



Introduction to the Carbon Markets

Presented by Roman Schibli, Project Manager

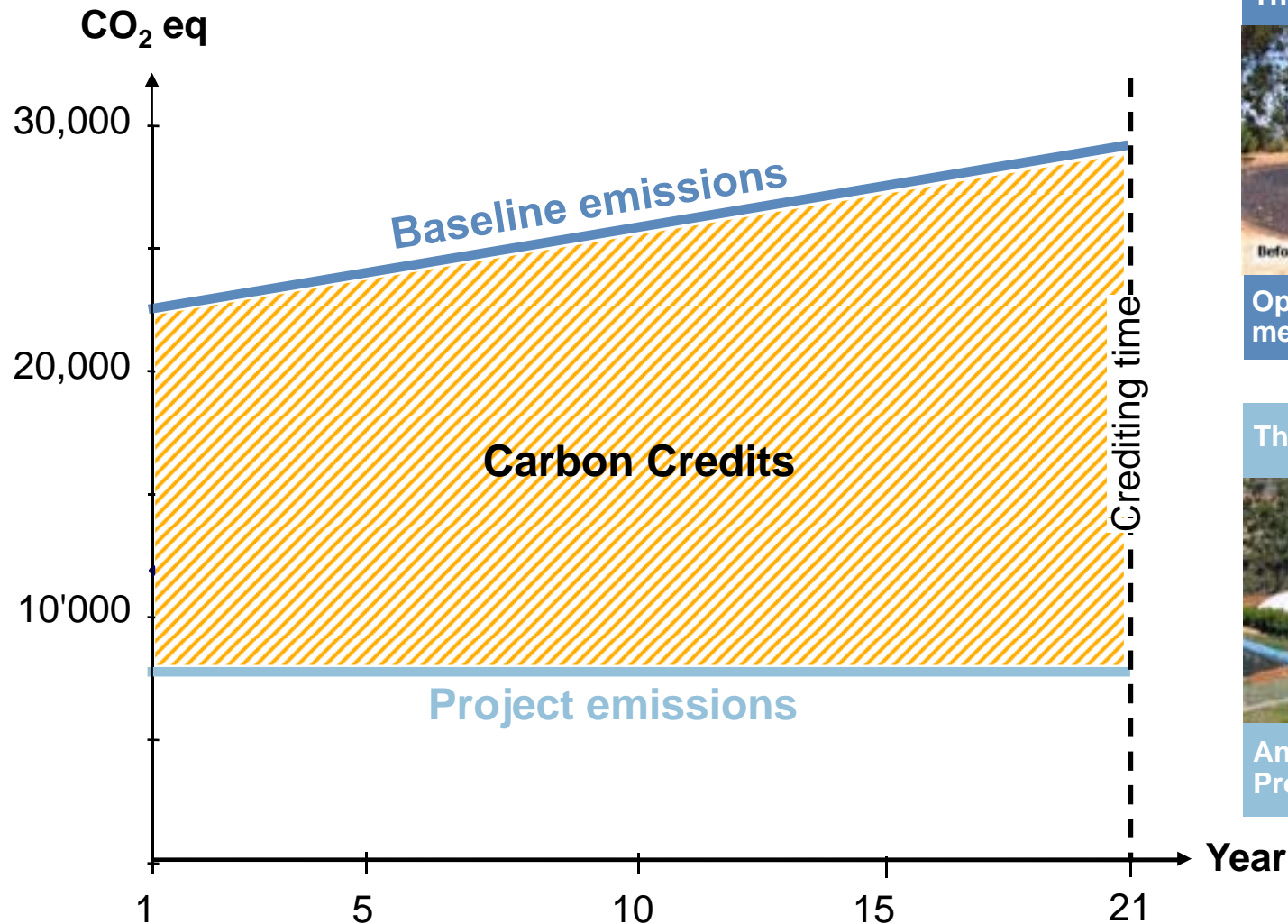
Frick, May 11 2010



Carbon credits – the basics

- Insitutional set-up & outlook
 - A bit about South Pole
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Carbon credits are issued for reductions in greenhouse gas emissions



