

Voluntary Carbon Market

Introduction and Opportunities for the Pacific Islands

Katerina Syngellakis



CDM capacity building workshop in Fiji, 24th January 2011



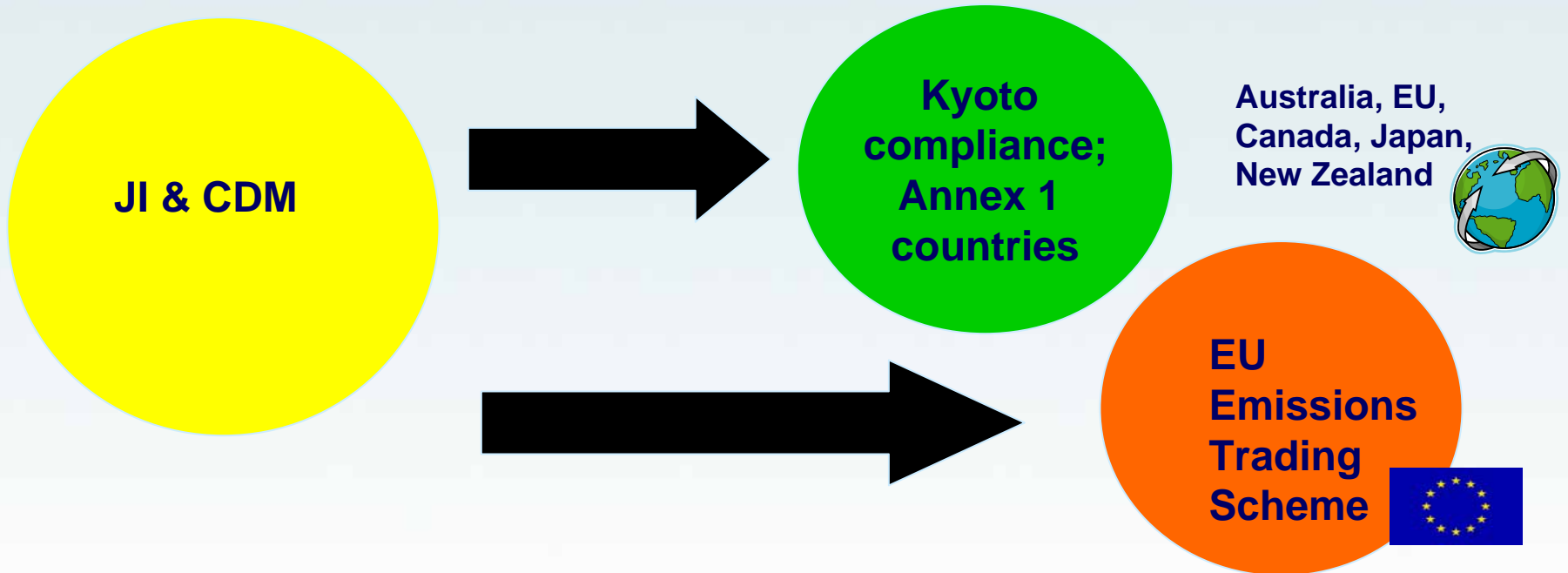
Presentation Overview

- **Introduction to Voluntary Carbon Markets**
 - Types
 - Advantages / Issues
 - Buyers / Sellers
 - Project and prices
 - Standards and registries
- **Opportunities in the Pacific**
 - Advantages of Pacific VER projects
 - Project Types
 - Essentials for project development

