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The treatment of Emissions Trading Scheme (ETS) permits in the Australian System of National Accounts

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Background document to AEG paper SNA/M1.08/06: Emission permits

The treatment of Emissions Trading Scheme (ETS) permits in the Australian System of National Accounts

Introduction

The purpose of this paper is to discuss the treatment of permits issued under the proposed Australian emissions trading scheme (ETS) in the Australian System of National Accounts. The desire is to establish a treatment that is consistent with the 2008 SNA, recognising that the 2008 SNA provides broad guidelines but does not address the issue of ETS permits in detail.

The paper identifies a range of options for treatment and proposes a recommended treatment. It has been informed by discussions with the Australian Government's Treasury and Department of Finance who are broadly supportive of the proposed approach. However, the decision on how to treat the permits in the ASNA rests solely with the ABS.

In considering the issue, the proposed treatment of ETS permits in business accounting was also explored. However, it seems that this is an issue that the relevant accounting standards setters are having difficulty coming to grips with; both internationally and in Australia.

The next section of the paper provides background information. Following that, two key issues are considered: (1) the nature of the asset represented by the permit and (b) the timing of the tax event (on the basis that the permit represents a form of taxation).

Background

The Australian Carbon Pollution Reduction Scheme

The Australian government has committed to implementing an ETS in Australia in 2010. The scheme's design was outlined in the Department of Climate Change's (DCC) Carbon Pollution Reduction Scheme (CPRS) Green Paper. (http://www.climatechange.gov.au/greenpaper/) In summary, under the scheme:

- The big emitters will be required to acquire and surrender a carbon emissions permit for each ton of CO_2 equivalent emissions.
- The number of permits will be capped. Some permits will be allocated free (~30%), while the majority will be sold by auction (~70%).
- Approximately a thousand firms will be required to participate in the scheme (covered firms), accounting for about 75% of Australia's total carbon emissions.
- Any entity will be able to buy permits, including banks and non-residents. The permits will be transferable on secondary markets.
- Derivatives will be permitted, for example, futures contracts and options, to provide risk management options for covered firms.

- The permits will be dated and valid from that date onwards. They will be auctioned from a few years before this date and will not expire. For example, a permit dated 2012/13 may be sold in 2010 and surrendered for any reporting period from 2012/13.
- The government has committed to using at least part of the revenue to compensate households via the current payments system.

ETS and the Standards

Selected paragraphs of SNA 2008 are provided in Attachment 1. SNA views payments for permits as taxes, specifically other taxes on production (17.339, 17.342). It states these contracts are non-produced, non-financial assets (SNA 10.192). However, SNA also states that the payment for permits should be accrued to match the payment with economic activity, (17.342) which requires a financial asset. This is covered in a paper by Chris Heady of the OECD, which is quoted in Attachment 3.

Issue 1 – Asset Type

The international community is in general agreement in calling payments for permits a tax. However, there is disagreement about the classification of permits to asset type. There are three broad proposals: A non-financial asset, a financial asset and a mixed asset.

1.1 Non-Financial Asset: The payment for the permit is the tax payment. A non-financial asset is created in the hands of the firm via an other value change (OVC). The only thing recorded on the books of the government is tax receipts which coincides with cash payments. Market price changes are reflected in revaluations of the asset on the firm's balance sheet.

- Free permits would be recognised as tax foregone and a grant.
- Secondary trade in permits is trading of a non-financial asset.

Advantages:

- Accrued treatment aligns with cash treatment, in both timing and value.
- Only one double-entry event record in the books of the government.
- Administratively simple to implement.

Disadvantages:

- The recognition of tax received is not related to the underlying activity, ie greenhouse gas emission. The forward sale of permits and the infinite banking potential of permits will see tax recognised for an event that may not occur for many years, if at all.
- The payer of the tax in many cases will not be the emitter. It is expected that a significant number of permits in the initial auctions will be bought by entities who are not required to participate in the scheme, to provide financial services and seek capital gains. Under this treatment, investors in permits will be seen to be paying significant carbon taxes.

