 'Maritime transport' covers 50% of emissions from voyages starting or ending outside the EU and 100% of emissions between two EU ports and within EU ports.

³ UK Government, *Participating in the UK ETS*, <https://www.gov.uk/government/publications/participating-in-the-uk-ets/participating-in-the-uk-ets>, accessed 18 October 2024.

⁴ International Carbon Action Partnership, *Emissions Trading Worldwide (Executive Summary): Status Report 2024*, https://icapcarbonaction.com/system/files/document/icap-2024-status-report-executive-summary_en_240517.pdf, accessed 18 October 2024.

Accounting for emission rights

IFRIC 3 'Emission Rights'

The International Financial Reporting Interpretations Committee (IFRIC), an arm of the IASB, published an interpretation on emission rights, IFRIC 3, in December 2004. The aim was to provide guidance to companies on the accounting for emission allowances under 'cap and trade' schemes. The interpretation encountered strong opposition and was withdrawn in June 2005.

Although there are currently no specific international rules on the accounting for emission rights (IFRIC has not issued a replacement), IFRIC 3 continues to influence accounting practice. We summarise the provisions of the interpretation below.

- Emission allowances are intangible assets. They are rights to emit greenhouse gases and should be accounted for in the same way as other rights (i.e. in accordance with IAS 38).
- Purchased allowances are measured at acquisition cost. Allowances allocated to the company at nil cost or at less than fair value must be reported initially at fair value. Allowances, whether purchased or allocated, are not amortised but they are subject to periodic impairment tests. A company can elect to revalue the allowances, as allowed under IAS 38.
- The difference between what a company pays for allowances and their initial fair value is a government grant. In accordance with IAS 20, the difference is reported as deferred income and recognised in income on a systematic basis over the period to which the allowances apply (the compliance period).
- A company must recognise a provision (estimated liability) for its actual emissions. The provision is measured at fair value, in accordance with IAS 37. Fair value in this case is the current value of the allowances (covering actual emissions) the company must surrender to the government at the end of the compliance period.
- On surrender of the emission allowances, the company derecognises the intangible asset and the provision.⁵

An example illustrates the proposed accounting under IFRIC 3. It focuses on the x1 emissions of MissionE, a hypothetical European manufacturing company in an energy-intensive sector, and the allowances it acquires to cover them. (We use the same facts to illustrate the actual ways European companies currently account for emission allowances.)

MissionE expects to emit 20,000 tonnes of CO₂ from its operations in calendar year x1 (the compliance period). In January x1, the government grants it 4,000 allowances at nil cost, covering 4,000 tonnes of CO₂ emissions that year. The carbon price (per tonne of CO₂) is €60 then.

At the end of June, it revises its emissions forecast. Business has been better than expected. It now expects to emit 21,000 tonnes of CO₂ in x1. It buys 17,000 allowances at auction, at a price of €65/tonne.

MissionE's actual emissions in x1 are 21,200 tonnes of CO₂. It provides for these emissions at the end-x1 carbon price of €70/tonne. It purchases the balance of 200 allowances in January x2 at this price.

The company's financial year runs to the end of December. It reports its actual x1 emissions and the allowances it holds to the government in March x2. It surrenders 21,200 allowances to the government in April x2.

⁵ Note the above accounting applies to companies that hold allowances for use in their own business. Those – such as brokers – that hold allowances for trading purposes account for them in the same way as other traded assets. The allowances are measured, post-acquisition, at fair value, with gains and losses taken to P&L as they arise.

Exhibit 1 Accounting for emission rights under IFRIC 3**Facts**

- : MissionE Co. expects to emit 20,000 tonnes of CO₂ from its operations in x1 (the compliance period).
- : In Jan x1, it receives 4,000 free allowances from government, covering 4,000 tonnes of its CO₂ emissions.
- : At end-June, it revises its x1 emissions forecast to 21,000 tonnes and buys 17,000 allowances.
- : Its actual x1 emissions are 21,200 tonnes of CO₂. It purchases the balance of 200 allowances in Jan x2.
- : Carbon price (per tonne of CO₂) is: €60 (Jan-x1); €65 (end-June x1); and €70 (end-Dec x1 / Jan-x2).
- : In April x2, MissionE surrenders 21,200 allowances to government to cover actual x1 emissions.

Accounting under IFRIC 3

- : Emission allowances are an intangible asset, measured at FV on grant or purchase. Difference between asset's cost and FV at grant date is deferred income & recognised in P&L over compliance period.
- : Company makes provision for actual emissions at their fair value (ie end-year carbon price).
- : On allowances' surrender, company derecognises intangible & provision. Any difference is FV gain/loss.

