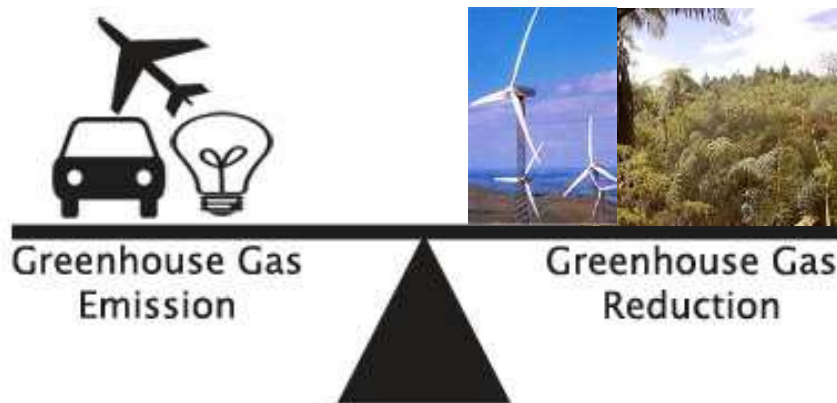


Carbon market in a nutshell

- Climate change is the issue
- Greenhouse gas emissions is the problem
- Price on carbon is the solution
- Carbon trading is the mechanism
- 1 tonne of carbon dioxide is the currency
- Projects are sellers, emitters are buyers



What is a carbon credit?

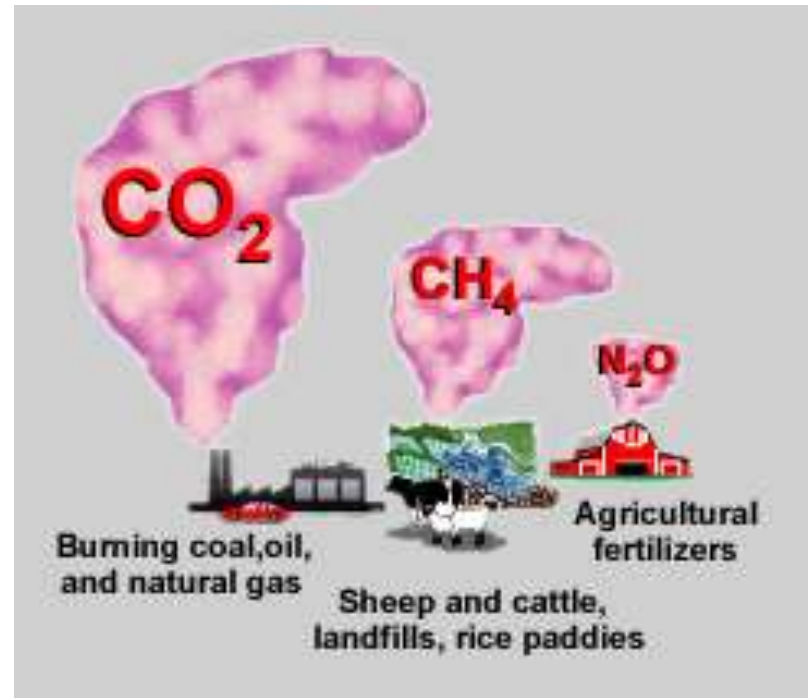
A tradable unit, permit or certificate equivalent to one tonne of carbon dioxide