1.2 Financial Asset: Under this option, permits are a tax prepayment - the permit is a liability of government as the surrender of the permit will be recognised by government as payment of a tax obligation incurred through emissions. Therefore, the permit constitutes a financial asset/liability pair (SNA 11.7). At auction, a financial asset is created in the books of the receiving firm and a liability created in the books of the government. If the firm becomes liable to pay tax at the tax event (discussed in Issue 2) it uses the permit (tax prepayment) to acquit its tax liability. When surrendered to government, both the asset and liability are extinguished. Market price changes are reflected in the revaluation of the permit asset and liability. Therefore, an increase in the market price increases both permit liabilities of government and tax receivable to government.

- Free permits would be in the form of a liability of government with no corresponding cash payment, therefore increase net borrowing until surrendered. The receiving firm has a claim on government. The free permit would be a grant in the form of a current transfer.
- Secondary trading of permits is trading of financial assets.

Advantages:

- The recognition of tax receivable accrues more realistically with economic activity.
- The covered firm is seen as paying the tax.
- Follows the principle set out in SNA 17.342
- Market prices are used for all stocks and flows.

Disadvantages:

- Market price changes mean the cash flows and accrue flows do not match. Tax receivable and cash receipts will not match.
- There is no non-produced non-financial asset, as discussed in SNA

1.3 Mixed Assets: This option is based on a paper by Thomas Olsen from Statistics Denmark (see Attachment 3) but differs slightly. Under this treatment, the permit represents two assets: a financial asset representing the initial auction price (the prepayment of tax) and a non-financial asset representing the difference between the financial asset and the market price. The financial asset corresponds to the tax prepayment liability in the books of the government. Only the non-financial asset is revalued by market price changes. At surrender, the financial asset component of the permit is seen as the payment of the tax and the non-financial component is removed via an other value change.

- Free permits would be entirely non-financial assets, as the financial component would be zero. There would be no liability of government. It would be recognised as tax foregone and a grant.
- A secondary trade would be trading of both the financial and non-financial assets.

Advantages:

- The recognition of tax receivable accrues with economic activity. Tax receivable and cash receipts will match.
- For an allocation price greater than zero, the covered firm is seen as paying the tax.

Disadvantages:

- Difficult to represent a decrease in market price in a meaningful way, as it may give rise to a non-financial asset with a negative value.
- As a free permit would be entirely a non-financial asset, the secondary trade of a free permit would give the buyer a non-financial asset with liability to the government. Therefore, whether or not a secondary buyer receives a claim on government depends on who originally sold the permit.
- To maintain which sectors hold claims against government, the allocation price of each individual permit would need to be recorded as secondary trades occur. This is because each permit may have a different financial asset component that is not subject to market prices.

Issue 2: Timing of the Tax Event

Following from Issue 1, the recognition of a tax receivable/payable asset/liability can be at several points. Each have their own conceptual and practical advantages. The decision made on issue 1 dictates which options are conceptually feasible in issue 2. The adoption of option 1.1 implies the adoption of 2.1. The adoption of 1.2 or 1.3, which both discuss a financial asset, allows the choice between 2.2, 2.3 or 2.4, which discuss accrual of tax with events.

The proposed timing of auctions, reporting and compliance for the Australian scheme is shown in attachment 2.

2.1 At Auction

Recognition of tax payable at auction implies the payment for permits is the payment of the tax, as in the non-financial asset case (1.1) above.

Advantages:

- Simple to implement from administrative data.
- Can produce quarterly estimates

Disadvantages:

- As per Non-Financial asset case (1.1) above.

2.2 Accrual of tax based on emissions

Recognition of tax payable occurs with the physical occurrence of emissions. In practice this would be based on a quarterly estimate of emissions from covered facilities. The value of the tax would equal the value of the permit at acquittal, which would initially be estimated at the time of emission. This means that the initial value of the tax (and the tax receivable/payable asset/liability) would likely be revised. If the emitter does not have sufficient permits at the time of emission, then a liability for tax payable (asset for tax receivable for the government) would offset the tax payable, with this asset (liability) extinguished with the subsequent acquisition of the necessary permits or the payment of a fine.

Advantages:

- Directly links tax payment to activity, consistent with income tax, etc.

- Can produce quarterly estimates.

Disadvantages:

- Dependent on data that is currently not available.
- Subject to revision once the annual regulatory data is released. However, this is consistent with many other quarterly estimates of taxes, such as income tax, which are revised when final data is available. In this case, changes in the initial estimates for both the ‘price’ of the tax (ie the value of the emission permit) and the ‘quantity’ to which the tax is applied (ie the volume of emissions) would both contribute to the revision of the estimate of tax payable.

