



STATISTICS

Emission Trading Schemes

APRIL 2022

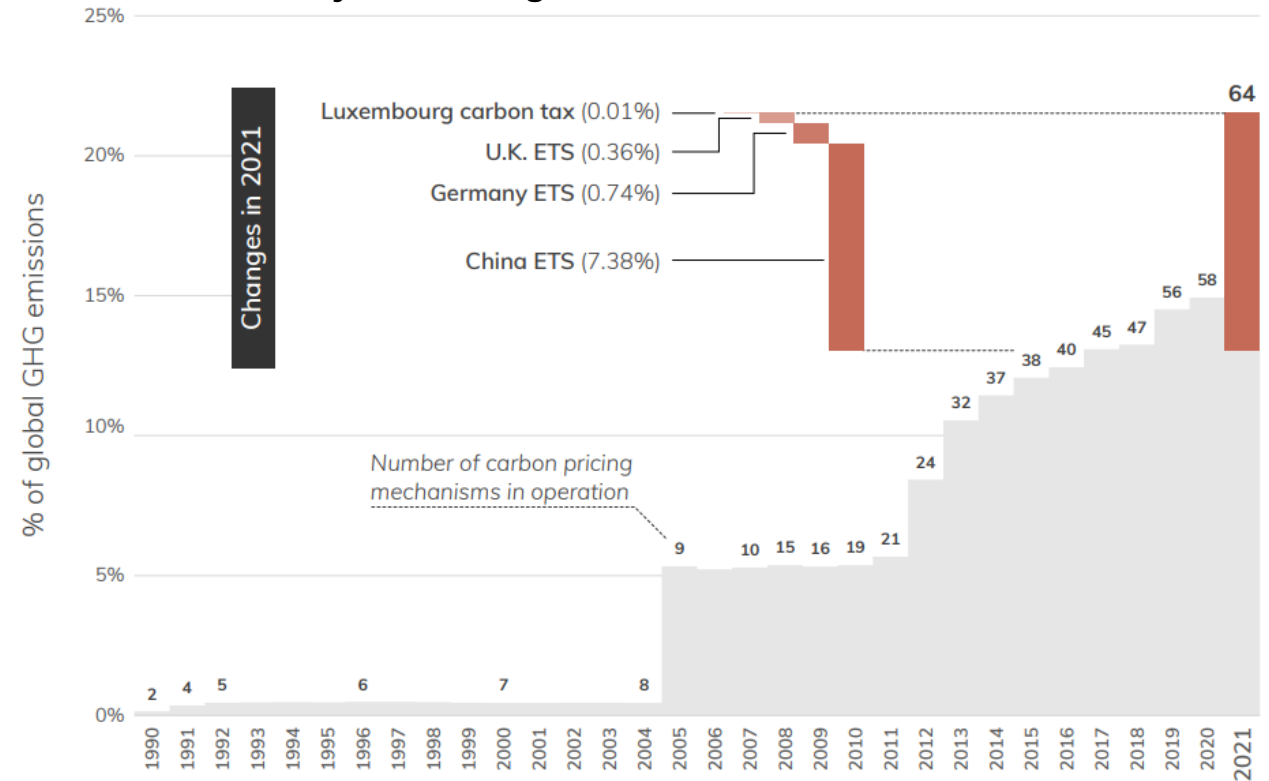
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Background

- To reduce GHG emissions countries around the world are looking at putting a price on carbon emissions. Two of the more popular policy instruments include:
 - ◆ Carbon taxes
 - ◆ Emission trading schemes (ETS) (e.g., Cap and trade)
- These policies apply a price to a broad set of emissions that are aimed at encouraging businesses and individuals to innovate and change their behavior and therefore reduce the level of GHG emissions.