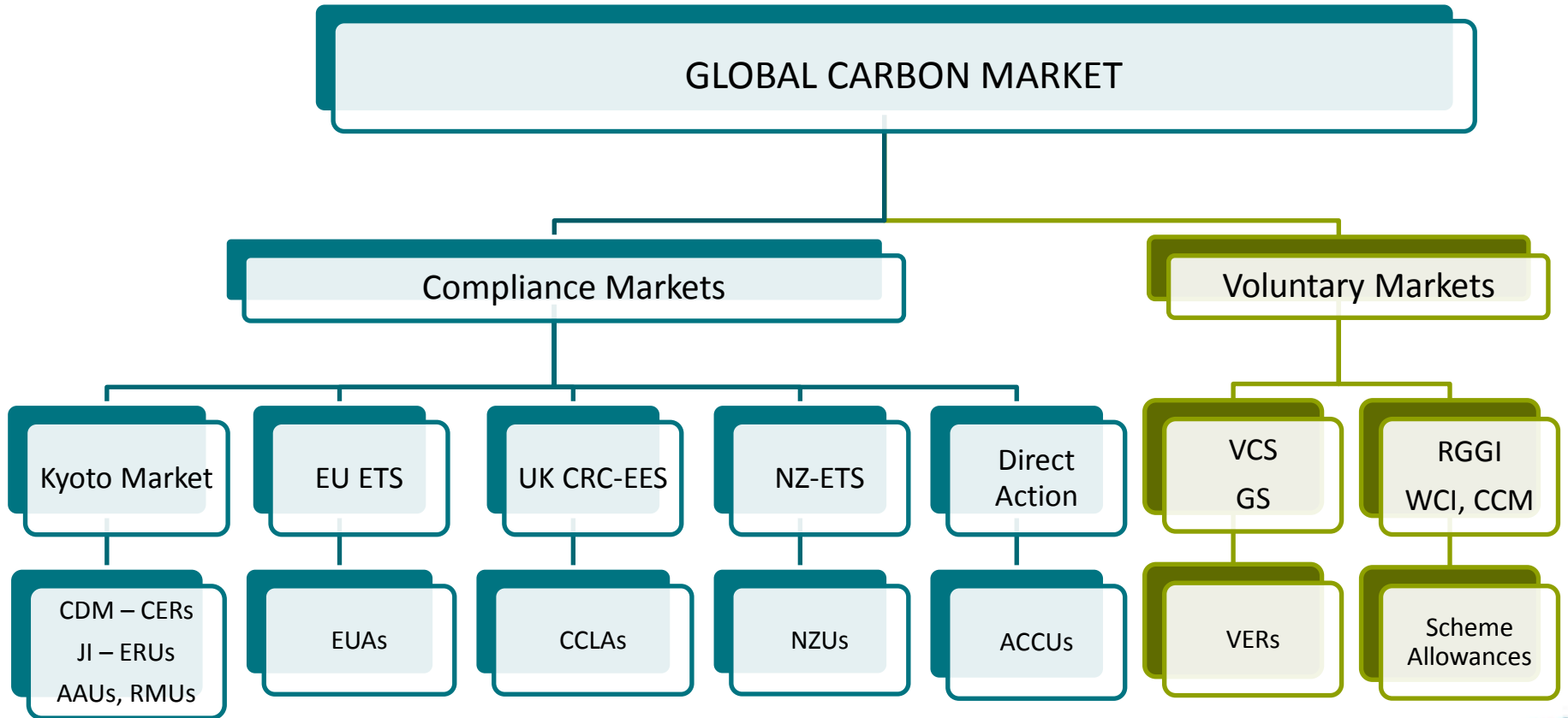
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What is tCO₂e?

- There are 7 Kyoto greenhouse gases
 - Carbon dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous oxide (N₂O)
 - Hydrofluorocarbons (HFCs)
 - Perfluorocarbons (PFCs)
 - Sulphur hexafluoride (SF₆)
 - Nitrogen trifluoride (NF₃)
- Each has a Global Warming Potential (GWP)
 - Usually based on 100 year life in the atmosphere
- Carbon dioxide has a GWP of 1
- The other Kyoto gases are expressed as carbon dioxide equivalents
- Methane has a GWP of 25, so 1 tonne of methane is equivalent to 25 tonnes of carbon dioxide or 25tCO₂e



Compliance vs voluntary markets



Types of carbon credits

MARKET	UNIT		
Kyoto	AAU	Assigned Amount Units	Nationally allowed emissions for 2008-2012 commitment period
	RMU	Removal Units	Issued in respect of net removals by sinks
CDM	CER	Certified Emissions Reduction	Issued in respect of sequestered or abated emissions from a Clean Development Mechanism project
JI	ERU	Emissions Reduction Unit	Converted from an AAU or RMU and issued to a Joint Implementation project
EU UK NZ Australia	EUA CCLAs NZU ACCU	European Union Allowances CRC Allowances New Zealand Units Australian Carbon Credit Units	Nationally issued and traded units that can be converted into AAUs
Voluntary	VER	Verified Emissions Reductions	Units issued by a voluntary scheme