2.3 At reporting/assessment

Recognition of tax payable occurs when emissions are reported to the regulator after the end of the financial year.

Advantages:

- Simple to implement from administrative data.

Disadvantages:

- Lagging indicator of economic activity. Data will not be available until at least 31st October, 16 months after the start of the reporting period.
- Tax only recognised annually

2.4 At permit surrender

Recognition of tax payable occurs when permits are surrendered to acquit liabilities to the regulator.

Advantages:

- Simple to implement from administrative data.

Disadvantages:

- Lagging indicator of economic activity, more so than recognition at assessment. Data may not be available until December, 18 months after the start of the reporting period.
- Tax only recognised annually.

Recommendation

- 1.2: Treatment of permits as a financial asset
- 2.2: Recognition of tax payable when emissions occur (quarterly in practice).

We advise the rejection of option 1.1 (Treatment of permits as a non-financial asset) as it can not match tax payments with the underlying economic activity. While the ABS may not make any attempts to accrue other taxes in the form of contracts and licences (e.g. taxi licences), we believe that this scheme is significantly different as to warrant a different treatment. The expected diminishing supply and increasing price of permits along with the potential for banking of permits means a financial asset treatment is most appropriate.

We advise the rejection of option 1.3 (Treatment of permits as a mixed asset) as it is considerably more complicated, conceptually and practically, without offering any better understanding of the nature of the ETS. We believe the potential issues, such as negative assets and trade in free permits, make this option unattractive to adopt in the national accounts.

We advise tax accrual option 2.2 is the preferred treatment, assuming an acceptable quarterly data source is established. We accept that options 2.3 or 2.4 are acceptable, but the lag in data sources may prove difficult for quarterly publications.

Summary of treatment options

The asset treatment options are summarised below, plus a column to contrast treatment under cash accounting.

Event	Option 1.1 Non-Financial Asset	Option 1.2 Financial Asset	Option 1.3 Mixed asset	Cash Accounting
Auction	Tax payment Non-fin asset created via OVC	Asset/Liability pair created	Asset/Liability pair created	Tax paid
Market price change	Non-fin asset reval	Asset/liability reval	Non-fin asset created via OVC	
Emission or reporting (Tax event)		Tax receivable asset/liability created	Tax receivable asset/liability created	
Surrender	Non-fin asset valued to zero (OVC)	Permit received viewed as Tax payment. Assets and liabilities extinguished	Permit received viewed as Tax payment. Financial asset and liability extinguished. Non-financial asset OVC to zero	
Issue of free permits	Tax foregone - grant. Non-fin asset OVC to market price	Liability to government - grant	Financial Asset = 0 Non-Fin Asset OVC to market price	

Australian Bureau of Statistics
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Attachment 1: Selected sections of the 2008 SNA

The Capital Account: Acquisitions less disposals of non-produced non-financial assets

10.164 *There are three distinct types of non-produced nonfinancial assets in the SNA: natural resources, contracts, leases and licences, and goodwill and marketing assets. These three types of assets have little in common except that they are all non-produced and non-financial. A separate section discusses each of the three.*

Types of assets included in contracts, leases and licences

10.189 *There are four classes of contracts, leases and licences considered to be assets in the SNA: marketable operating leases, permits to use natural resources, permits to undertake specific activities and entitlement to future goods and services on an exclusive basis.*

10.192 *A permit to undertake a specific activity is one where:*

a. the permits are limited in number and so allow the holders to earn monopoly profits,

b. the monopoly profits do not come from the use of an asset belonging to the permit-issuer,

c. a permit holder is able both legally and practically to sell the permit to a third party.

Such permits are issued mainly by government but may also be issued by other units.