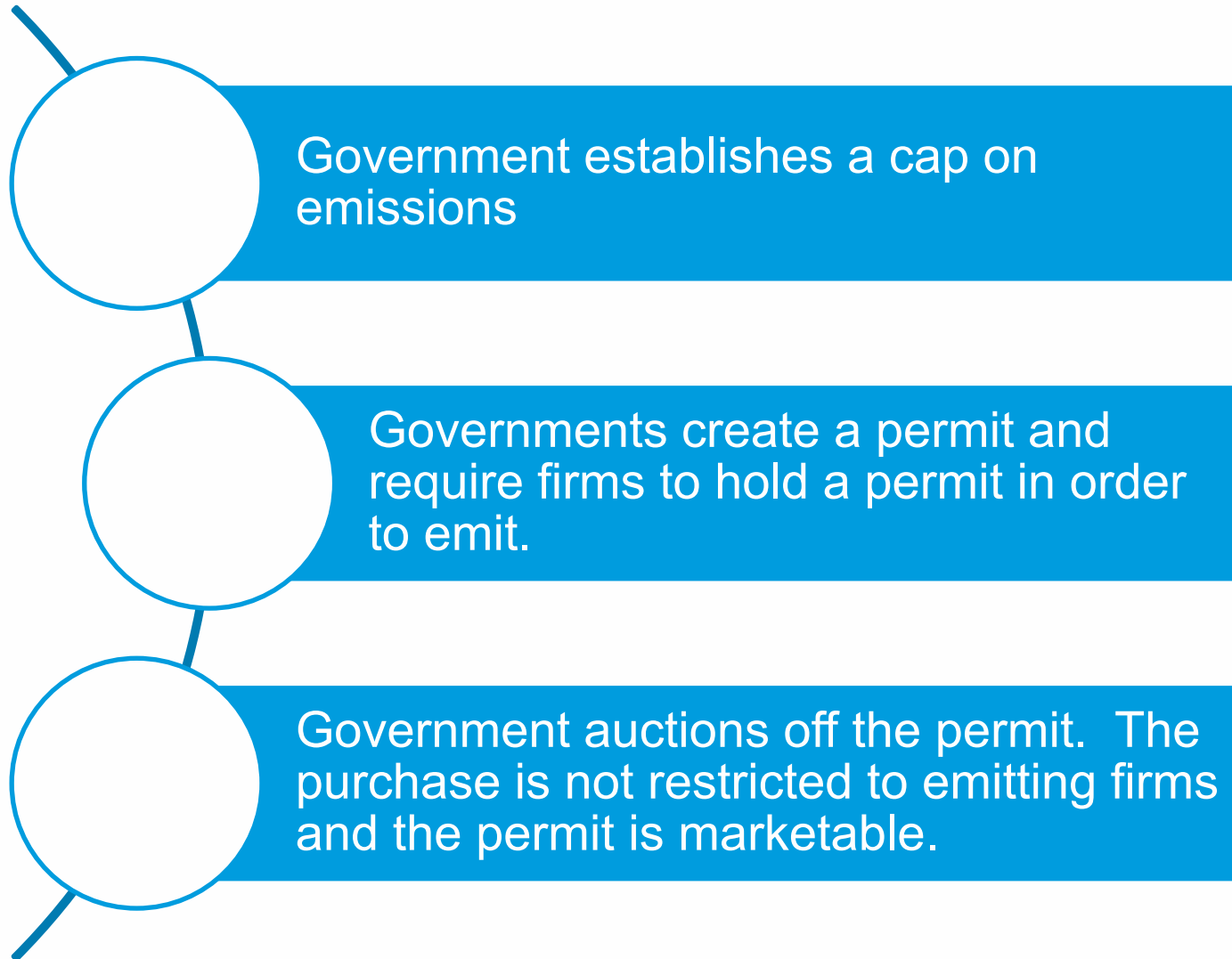
In 2021, 21.5% of global GHG emissions are covered by carbon pricing instruments in operation, representing a significant increase on 2020, when only 15.1% of global emissions were covered



World Bank: State and Trends of Carbon Pricing 2021

<http://hdl.handle.net/10986/35620>

Emission Trading Schemes (Cap and Trade schemes)



Headquarters,
Johnstown Castle Estate,
County Wexford, Ireland

GREENHOUSE GAS EMISSIONS PERMIT

Permit Register Number: IE-GHG058-10373-4

Operator: Intel Ireland Limited
Collinstown Industrial Park
Leixlip
Kildare

Emission Trading Schemes (Cap and Trade schemes)

Once purchased, the purchaser is free to sell the permit at the going market rate.