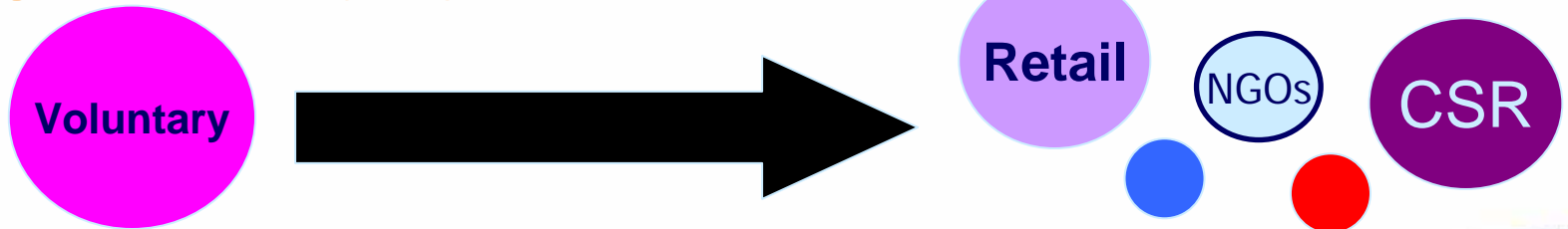


Carbon market structure

COMPLIANCE (Mandatory targets) Market



VOLUNTARY market



Voluntary Carbon Markets

Two Types of Markets

- n Cap-and-Trade (limits emissions of countries, regions, sectors)
- n Offset Market (companies or individuals not subject to mandatory GHG ER but wanting to offset their own emissions)



Voluntary Cap-and-Trade

- n Successful mandatory cap-and-trade examples: SO₂ (US), European Trading Scheme
- n Only Voluntary Cap-and Trade system: Chicago Climate Exchange
- n Oversupply of allowances caused the price of allowances to crash (US\$0.05)
- n Closed in December 31, 2010



Voluntary Offset Market

- n Organisations, companies & individuals: purchase CO₂ emission credits and remove them from the market in order to offset their own emissions.
- n Governments: national voluntary offset programs.



Voluntary Offset Market

n Uses Carbon Credits

- Generated through a project based system
- Uses a Baseline – Project Emissions
- Similar to CDM procedures (many projects use same methodologies)
- Additionality verified by independent third party



Offset Market

GHG
Emissions



BAU

Project
Emissions

Time



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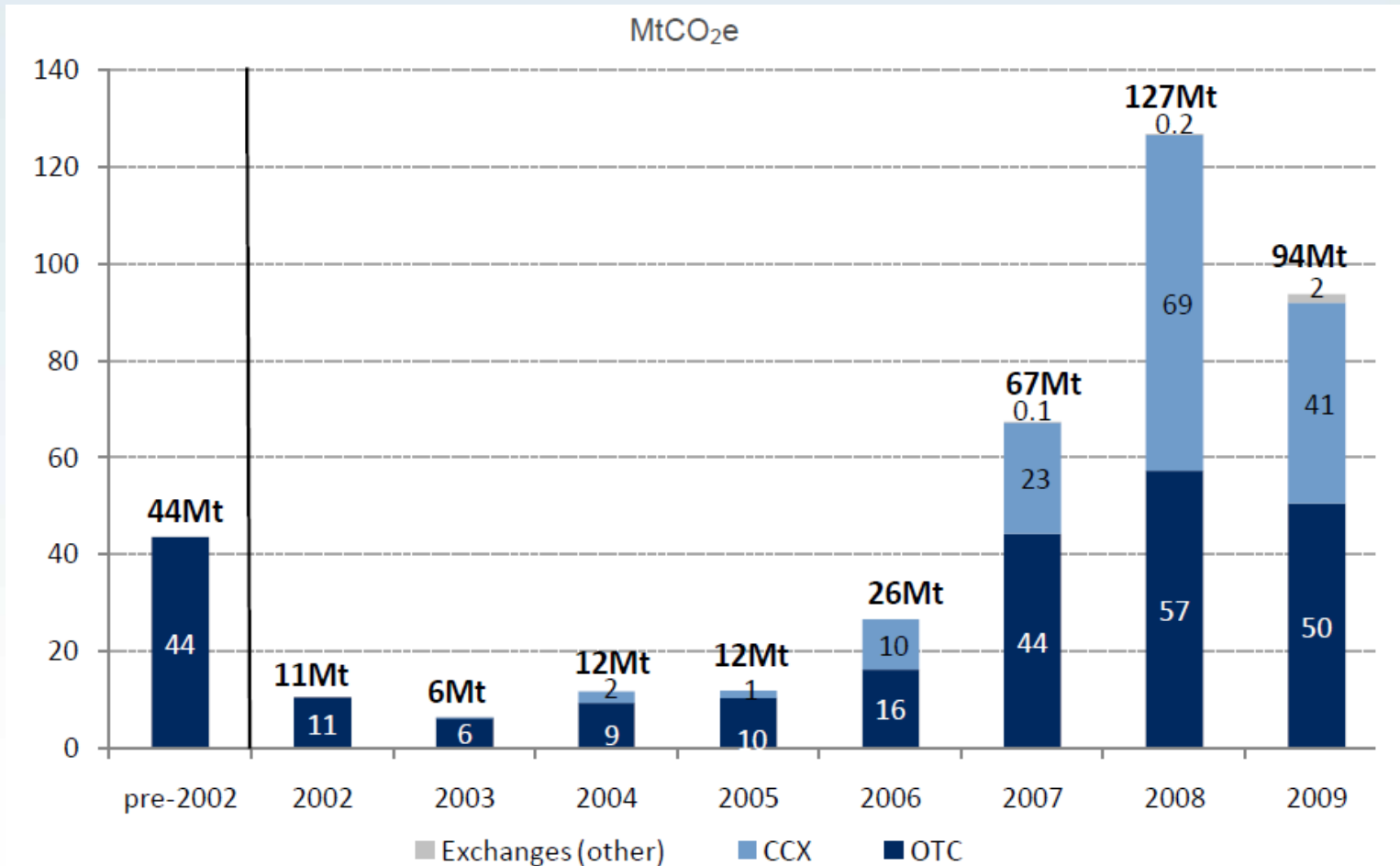