10.193 *When governments restrict the number of cars entitled to operate as taxis or limit the number of casinos permitted by issuing licences, they are in effect creating monopoly profits for the approved operators and recovering some of the profits as the fee. The incentive to acquire such a licence is that the licensee believes that he will thereby acquire the right to make monopoly profits at least equal to the amount he paid for the licence. This stream of future income is treated as an asset if the licensee can realize this by on-selling the asset. The type of asset is described as a permit to undertake a specific activity. The value of the asset is determined by the future stream of monopoly profits.*

The Financial Account: Financial assets and liabilities

11.5 A liability is established when one unit (the debtor) is obliged, under specific circumstances, to provide a payment or series of payments to another unit (the creditor). *The most common circumstance in which a liability is established is a legally binding contract that specifies the terms and conditions of the payment(s) to be made and payment according to the contract is unconditional.*

11.7 *Whenever either of these types of liability exists, there is a corresponding financial claim that the creditor has against the debtor.* ***A***

financial claim is the payment or series of payments due to the creditor by the debtor under the terms of a liability. *Like the liabilities, the claims are unconditional. In addition, a financial claim may exist that entitles the creditor to demand payment from the debtor but whereas the payment by the debtor is unconditional if demanded, the demand itself is discretionary on the part of the creditor.*

Cross-cutting and other special issues: Permits to undertake a specific activity

Permits issued by government

17.341 *When governments restrict the number of cars entitled to operate as taxis or limit the number of casinos permitted by issuing licences, they are in effect creating monopoly profits for the approved operators and recovering some of the profits as the fee. In the System these fees are recorded as taxes, specifically as other taxes on production. This principle applies to all cases where government issues licences to limit the number of units operating in a particular field where the limit is fixed arbitrarily and is not dependent only on qualifying criteria.*

17.342 *In principle, if the licence is valid for several years, the payment should be recorded on an accrual basis with an other account receivable/payable entry for the amount of the licence fee covering future years. However, if government does not recognise a liability to repay the licensee in the case of a cancellation, the whole of the fee payable is recorded at the time it is paid.*

17.354 *Governments are increasingly turning to the issuing of emission permits as a means of controlling total emissions. These permits do not involve the use of a natural asset (there is no value placed on the atmosphere so it cannot be counted as an asset) and are therefore classified as taxes even though the permitted "activity" is one of creating an externality. It is inherent in the concept that the permits will be tradeable and that there will be an active market in them. The permits therefore constitute assets and should be valued at the market price for which they can be sold.*

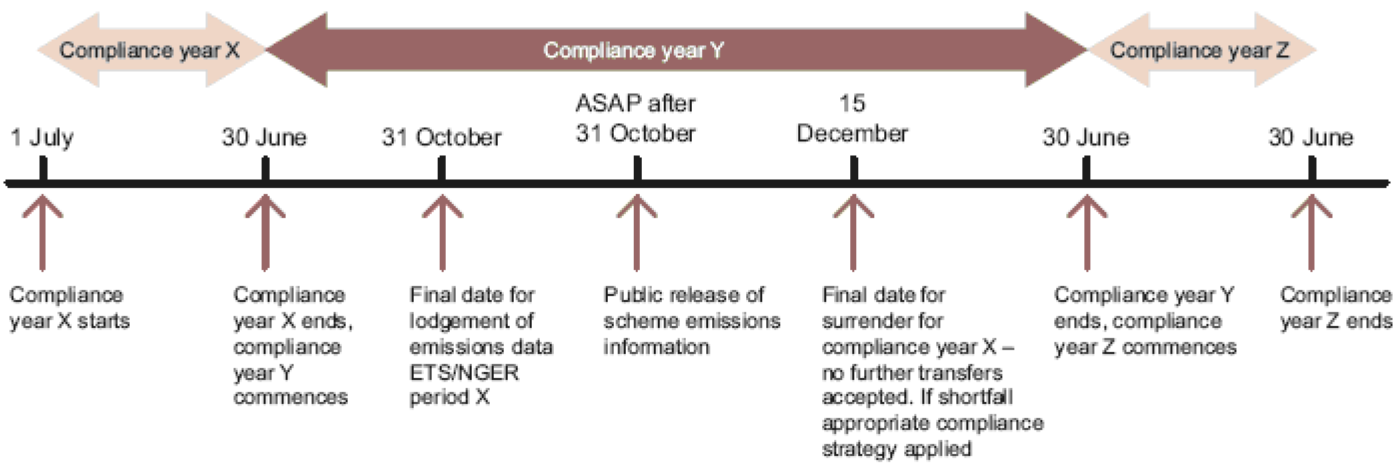
Attachment 2: Proposed timing of Auctions, Reporting and Compliance in the Australian Scheme

From the DCC's CPRS Green Paper.