It is presumed that only non-financial corporations will emit. If companies exceed their quota for emissions, they can purchase unused permits from others.

Firms must surrender permits corresponding to the gases they emit.



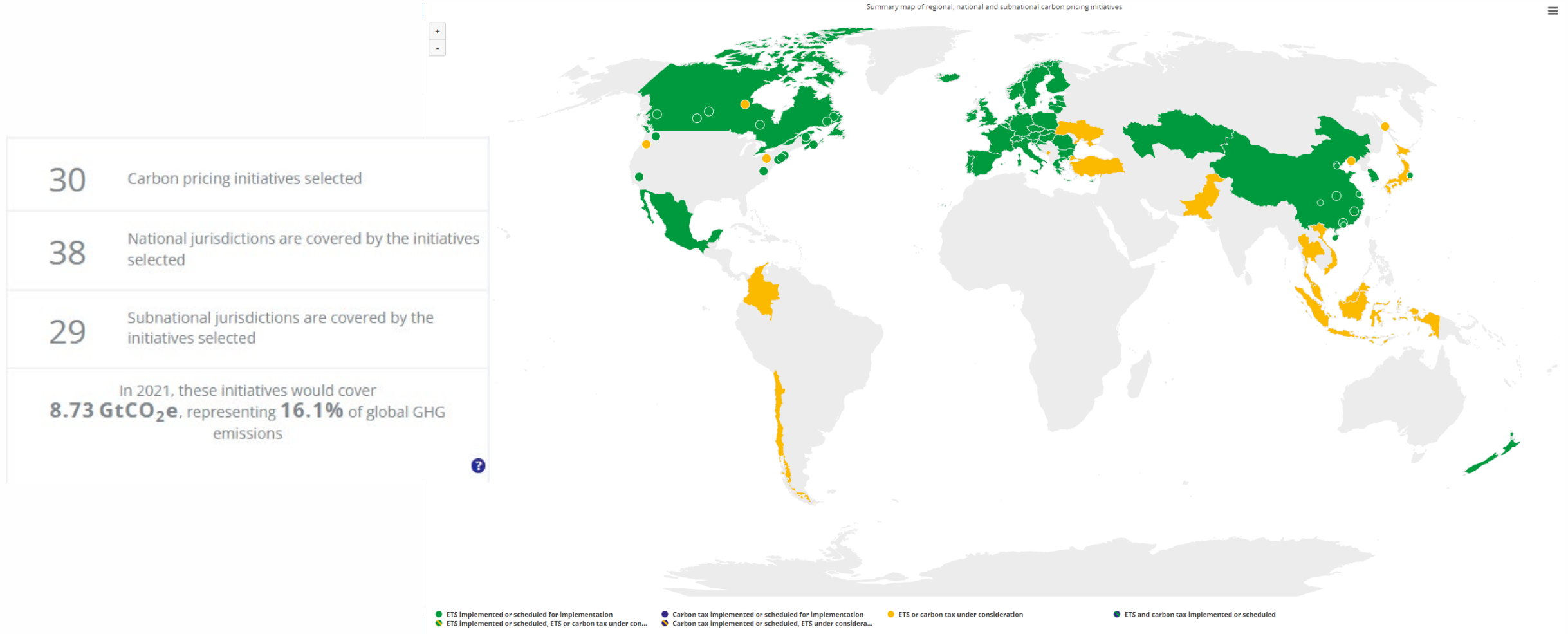
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Emission Trading Schemes – 30 schemes in operation or planned.



Source: https://carbonpricingdashboard.worldbank.org/map_data

Recording Emission Trading Schemes

- The 2008 SNA provides “lite” guidance on the treatment of Emissions Trading Schemes.
- A clarification note was issued by the ISWGNA based on the deliberations of an OECD/Eurostat Task Force on the Treatment of Emission Allowances and Emission Permits in the National Accounts (Final Report October 2010).
- The SNA update Wellbeing and Sustainability Task Team has been asked to examine the current set of recommendations and propose alternatives.