**Business as usual:
The “baseline” scenario**



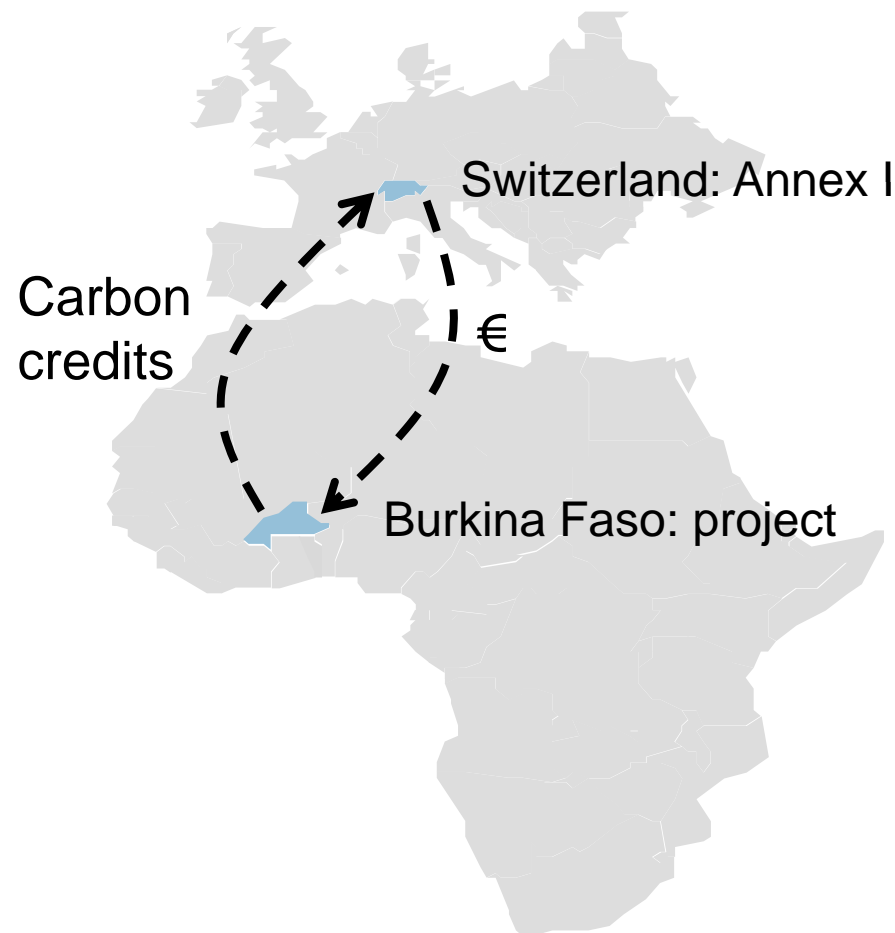
Open lagoons emitting methane

The CDM project



**Anaerobic digesters that
Produce electricity/heat**

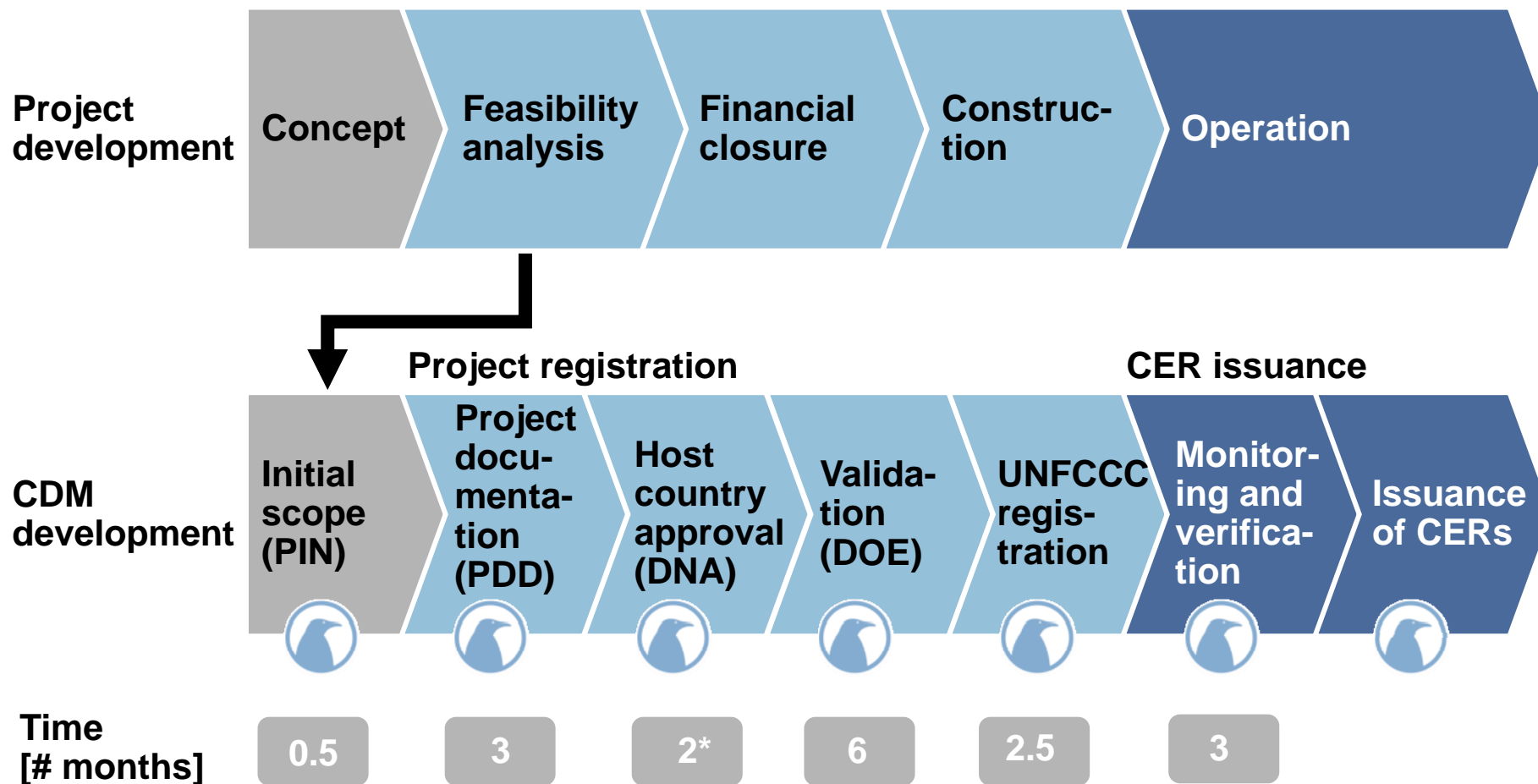
Carbon credits can be traded internationally



Example

- **Switzerland needs to reduce its emissions** to comply with the PK
- **Burkina Faso** has no emission limits
- **In Burkina many emission reduction opportunities exist** and some are realized
- **Carbon credits are sold** from Burkina Faso to Switzerland





Carbon Credit projects go through a lengthy approval cycle



* In parallel to validation

A number of factors need to be fulfilled for a project to become viable carbon credit project