Voluntary vs. CDM

	Voluntary	CDM
Commodity	VER	CER
Price	Variable accordingly with standard and project (typically ~ €2-6)	Higher (~ €11)
Coverage	Voluntary / worldwide	Annex 1 countries
Market size	Smaller	Larger
Volume	2009: 94 MtCO ₂ CCX 2010: 1.3 MtCO ₂ GS expect: 18 MtCO ₂	2009: 1,265 MtCO ₂ (EU ETS 2009: ~ 6,000 MtCO ₂)
Regulation	No formal regulation	UNFCCC EB
Methodologies	CDM and others	Approved by EB
Independent Third Party	CDM DOEs and others	DOEs and EB



Growth of Voluntary Carbon Markets



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.

Notes: Based on 149 survey respondents. Annual totals may not equal sum of categories due to rounding.



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Advantages: Voluntary vs. CDM

- n Less bureaucratic
- n Less costly (~ US\$30,000)
- n Niche/new sectors not covered by CDM
- n Can contribute more to sustainable development
- n Easier to register forestry projects
- n Cheaper to generate credits



Issues: Voluntary

- n Generally lower price
- n Quality: certainty of additionality
- n Transparency
- n Number of standards: too confusing
- n Market is still small – just 1% of the global carbon market



Voluntary Market: Buyers

n Who buys carbon credits?

Companies, NGOs and individuals

n For?

n Offsetting activities and products (travels, books, music festivals)

n Why?

- Competitive advantage: Public relations, Branding, Corporate Social Responsibility
- Investment/Resale



Voluntary Market Suppliers

- n Project Developers: Develop GHG emissions-reduction projects and sell the VERs
- n Wholesalers: Only sell offsets in bulk and often have ownership of a portfolio of credits.
- n Retailers: Sell small amounts of credits to individuals or organizations, usually online, and have ownership of a portfolio of credits.
- n Brokers: Do not own credits, but facilitate transactions between sellers and buyers.