Recording Options

1. Emissions Permits recorded as a non-produced non-financial asset – contracts, leases, and licenses.
2. Emissions permits recorded as a resource lease (financial asset), with resource rent recorded at surrender.
3. Emissions permits recorded as contract, leases, and licenses with taxes on production recorded at auction.
4. Emission Permits recorded as split assets, with taxes on production recorded at surrender.

Alternative Views within the WSTT

- Some members of the WSTT feel that the surrendering of the permit should be reflected as an operating cost of businesses and that the surrender of the permit should be recorded as a tax event.
- They suggest that a fifth option be incorporated into the proposed guidance note.

Scenario to illustrate a possible fifth recording options

- 1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit (Total Value = \$1000).***
- 2. Assume at $T=1$ the market price increases to \$150 per unit (Total Market value at $T=1$ is \$1500).***
- 3. Assume at $T=2$ the permit holders surrender 5 units of the permit (Total Value of the surrendered permits at $T=2$ is \$750).***

Alternative Recording: Emission Permits at issuance is recorded as a liability / financial asset and as taxes on production at surrender

Account	STO	GG		NFC	
		+	-	+	-
Allocation of Primary Income Account	Taxes on production				
		+	-	+	-
Financial Account	Emission Permits - Loan		1,000	1,000	
	Cash	1,000			1,000
Balance Sheet Account	Emission Permits - Loan		1,000	1,000	
	Cash	1,000			1,000

✓ The initial sale of the permits leads to an increase in cash for the government and a corresponding liability and a decrease in cash and corresponding financial asset in the corporate sector.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Alternative Recording: Emission Permits at issuance is recorded as a liability / financial asset and as taxes on production at surrender

Account	StO	GG		NFC	
		+	-	+	-
Revaluation Account	Emissions Permit - Loan		500	500	
Balance Sheet Account	Emissions Permit - Loan		1,500	1,500	

✓ Changes in the market value of the permit are recorded in the revaluation account and reflected on the Balance Sheet.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Alternative Recording: Emission Permits at issuance is recorded as a liability / financial asset and as taxes on production at surrender

Account	STO	GG		NFC	
		+	-	+	-
Allocation of Primary Income Account	Taxes on production	500			500
Financial Account	Emissions Permit - Loan	500			500
Revaluation Account	Emissions Permit - Loan	250			250
Balance Sheet Account	Emissions Permit – Loan		750	750	

✓ The surrender of the permit is recorded as a tax on production (paid by the non-financial corporation to the government) valued at the issuing price. Any change in price between the issuing price and surrender price is recorded in the revaluation account.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Summary of the Alternative Options

Approach/Impacts	Emissions Permits recorded as a non-produced non-financial asset – contracts, leases, and licenses (Option 1)	Emissions permits recorded as a resource lease (financial asset), with resource rent recorded at surrender (Option 2)	Emissions permits recorded as contract, leases, and licenses with taxes on production recorded at auction (Option 3)
Recognition of the Atmosphere as a natural asset	X	X	X
Impact on Government Operating Surplus / Deficit / Savings		X	X
Impact restricted to Government Net Lending / Borrowing	X		
Impact on GDP			X
Limited Source Data Requirements	X	X	X
Clarity for Users	X	X	X
Impact on business operating costs		X	X
Consistency with quotas and radio spectra	X	X	

Summary of the Alternative Options

Approach/Impacts	Emission Permits at issuance is recorded as a liability / financial asset and as taxes on production at surrender	Emission Permits recorded as split assets, with taxes on production recorded at surrender (Option 4)
Recognition of the Atmosphere as a natural asset	X	
Impact on Government Operating Surplus / Deficit / Savings	X	X
Impact restricted to Government Net Lending / Borrowing		
Impact on GDP	X	X
Limited Source Data Requirements	X	
Clarity for Users	X	
Impact on business operating costs	X	X
Consistency with quotas and radio spectra		

Scenario to illustrate the possible recording options

1. Do you agree with the recognition of the atmosphere as an implicit asset (not to be recorded in the SNA balance sheet), as explained in the guidance note?
2. Do you agree that the proposed three options described in the note are the most prominent alternatives for the current 2008 SNA recording of pollution permits or do you prefer the inclusion of a fifth option?
3. Do you consider the proposed global consultation questionnaire (see Annex 1) appropriate for global consultation, and that the GN is ready for global consultation?