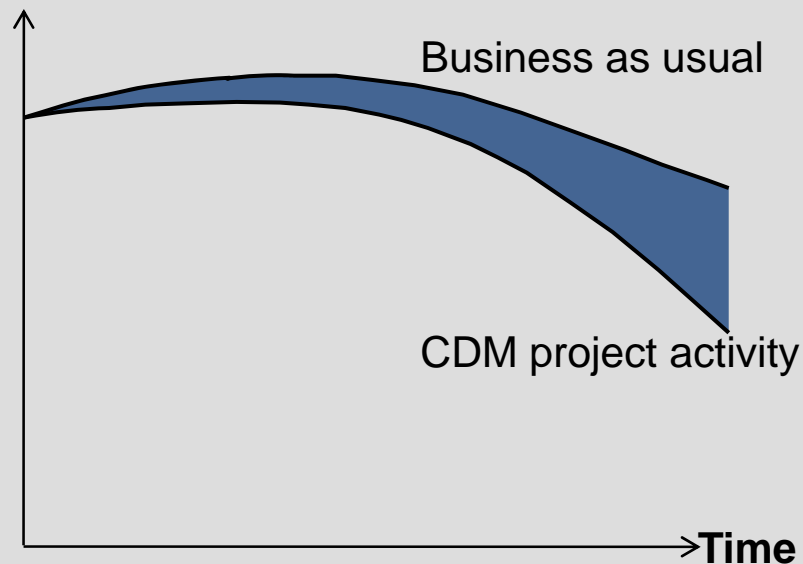
Factors	Description	Difficulty
1 Additionality	<ul style="list-style-type: none">• Additional effort• Not financially interesting• Early consideration	
2 Methodology	<ul style="list-style-type: none">• Approved methodology by the UNFCCC• Possibility to develop a new methodology• http://cdm.unfccc.int/DOE/scopes.html	
3 Critical size	<ul style="list-style-type: none">• High transaction costs• Bigger than 30'000 tCO2e/y	
4 Sustainable development	<ul style="list-style-type: none">• Project needs to contribute to sustainable development in host country• Each country is free to define its own rules	

① Additionality means that the project goes beyond the business as usual situation



How to determine emission reductions?