The reporting period will be the financial year. Firms will report on their activities by 31st October following the end of the period, and will be required to surrender before 15th December.

Auctions will commence three years in advance of the reporting period, continue during the period and finalise after reports are submitted. However, as permits of vintage n can be used in year n and any year after, **the period between auction and surrender is unpredictable**.

Figure 5.1 Compliance timeline



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Box 7.6
Possible initial auction schedule

	Financial Years																					
Financial year	2009–2010				2010–2011				2011–2012				2012–2013				2013–2014				2014–2015	
Quarter ending	Sept	Dec	Mar	Jun	Sept	Dec	Mar	Jun	Sept	Dec	Mar	Jun	Sept	Dec	Mar	Jun	Sept	Dec	Mar	Jun	Sept	Dec
Vintage 2010–2011			1/4	1/8	1/8	1/8	1/8	1/8		1/8												
Vintage 2011–2012			1/8	1/8	1/8				1/8	1/8	1/8	1/8		1/8								
Vintage 2012–2013			1/8		1/8				1/8				1/8	1/8	1/8	1/8		1/8				
Vintage 2013–2014					1/8				1/8				1/8				1/8	1/8	1/8	1/8		1/8
Vintage 2014–2015	Transitional period								1/8				1/8				1/8				1/8	1/8
Vintage 2015–2016													1/8				1/8				1/8	
Vintage 2016–2017																	1/8				1/8	
Vintage 2017–2018																					1/8	

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Attachment 3: Selected international discussion
Papers from the London Group on Environmental Accounts: Papers from October 08 meeting regarding ETS and SNA
Notes Link (Subject: London Group papers - October 08; Database: NAB WDB; Author: Adam Trevorrow; Created: 16/10/2008; Doc Ref: ATRW-7KG9PS)

Thomas Olsen, Statistics Denmark (p5-6)

"Work in progress: It should be emphasised that the treatment as outlined here is based on discussions within Statistics Denmark during 2008. It should therefore be seen as work in progress

If there is a payment greater than zero related to the transfer of the permits from the Government to the industries, this is categorised as a prepaid tax. In the industries' asset accounts, this is registered as ***two assets*** *partly consisting of the prepaid tax (financial asset) and partly consisting of a non-financial asset representing the difference between the prepaid tax and the market value of the permits. The nonproduced non-financial asset is created through the other changes in volumes. A liability equal to the two divided asset is registered in the public sector accounts.*

The asset, the liability, the prepaid tax, is settled as the permits are surrendered by the companies. In connection with this the remainder of the value of the two divided asset disappears through other changes in volumes If a company chooses to sell the permits it is both the tax asset and the non-financial asset which are sold.

The tax event occurs when the permit is surrendered. The tax payment is only relevant for that part of the permits, which is surrendered and which originally was purchased from the Government.

...

In the case, where there is not related a payment to the transfer of the permits from the Government to the companies, the value of the prepaid tax is zero. With that, the value of the permits corresponds to the value of the non-produced non-financial asset."

Chris Heady, OECD (p2-4)

"Emission permits are generally not refundable and so [SNA] paragraph 17.342 implies that the fee payable is recorded at the time it is paid. However, the payment to the government (if any) may be made well in advance of the environmental damage, and the entity that makes the payment to the government is not necessarily the entity that produces the damage. So, it is not clear that the payment to the government for the permit is the event at which the tax accrues. Instead, it could be argued that it is the emission of the pollution that should be regarded as the time at which the tax accrues and the surrender of the permit as the time at which the tax is actually paid, at least from the point of view of the taxpayer. Certainly, until that time, the holder of

the permit has not suffered any financial loss equivalent to a tax, as the permit is an asset that could be sold until the time that the emission is released. In practice, it would be hard to identify exactly when the emissions occur and so it might be necessary to simply accrue to tax evenly over the period to which the permit relates (although this could become complex in systems where permits can be carried forward into later periods).

One complication here is that, if the time of the emission is taken to be the time at which the tax accrues, it would be natural to value the payment at the current market price of the permit. This would typically be different from the amount at which the government sold it, even if it had been sold at auction."