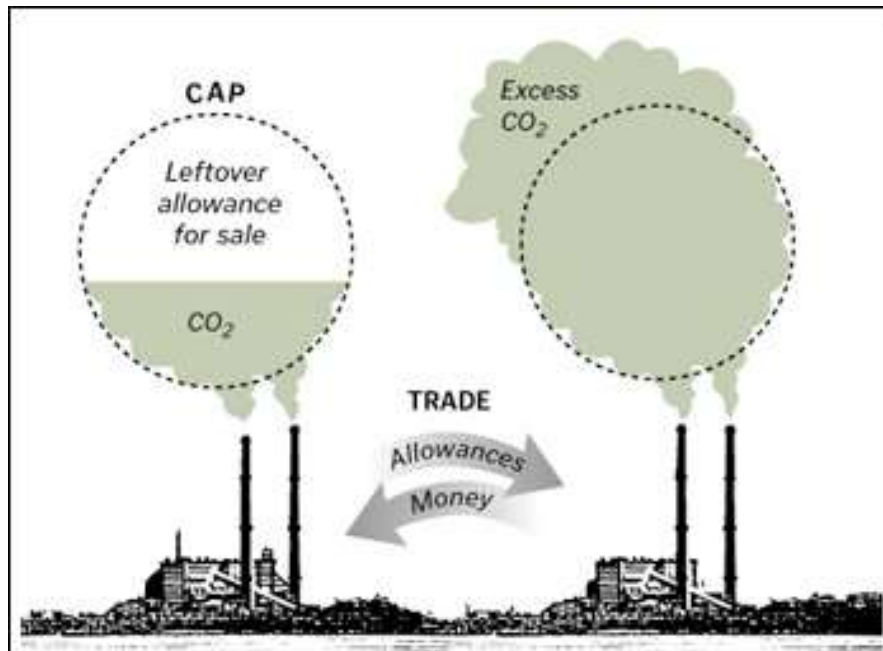
What can you do with carbon credits?

- Be awarded
- Purchase
- Obtain through auction
- Hold/Retain
- Surrender
- Trade/Sell
- Retire/Cancel



Why are there carbon credits?

- Climate change
- Kyoto Protocol commitments
- Emission Trading Schemes



EU-ETS



Carbon
Reduction
Commitment



Ministry for the
Environment
Manatū Mo Te Taiao

NZ ETS



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When are carbon credits valid?

- Kyoto first commitment period 2008-2012
- AAUs valid until July 2015
- Will not be able to convert NZUs to AAUs
- NZUs will not be internationally tradable
- Status of Kyoto units unknown
- EU-ETS legislated until 2020 and likely to continue accepting Kyoto units



How are carbon credits created?

- Standards (CDM, Gold Standard, VCS)
- Approved methodologies (CDM, VCS, CFI)
- Project Design Document (PDD)
- Validation – forward looking audit
- Emissions reduction measured – usually over 12 months
- Verification – backward looking audit
- Certification within a scheme e.g.
 - CDM, Gold Standard, VCS
 - Issued unique serial number
- Listed on a register – usually public

Carbon credit standards

- Compliance
 - CDM or JI
 - CDM or JI + Gold Standard
 - PFSI
 - Carbon Farming Initiative (Australia)
- Voluntary
 - VCS
 - Gold Standard



Principles

CREDIBILITY

- Eligible
- Additional
- Permanent
- Verifiable
- No Leakage

INTEGRITY

- Avoid fraud: double use
- Traceable: unique serial numbers
- Cancel (or equivalent)
- Transparent: on a public registry



Carbon credit registries

- Compliance
 - International Transaction Log (United Nations)
 - Australian National Register of Emission Units (ANREU)
 - New Zealand Emissions Unit Register (NZEUR)
- Voluntary
 - Markit
 - APX



Where does the trading take place?

- Compliance schemes e.g. NZ-ETS
- Directly between seller and buyer
- Carbon traders
- Trading exchanges
- Banks
- Carbon offset programmes



Carbon trading exchanges

- Australian Securities Exchange (ASX)
- Carbon Trade Exchange (CTX)
- Commodities Europe
- European Climate Exchange
- European Energy Exchange
- NASDAQ QMX
- Power Next



Who does what in trading?