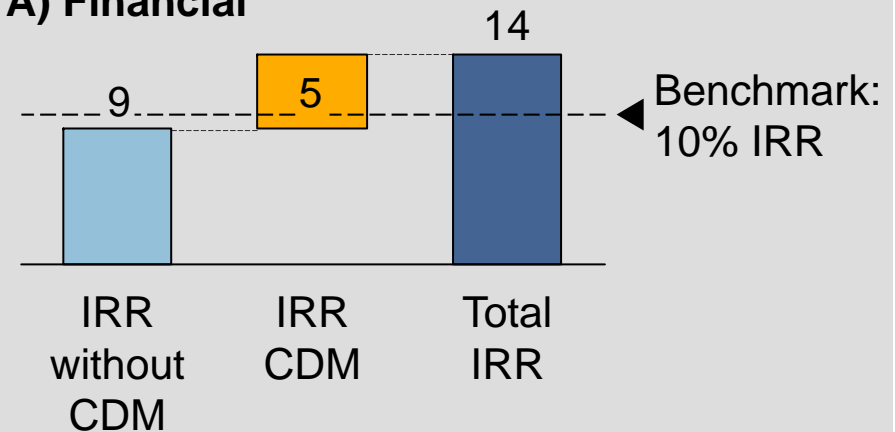
Emissions



- Therefore: not every activity that reduces emissions can qualify for the CDM
- **Only ADDITIONAL activities qualify for the CDM**

How to prove additionality?

A) Financial



B) Barrier



② A limited number of methodologies exist



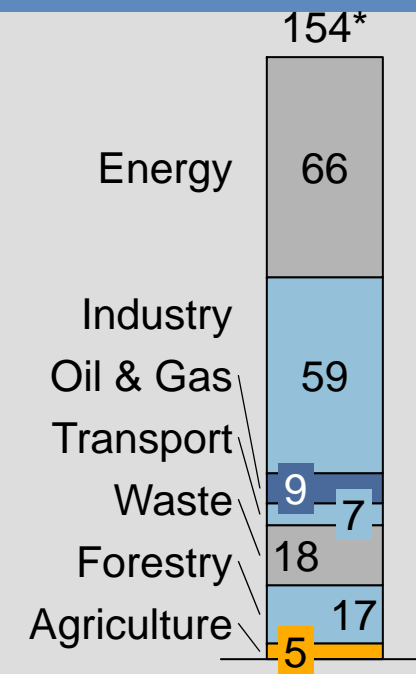
What is a Methodology?

- Document approved by the UNFCCC
- Important distinction:
 - **Small scale:** <60tCO₂e, <60GWhe, <180GWht, <15MW installed capacity
 - **Large scale:** no size limitations
- Contains:
 - Applicability criteria
 - How to calculate emission reductions
 - How to monitor emission reductions

How to develop a new Methodology?

- Everybody can propose a new methodology
- Existing methodologies can be revised
- Public good
- But: lengthy process (>1 year)
 - Costly specialists needed

How many methodologies exist?