Appendix – Recording Examples

Scenario to illustrate the possible recording options

- 1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit (Total Value = \$1000).**
- 2. Assume at $T=1$ the market price increases to \$150 per unit (Total Market value at $T=1$ is \$1500).**
- 3. Assume at $T=2$ the permit holders surrender 5 units of the permit (Total Value of the surrendered permits at $T=2$ is \$750).**

**Current Recommendation: Emissions Permits
recorded as split assets, with taxes on
production recorded at surrender**

Current Guidance: Emissions Permits recorded as split assets, with taxes on production recorded at surrender

Account	STO	GG		NFC	
		+	-	+	-
Financial Account	Cash	1,000			1,000
	Receivable / Payable		1,000	1,000	
Balance Sheet	Cash	1,000		1,000	
	Receivable / Payable		1,000		

- ✓ When auctioned, a cash payment from the purchaser to the government is recorded.
- ✓ A prepaid tax payable / receivable equal to the value of the auctioned permit is also recorded.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to 150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Current Guidance: Emissions Permits recorded as split assets, with taxes on production recorded at surrender

Account	STO	GG		NFC	
		+	-	+	-
Other change in the volume of assets account	Emissions Permit			500	
Balance Sheet	Emissions Permit			500	
	Receivable / Payable		1,000	1,000	

✓ If the market value of the permit changes before it is surrendered, a non-produced non-financial asset is recorded in the account of the permit holder.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Current Guidance: Emissions Permits recorded as split assets, with taxes on production recorded at surrender

Account	STO	GG		NFC	
		+	-	+	-
Production Account	Other taxes on production	500			500
Financial Account	Receivable / Payable		500	500	
OCVA	Emissions Permit				250
Balance Sheet	Emissions Permit			250	
	Receivable / Payable		500	500	

- ✓ If the emissions permit is surrendered, other taxes on production is recorded along with offsetting changes in the prepaid tax payable / receivable.
- ✓ If the permit is sold both the prepaid tax and the non-produced asset will need to be recorded on the purchaser's balance sheet.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Current Guidance: Emissions Permits recorded as split assets, with taxes on production recorded at surrender

- ✓ It is possible for the market value of the emission permit to fall below the auctioned price (i.e. resulting in a negative asset value).
- ✓ Emission permits can be purchased by non-emitters – in these cases should they be recorded as a prepaid tax - especially if the purchaser never intends to surrender them.
- ✓ Non-residents can purchase the emission permits and surrender them in their economy – creating a taxes on production payment by a non-resident to a foreign government.
- ✓ The split asset approach does not align with how firms record these in their accounting records. Does the source data exist to record according to the split asset approach?
- ✓ The proceeds from the auctions permits impact government operating balances – are the proceeds intended to support current operations?

**Proposed Option 1: Emission Permits as
non-produced non-financial assets
(contracts, leases and licenses)**

Alternative Recording 1: Emission Permits as non-produced non-financial assets (contracts, leases and licenses)

Account	STO	GG		NFC	
		+	-	+	-
OCVA	Contracts, leases, licenses	1,000			
Balance Sheet	Contracts, leases, licenses	1,000			
Capital Account	Contracts, leases, licenses		1,000	1,000	
Financial Account	Cash	1,000			1,000
Balance Sheet	Cash	1,000			1,000
	Contracts, leases, licenses			1,000	

✓ When the government auctions the emissions permit a non-produced non-financial asset that authorizes emitters to use the atmosphere is created in the general government sector.

✓ The emissions permit is then immediately sold to the purchasers with the transaction recorded in the capital account as a sale of an existing asset.

1. Assume at T=0 the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at T=1 the market price increases to \$150 per unit.
3. Assume at T=2 the permit holders surrender 5 units of the permit.