- Project owner
 - Own and operate an offset project
 - Participate in a scheme e.g. PFSI
 - Account on a public registry
 - Carbon credits issued to account of owner/seller
- Auditor – validation/verification
- Carbon trader
 - Carbon trading platform or exchange
 - Contract to exchange ownership
 - Carbon credits are moved to account of buyer

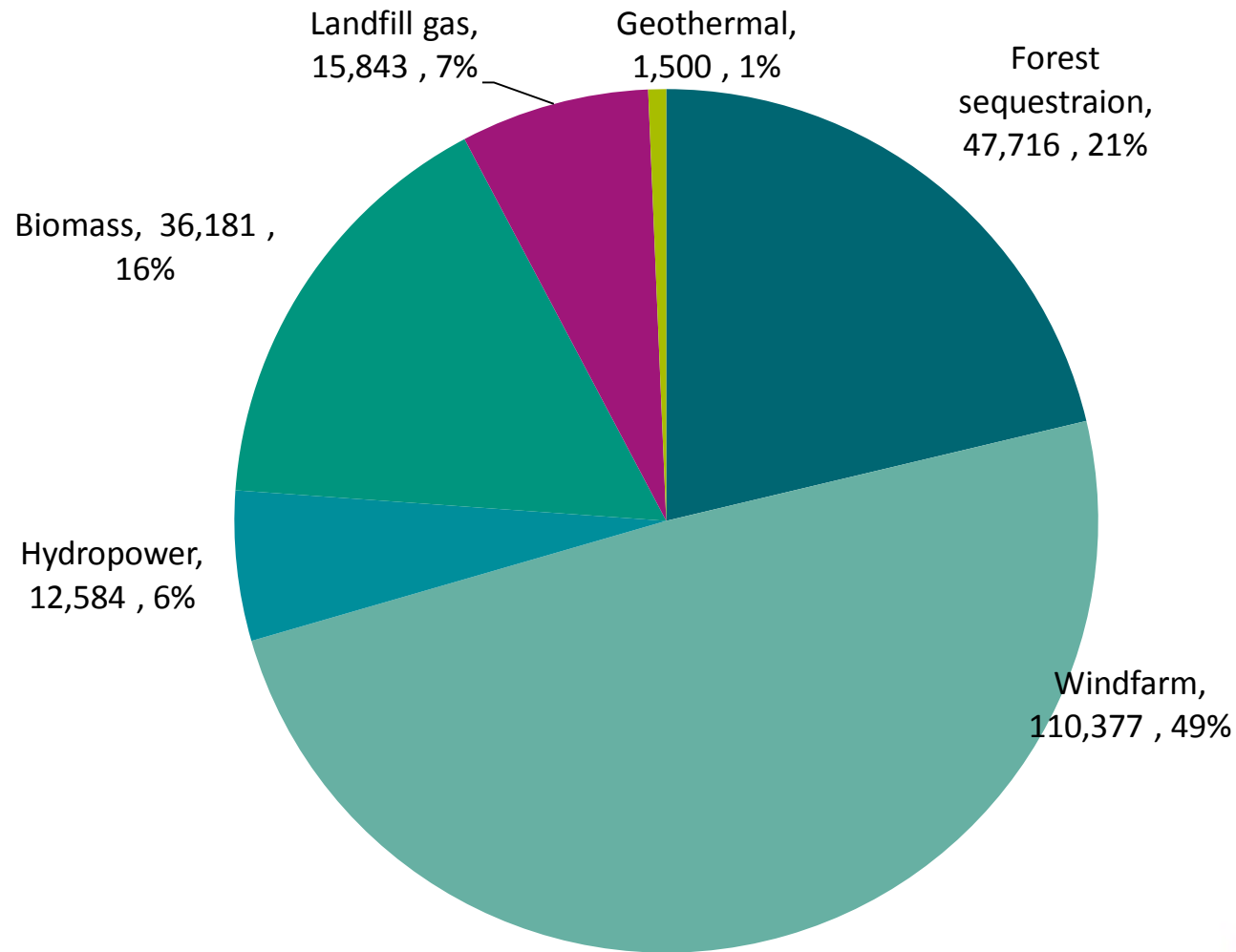


carboNZero programme

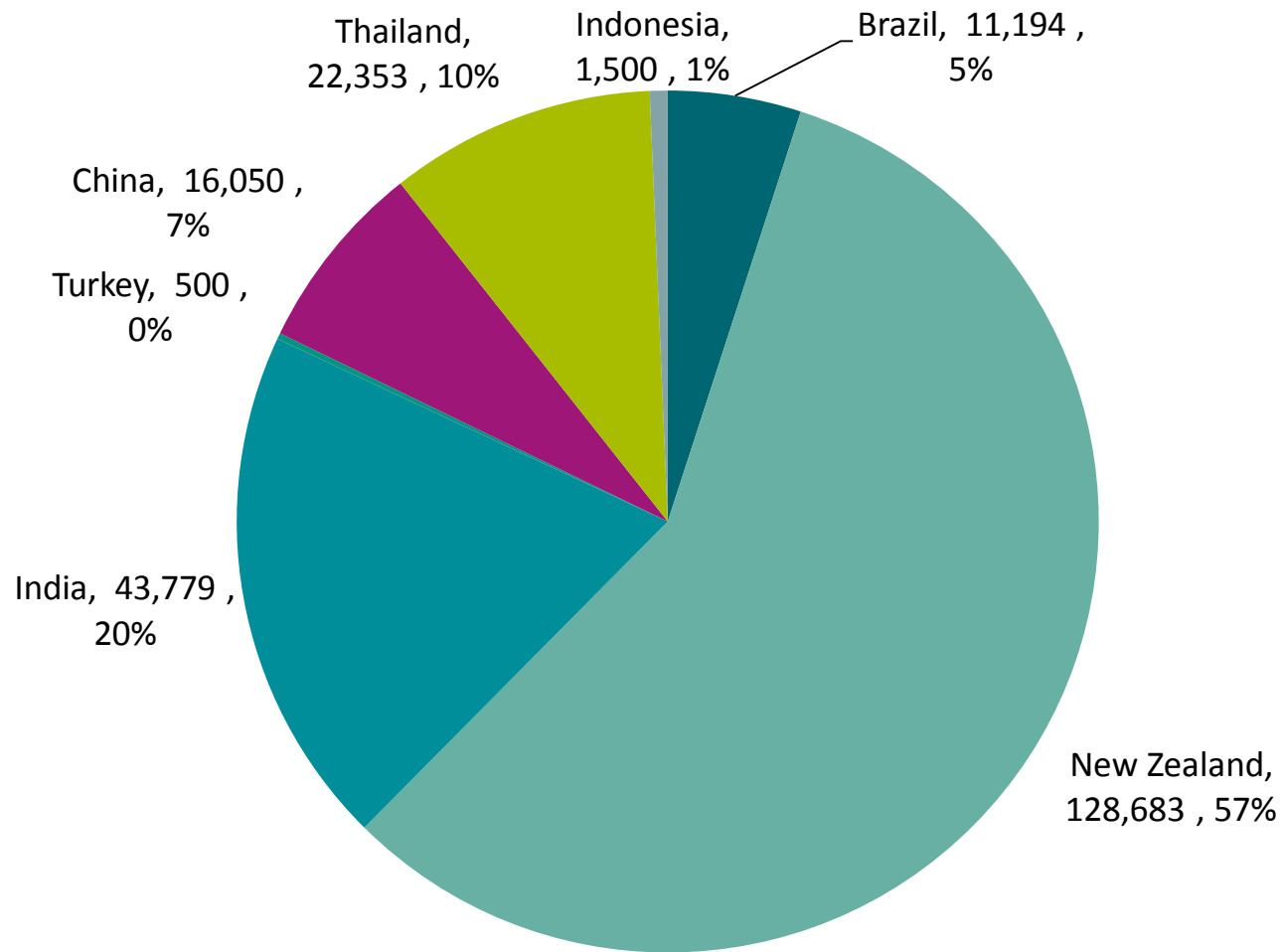
ALL SALES TO DATE	tCO ₂ e
Total externally sourced credits (all time periods)	186,000
Total credits sold through carboNZero programme (all time periods)	275,000
TOTAL OFFSET THROUGH PROGRAMME	461,000