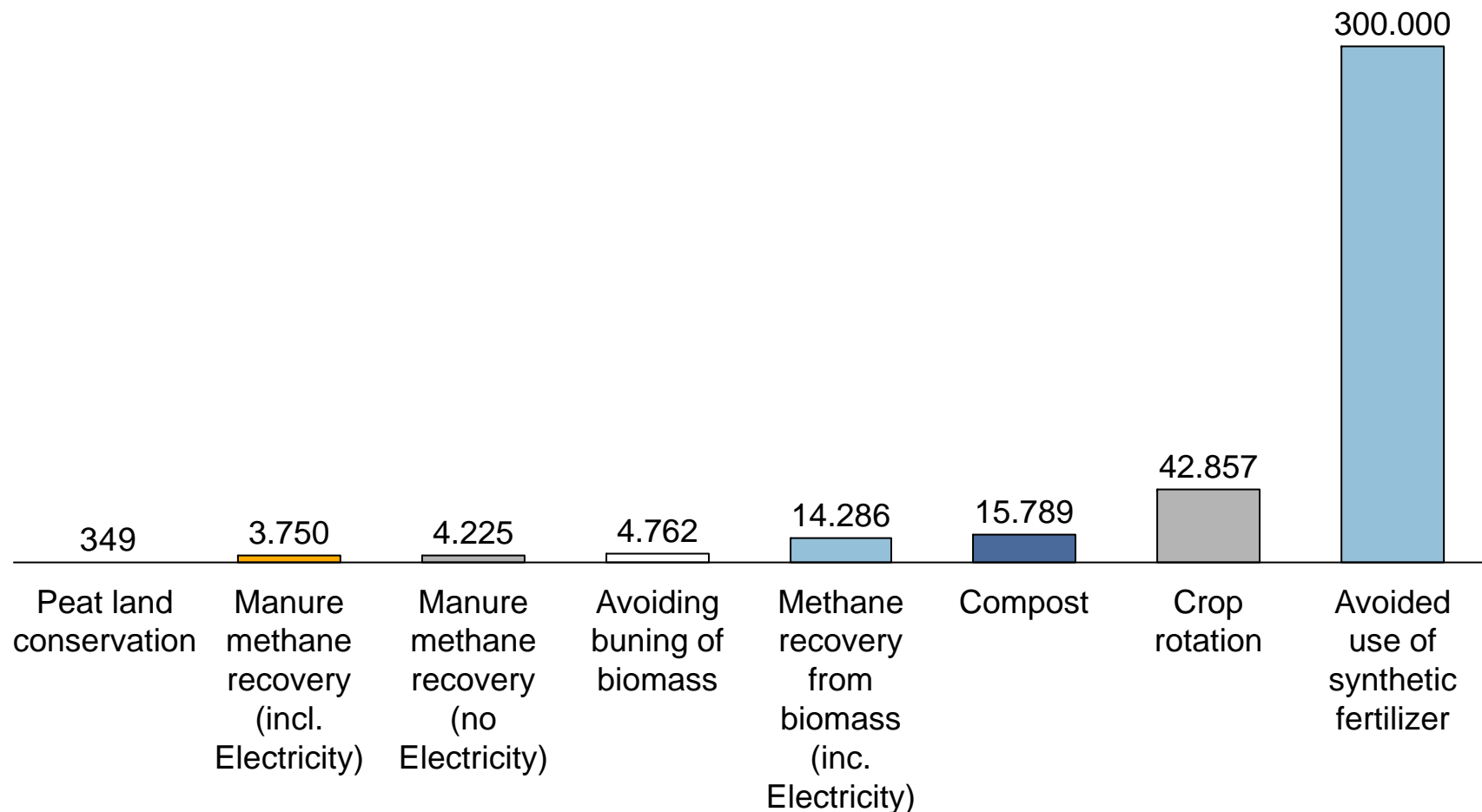
57 small scale methodologies
97 large scale methodologies