		<u>Assets</u>		=	<u>Liabilities</u>		+	<u>Equity</u>	
Currency amounts in €000		Cash	Intangible asset		Deferred income	Emissions provision		P&L	
x1									
January	Grant of 4000 allowances		240	=	240				
30-Jun	Buy 17000 allowances	-1105	1105						
During year	Recognise income from grant				-240			240	Other income
	Provide for actual emissions					1484		-1484	Other op. expense
31-Dec	Balance, end-x1	-1105	1345	=	0	1484		-1244	
x2									
January	Buy 200 allowances	-14	14						
April	Surrender 21200 allowances		-1359	=		-1484		125	FV gain
Net impact of x1 emissions and allowances		-1119	0		0	0		-1119	

Exhibit 1 shows how MissionE would account for emission allowances and actual emissions under IFRIC 3. The company records the grant of 4,000 allowances in January as an intangible asset and deferred income (government grant) and measures the allowances granted at their fair value then (€60/tonne). At the end of June, it records the purchase of 17,000 allowances at their cost (€65/tonne).

During the year, it recognises income from the grant and provides for the actual emissions (21,200 tonnes) from its operations. The end-year provision is measured at the carbon price then (€70/tonne). It only holds 21,000 allowances at end-x1 and must purchase the balance of 200 allowances in January x2.

It derecognises the intangible asset and the provision in April x2 when it surrenders the 21,200 allowances to the government. It records a fair value gain of €125,000, the difference between the intangible asset measured at cost and the provision measured at end-x1 fair value.

IFRIC 3 was withdrawn in the face of objections by financial statement preparers and users. Many companies balked at recognising allowances granted at nil cost as an asset and a government grant. In addition, the proposed accounting was likely to give rise to a timing mismatch. This is evident from our example in exhibit 1. MissionE measures the intangible at cost and the provision at fair value. The gain or loss arising from the valuation difference is recognised in x2 when the allowances are surrendered, not in x1 when most of the valuation difference arose.⁶

Although IFRIC 3 was withdrawn, it remains recommended accounting practice. Few companies follow it, however. A common practice is to apply a simplified version. We illustrate two methods of accounting for emission allowances that are popular among European listed firms.⁷

Modified IFRIC 3

Some companies apply most of the provisions of IFRIC 3 but do not record allowances granted at nil cost on the balance sheet. Their treatment of the provision for actual emissions also differs from that set out in the interpretation. The key differences from IFRIC 3 are as follows:

- Only purchased emission allowances are recognised as an intangible. They are measured at acquisition cost. Those granted at nil cost are recorded in the accounts as a memorandum entry.
- The company recognises a provision for actual emissions – but not for those covered by free allowances. The provision is measured at the cost of purchased allowances. Where allowances fall short of actual emissions, the company tops up the provision at year-end, measuring the allowances still to be acquired at their end-year market value.

Exhibit 2 illustrates the accounting under ‘modified IFRIC 3’, using the same facts as in our example in exhibit 1. MissionE does not recognise on the balance sheet the 4000 allowances it receives for free in January x1. It records a memorandum entry in its books, instead. It only recognises the allowances it purchases. It measures them at cost. (It tests them for impairment, post-acquisition.)

It provides for emissions covered by purchased allowances – namely, 17,000 tonnes of CO₂. It records the provision at the cost of those allowances (€65/tonne).

The company’s actual emissions in x1 exceed the allowances it holds. At year-end, it provides for the shortfall at the market value of the allowances it still has to acquire (200 allowances at the end-year carbon price of €70/tonne).

It purchases the missing 200 allowances in January x2 and surrenders 21,200 allowances to the government in April. At that point, it derecognises the balances in the intangible and provision accounts. As the balances in these accounts are the same, no fair value gain or loss arises at the time of surrender.⁸

⁶ Had MissionE elected to revalue intangibles (including emission allowances), a different mismatch would have occurred in x1. Under IAS 38, revaluation gains (and losses up to previously recognised gains) are taken to ‘other comprehensive income’. (They are transferred to P&L only when the asset is derecognised.) However, FV gains and losses relating to provisions are booked in P&L directly.

⁷ There is currently no US accounting standard on the issue of emission rights. Under guidance published by the Federal Energy Regulatory Commission in 1993 in connection with sulphur dioxide (‘acid rain’) emissions, companies are required to record emission allowances at cost and account for them as inventory.

⁸ This follows from the assumption in our example. A fair value gain or loss will arise if the cost of allowances purchased in January x2 differs from their market value at end-December x1. However, any FV gain or loss is likely to be smaller than that recorded under IFRIC 3.

Exhibit 2 Accounting for emission rights in EU: Modified IFRIC 3**Facts:** see exhibit 1**Modified IFRIC 3**

: Purchased allowances are recorded as intangible asset at cost. Free allowances are not recognised.

: Company makes provision for emissions relating to purchased allowances, at their purchase cost, and an end-year provision for allowance shortfall (allowances < emissions) at their market value.

: On allowances' surrender, company derecognises balances in intangible and provision accounts.