Alternative Recording 1: Emission Permits as non-produced non-financial assets (contracts, leases and licenses)

Account	STO	GG		NFC	
		+	-	+	-
Revaluation Account	Contracts, leases, licenses			500	
Balance Sheet	Contracts, leases, licenses			1,500	
OCVA					750
Balance Sheet Account				750	

✓ The permit is a marketable asset (i.e. it can be sold on the market). If the market price increases (decreases) it is recorded in the revaluation account.

✓ The surrender of the permit is recorded in the other change in the volume of asset account.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

**Proposed Option 2: Emission Permits
recorded as a resource lease (financial
asset), with resource rent recorded at
surrender**

Alternative Recording 2: Emission Permits recorded as a resource lease (financial asset), with resource rent recorded at surrender

Account	STO	GG		NFC	
		+	-	+	-
Allocation of Primary Income Account	Property Income				
		+	-	+	-
Financial Account	Emissions Permit - Forward		1,000	1,000	
	Cash	1,000			1,000
Balance Sheet Account	Emissions Permit – Forward		1,000	1,000	
	Cash	1,000			1,000

✓ The initial sale of the permits leads to an increase in cash for the government and a corresponding liability and a decrease in cash and corresponding financial asset in the corporate sector.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Alternative Recording 2: Emission Permits recorded as a resource lease (financial asset), with resource rent recorded at surrender

Account	StO	GG		NFC	
		+	-	+	-
Revaluation Account	Emissions Permit - Forward		500	500	
Balance Sheet Account	Emissions Permit - Forward		1,500	1,500	

✓ Changes in the market value of the permit are recorded in the revaluation account and reflected on the Balance Sheet.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Alternative Recording 2: Emission Permits recorded as a resource lease (financial asset), with resource rent recorded at surrender

Account	STO	GG		NFC	
		+	-	+	-
Allocation of Primary Income Account	Property Income – Resource Rent	500			500
		+	-	+	-
Financial Account	Emissions Permit - Forward	500			500
Revaluation Account	Emissions Permit - Forward	250			250
Balance Sheet Account	Emissions Permit - Forward		750	750	

- ✓ The surrender of the permit is recorded as a resource rent (paid by the non-financial corporation to the government) valued at the issued price. Any change in value between the time of issuance and time of surrender is recorded in the revaluation account.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

**Proposed Option 3: Emissions Permits
recorded as Contracts, Leases, Licenses, with
taxes on Production recorded at Auction**

Alternative Recording 3 – Emissions Permits recorded as Contracts, Leases, Licenses, with taxes on Production recorded at Auction

Account	STO	GG		N/FC	
		+	-	+	-
Allocation of Primary Income Account	Taxes on production	1,000			1,000
Other Change in the Volume of Asset Account	Contracts, leases, licenses			1,000	
		+	-	+	-
Financial Account	Cash	1,000			1,000
Balance Sheet Account	Contracts, leases, licenses			1,000	

✓ At the time of auction, the government records taxes on production received and the corporation records taxes on production paid (i.e. the transaction is recorded on a cash basis).

✓ In addition, a non-produced non-financial asset is recorded on the balance sheet of the non-financial corporation.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Alternative Recording 3 – Emissions Permits recorded as Contracts, Leases, Licenses, with taxes on Production recorded at Auction

Account	STO	GG		NFC	
		+	-	+	-
Revaluation Account	Contracts, leases, licenses			500	
Balance Sheet Account		+	-	+	-
	Contracts, leases, licenses			1,500	



The increase in the market price is recorded in the revaluation account and reflected in the balance sheet account at the end of the period.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Alternative Recording 3 – Emissions Permits recorded as Contracts, Leases, Licenses, with taxes on Production recorded at Auction

Account	STO	GG		NFC	
		+	-	+	-
Other change in the volume of assets account	Contracts, leases, licenses				750
Balance Sheet Account	Contracts, leases, licenses			750	

- ✓ The surrender of the permit by the nonfinancial corporation is recorded as an other change in the volume of asset accounts and reflected in the balance sheet account at the end of the period.

1. Assume at $T=0$ the government auctions 10 permits and the permits are sold for \$100 per unit.
2. Assume at $T=1$ the market price increases to \$150 per unit.
3. Assume at $T=2$ the permit holders surrender 5 units of the permit.

Thank You!

Questions/Comments/Suggestions?