*some methodologies cover several sectors

③ Most agricultural projects need to be big to achieve critical size



Project size in ha to achieve 30'000t CO₂e/a

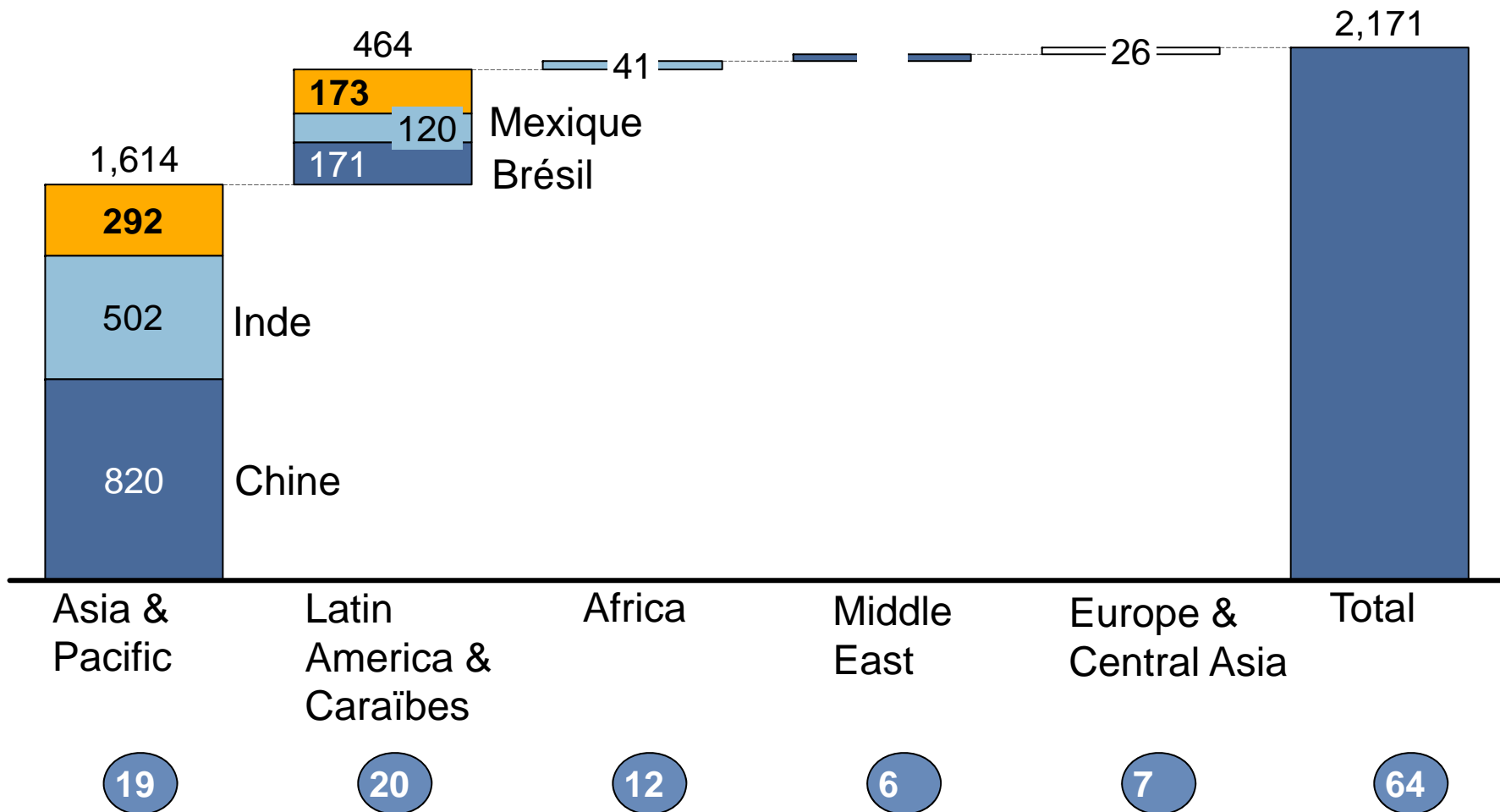


Source: Elaboration of new methodologies for organic farming greenhouse gases mitigation projects, South Pole 2010

Currently carbon credit projects are very concentrated in a few countries....



Number of registered CDM projects * (1 May 2010)