		Assets		=	Liabilities	+	Equity		
Currency amounts in €000		Cash	Intangible asset		Emissions provision		P&L		
x1									
January	Grant of 4000 allowances							Memo entry	
30-Jun	Buy 17000 allowances	-1105	1105						
During year	Provide for 17000 tonnes of emissions				1105		-1105	} Other op. expense	
End year	Provide for allowance shortfall (200 tonnes)				14		-14		
31-Dec	Balance, end-x1	-1105	1105		1119		-1119		
x2									
January	Buy 200 allowances	-14	14						
April	Surrender 21200 allowances		-1119		-1119				
Net impact of x1 emissions and allowances		-1119	0		0		-1119		

Expensing of asset post-acquisition

Many companies make a further modification to IFRIC 3. In addition to recognising only purchased emission allowances, they expense them post-acquisition. IFRIC 3 implicitly views allowances, purchased and free, as an intangible asset with an indefinite life. A company can hold allowances and use them to cover actual emissions in a future period. They have no maturity date. Thus, amortisation is not necessary (though testing for impairment is required).

However, most companies manage their allowances so that they hold only those they need in the current compliance period. Rather than measuring allowances at cost (adjusted for impairment) until surrender, a company expenses them as they are consumed. Some companies classify the allowances as an intangible and amortise them over the compliance period, usually on a straight-line basis, recording the expense under 'other operating expenses'.

Other companies classify the allowances as materials inventory.⁹ The costs flow into work in progress inventory and ultimately cost of sales, using an accepted cost flow assumption, such as FIFO or weighted average cost.¹⁰

⁹ This is the approach followed by many US companies (see fn 7).

¹⁰ If the allowances are classified as an intangible, a third variant is for amortisation to be recognised as a production cost and charged to work in progress inventory in the same way as depreciation of production equipment.

Exhibit 3 Accounting for emission rights in EU: Asset expensing approach**Facts:** see exhibit 1**Asset expensing approach**

- : Purchased allowances are recorded as intangible or inventory at cost. Free allowances are not recognised.
- : Asset is expensed as consumed - as production cost or other operating expense.
- : Company makes end-year provision for allowance shortfall (allowances < emissions) at market value.
- : On allowances' surrender, company derecognises balances in asset and provision accounts.

		<u>Assets</u>		=	<u>Liabilities</u>	+	<u>Equity</u>	
Currency amounts in €000		Cash	Inventory/ Intangible asset		Emissions provision		P&L	
x1								
January	Grant of 4000 allowances							<i>Memo entry</i>
30-Jun	Buy 17000 allowances	-1105	1105					
During year	Expense asset		-1105	=			-1105	<i>Prod'n/Other op. expense</i>
End year	Provide for allowance shortfall (200 tonnes)				14		-14	<i>Other op. expense</i>
31-Dec	Balance, end-x1	-1105	0		14		-1119	
x2								
January	Buy 200 allowances	-14	14					
April	Surrender 21200 allowances		-14	=	-14			
Net impact of x1 emissions and allowances		-1119	0		0		-1119	

Exhibit 3 illustrates the accounting under the asset expensing approach, using the same facts as in our example in exhibit 1. As in the 'modified IFRIC' case, MissionE does not recognise on the balance sheet the 4000 allowances it receives for free in January x1. It records a memorandum entry in its books, instead. It records the allowances it purchases either as an intangible asset or as inventory.

Post-acquisition, the company expenses the asset, either indirectly through cost of sales or directly as 'other operating expense'. We assume that all the costs of the allowances MissionE purchases in x1 are expensed that year. If the costs are inventoried, however, some may remain in work in progress or finished goods inventory at year-end.

The company only recognises a provision at year-end if there is an allowance shortfall. The company emits 21,200 tonnes of CO₂ in x1 but holds, at year-end, allowances for 21,000 tonnes, so it must provide, at market value, for the shortfall of 200 tonnes.

It makes good the shortfall in January x2 before surrendering 21,200 allowances to the government in April. At this point, it derecognises the balances in the asset and provision accounts.

IFRIC 3 and current accounting practice: a review

One major difference between IFRIC 3 and current accounting practice will disappear over time. The European Commission is committed to phasing out the free allocation of emission allowances. When this occurs, all the allowances a company holds will be purchased allowances and accounted for in the same way initially, namely, at acquisition cost.

Other differences between IFRIC 3 and actual practice will remain, however. In the case of 'modified IFRIC', the key remaining difference is the measurement of the provision for actual emissions. Under IFRIC 3, it is measured at fair value, that is, the current carbon price. Under modified IFRIC, the provision for emissions that are covered by purchased allowances is measured at the cost of those allowances. Only any allowance shortfall (allowances < actual emissions) at year-end is measured at fair value.

The differences between IFRIC 3 and the asset expensing approach are more striking and are likely to lead to a leaner balance sheet. This can be seen from a comparison of exhibits 1 and 3. Expensing purchased allowances as they are consumed results in a much smaller asset (intangible or inventory) at year-end. The provision recognised then is also much smaller: it consists of the allowance shortfall at fair value. Thus, the balances in the asset and provision accounts derecognised when the year's allowances are surrendered reflect the cost of only those allowances purchased after year-end. These amounts are likely to be a fraction of the cost of the year's allowances.