Voluntary Market: Projects

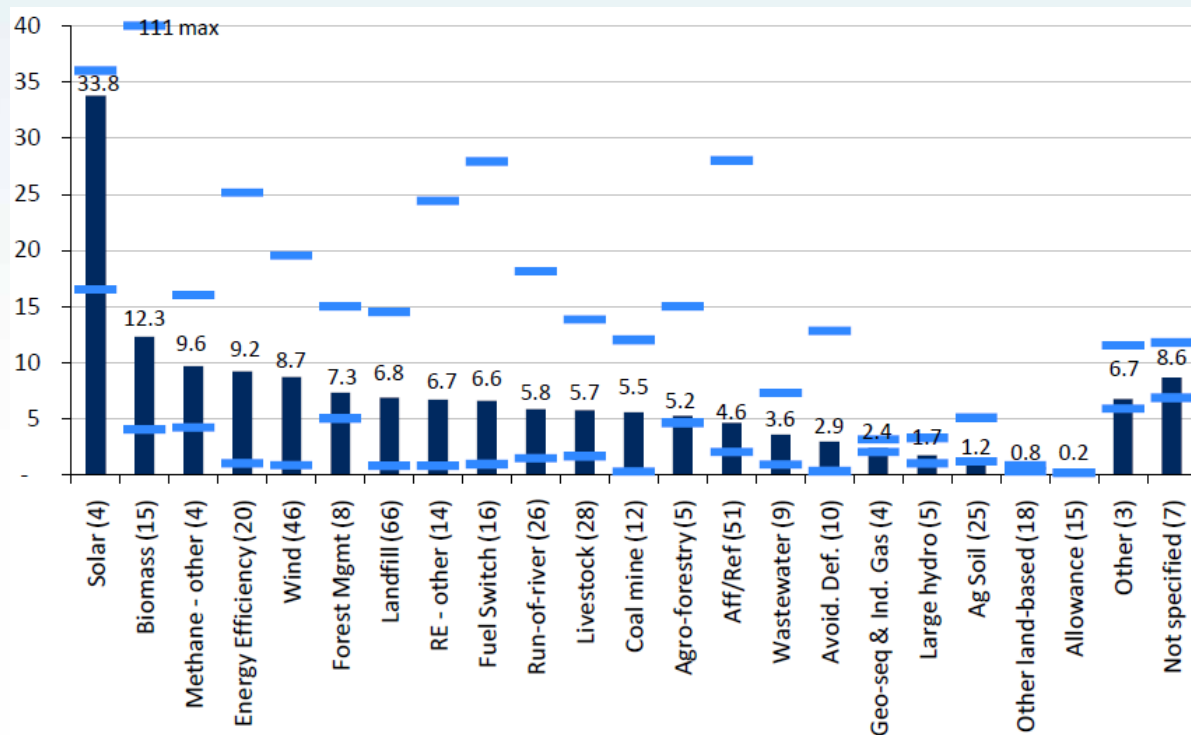
- n Which type? The big three (2009):
 - Landfill methane
 - Forestry
 - Wind
- n Others
 - Other Renewable energy (hydro, biomass and solar)
 - Energy efficiency
 - Sequestration / Agriculture / waste water



Voluntary Carbon Credits: Price

n Higher price for premium credits

n Average US\$ 4-7/tCO₂



Price related to Project characteristics

- n Project **type** is one of the most significant factors influencing price
- n Highest: Solar (\$33.8/tCO₂e) and biomass projects (\$12.3/tCO₂e).
- n Medium: (\$4-8/tCO₂e) forestry and landfill
- n Lowest: large hydro (\$1.7/tCO₂e) and agricultural soil credits (\$1.2/tCO₂e).



Price related to Project characteristics

- n Project **location** can also influence
 - n Project environmental impacts
 - n Contribution to local community – social
 - n Project size
 - n Which Standard used to check additionality
-
- ❖ Not related to project: National and Regional politics



Existing Standards

- n Voluntary Carbon Standard (VCS): CDM & own meth
- n Gold Standard: uses CDM meth
- n CAR: own meth
- n VER+: CDM & new meth
- n CCBS: CDM meth
- n Plan Vivo: project specific meth
- n GHG Protocol: generic guidelines
- n ISO14064: generic guidelines



Registries

- n Verified carbon reduction are converted to a saleable asset
- n Credits have unique ID
- n Transferred from seller to buyers account
- n Examples: Gold Standard Registry, VCS Registry, Markit (TZ1), CAR



Examples

Thai Biomass Project

9.9MW Cogeneration Plant

Fuel: rice husks

Standard: VCS

Third-party verification: TUV Nord

Price: US\$16/tCO₂

Offsetting a return flight Suva-Sydney:
US\$21



Examples

Erbaqu Hydro Power Project

9.6MW from 6 run-of-river hydro stations

Country: China

Standard: VCS

Third-party verification: Green-e Climate

Price: US\$16/tCO₂

Offsetting annual emissions of a 4x4:
US\$121



Why VERS from the Pacific?