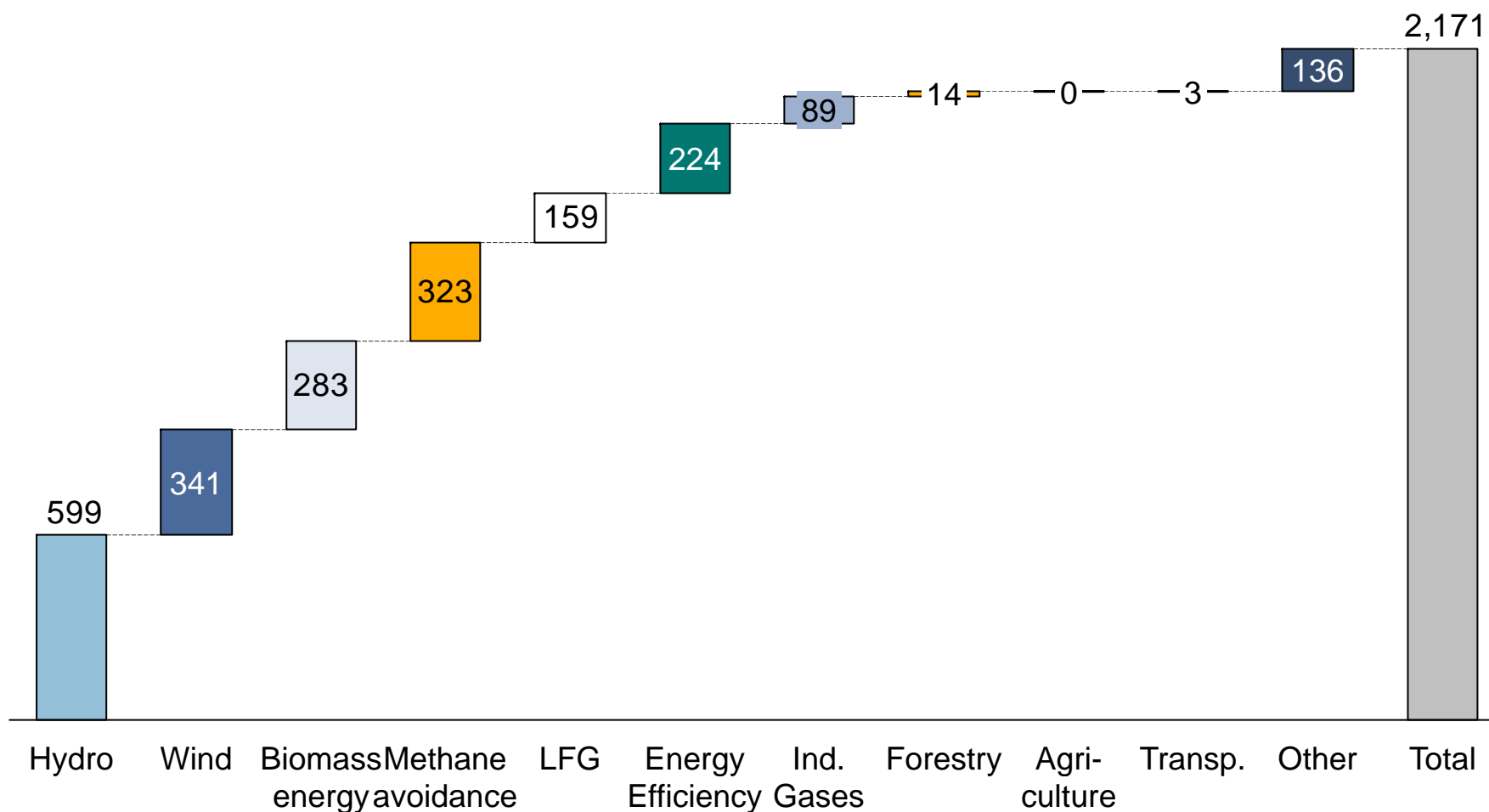
countries with registered CDM projects

Source: UNEP Risoe CDM pipeline, 01.05.2010 10

.... and only few project types



Number of CDM projects per sector* (Status 1 May 2010)



* Source: UNEP Risoe CDM pipeline, 01.05.2010



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- Carbon credits – the basics

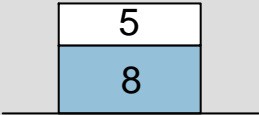
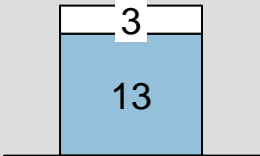
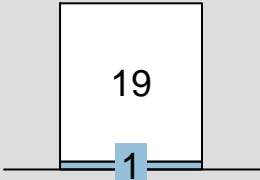


Institutional set-up & outlook

- A bit about South Pole
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There are three big carbon markets worldwide

	Characteristics	Carbon Credits	Current prices
Kyoto market 1	<ul style="list-style-type: none">• Scope: global• High liquidity• Credits close to commodities	<ul style="list-style-type: none">• AAUs• ERUs• GS CERs• CERs	 8-13 EUR
European market 2	<ul style="list-style-type: none">• Scope: regional (EU)• High liquidity• Credits close to commodities	<ul style="list-style-type: none">• EUAs• CERs• GS CERs	 13-16 EUR
Voluntary markets 3	<ul style="list-style-type: none">• Scope: global• Limited liquidity• Credits very diverse	<ul style="list-style-type: none">• VCUs• GS VERs• CCBS• CERs,...	 1-20 EUR