Type of carbon credits sold



Carbon credits sourced from



New Zealand projects

- 40 Projects to Reduce Emissions (PRE)
 - Joint Implementation, ERUs (AAUs)
 - Alternative energy, landfill gas recovery, energy efficiency
 - Almost all gone
- 40+ Permanent Forest Sinks Initiative (PFSI)
 - NZ government scheme, NZUs (AAUs)
 - 1 NZU issued per tCO₂e sequestered
- NZ Emissions Trading Scheme (NZ ETS)
 - Part of NZ response to Kyoto Protocol
 - 1 NZU surrendered per 2tCO₂e emitted



Real benefits with PFSI

Forest regeneration sites in NZ

- Credit revenue being used to:
 - Expand forest sites through more land purchase
 - Help pay for general management of the site(s)
- Biodiversity, erosion control, water quality
- Public access/community value



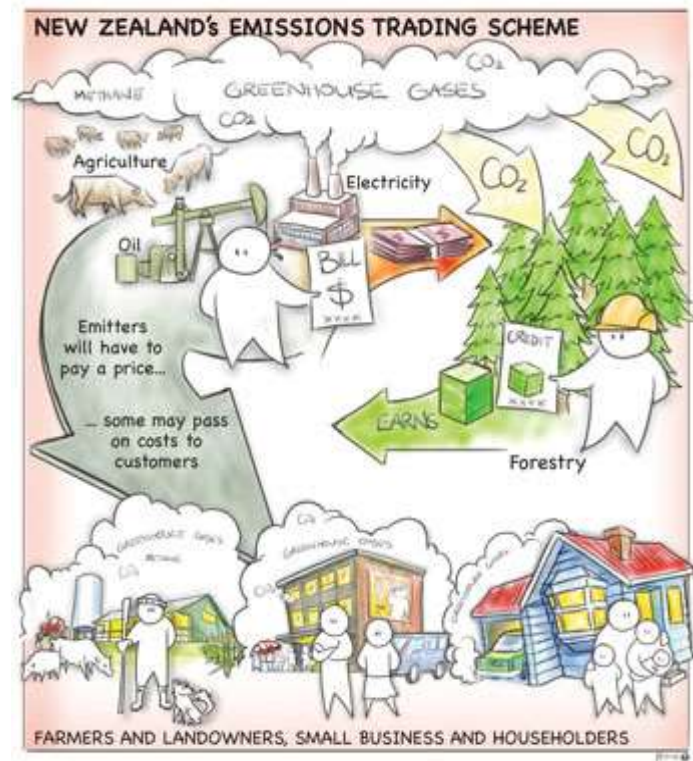
Some PFSI projects not suitable for carboNZero certification

- Exotic and plantation forestry
- Where covenant less than 100 years
- Where projects have opted out of covenant and may harvest early
- Where the carbon credits could be in future be replaced by inferior units



NZ-ETS NZUs cannot be used as offsets for carbon neutral claims

- Emissions reported are only some of Scope 1 and Scope 2
- Reporting organisations may surrender units or pay money
- There is no verified reduction associated with the unit
- There is no cap on the NZ-ETS
- The units are surrendered not cancelled
- The units may be recycled and allocated again
- The NZ-ETS puts a price on carbon in the economy in the same way as a carbon tax



Coming Kyoto negotiations

- Aim is to get all countries on the bus
- All must submit Nationally Determined Commitments by March 2015
 - This must be a number
 - Measurable and verifiable
 - Not legally binding
- Commitments must be backed by policy
 - Policy will be legally binding
- Talking of goal of net zero emissions by 2100
- Offsets will be a large part of commitments
- NZ attitude to offsets must change from “penance” to “legitimate contribution”



More information on carbon credits

Website pages:

www.carbonzero.co.nz/faq.asp

for questions and answers about carbon credits

www.carbonzero.co.nz/options/mitigate.asp

www.carbonzero.co.nz/documents/CarbonCredits_infosheet.pdf

Hinewai Reserve video:

<http://youtube/u1FtUmfXt8c>



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