- n Niche market with desirable project characteristics:
 - Location – Small and vulnerable Pacific Islands
 - Type – Solar and other renewables
 - Strong environmental and social project contributions – community projects
 - High profile – good for buyers' image
 - The story behind the credit



Opportunities in the Pacific

- n Renewables + good project characteristics = higher price for VERs
- n Solar, mini-hydro, biomass
- n REDD forestry + forest management + exploring mangrove conservation
- n Landfill and waste water
- n Energy efficiency (good price but VER volumes are small)



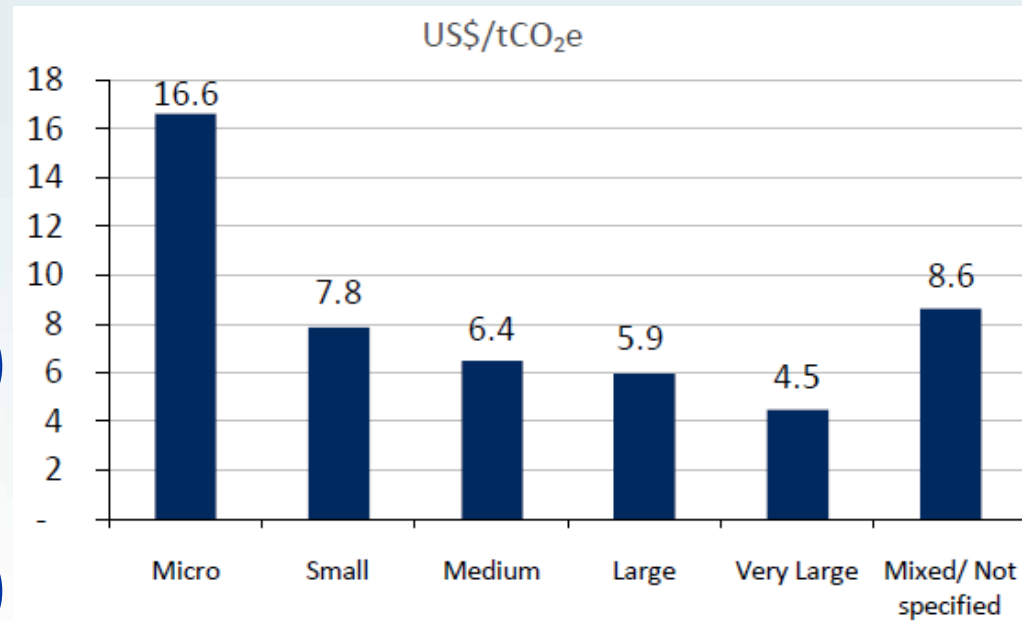
Solar Projects – Highest prices

- n Solar's high price may be attributed to:
 - solar offset scarcity
 - micro-scale project sizes
 - higher production costs.
- n Higher prices regardless of location or standard utilized
- n Solar = overall environmental appeal and/or level of buyer comfort with the familiar project type



Project sizes – small is beautiful

- n Micro (< 5,000 tCO₂e/year)
- n Small (5,000 to 19,999 tCO₂e/year)
- n Medium (20,000 to 99,999 tCO₂e/year)
- n Large (100,000 to 500,000 tCO₂e/year)



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.
Note: Based on 215 observations.



How to Develop a Project?

1. The project must require carbon credit revenue to be financial attractive and/or to secure finance.
2. It should contribute to the sustainable development of the local community
3. Present project to credit buyers

- Main constraint in PICs = proving additionality