① The Kyoto Protocol limits GHG emissions of industrialized countries



Adopted in 1997 by the UNFCCC

Operationalized by the Marrakech Accords 2001

Entry into force in 2005 – expiry 31.12.2012

Objectives of the Kyoto Protocol

- Limit GHG emissions by industrialized countries by 5.2% between 2008 and 2012 (wrt 1990)
- No GHG emission limit for non-Annex I countries

3 flexibility mechanisms

1. Exchange of Allocations
2. Joint Implementation (JI)
- 3. Clean Development Mechanism (CDM)**

Governance

- Countries are free to ratify & leave (1 year notice)
- Difficult to enforce compliance (in theory: bigger ER in the future)

Site web: http://unfccc.int/kyoto_protocol/items/2830.php

① The Copenhagen conference was supposed to outline the successor treaty to Kyoto



Topic	Expected	Outcome	Evaluation
Common vision	<ul style="list-style-type: none"> • Long-term goal 	<ul style="list-style-type: none"> • Limit temperature increase to 2C 	✓
Emission targets	<ul style="list-style-type: none"> • Binding ET by industrialized and emerging countries 	<ul style="list-style-type: none"> • Unilateral pledges by industrialized and emerging countries 	?
Financing	<ul style="list-style-type: none"> • Substantial additional international funds for most vulnerable countries 	<ul style="list-style-type: none"> • 30 USD billion 2010-2012 • 100 USD billion p/a afterwards 	?
Reform of mechanisms	<ul style="list-style-type: none"> • Commitment to and mandate on how to improve effectiveness of market mechanisms 	<ul style="list-style-type: none"> • Pledge to include forestry & agriculture better • No commitment to continue with market mechanisms 	X
Successor treaty	<ul style="list-style-type: none"> • New international binding treaty signed 	<ul style="list-style-type: none"> • Political declation: Copenhagen Accord 	X

② The EU-ETS limits the emissions of the largest polluters in Europe



Principle:

- The biggest emitters of GHG received emissions quotas in 2005
- Currently > 10'000 installations representing roughly 50% of EU CO₂ emissions are covered

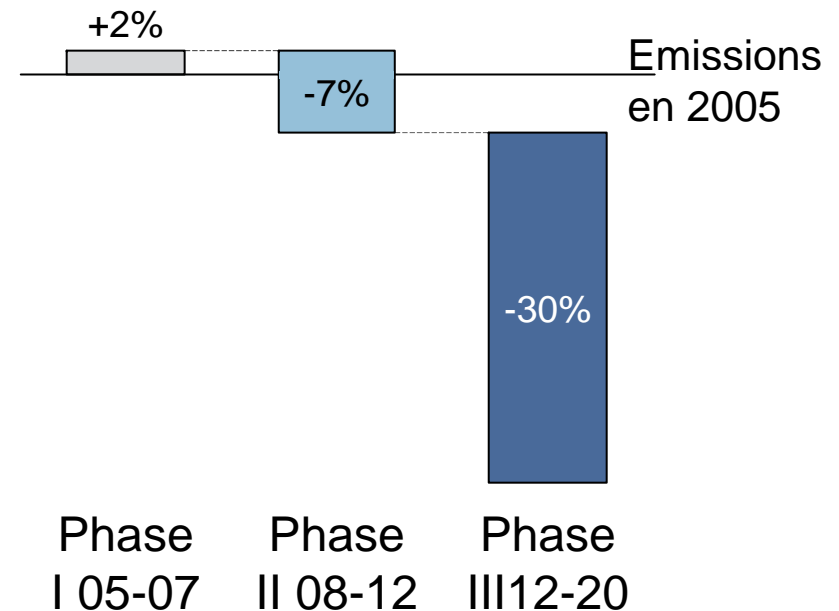
Operation

Installations which exceed their limits have to

- limit own emissions;
- buy allocations from other installations;
- buy CERs (limited to 10% in phase II);
- pay a fine: Phase II: 100 EUR;

Link between EU-ETS and KP

Targeted emission reductions with regards to 2005



Phase III ensures continuation of Emission Trading beyond 2012

② Several other countries are preparing domestic carbon markets, but all the eyes are on the US



- **Australia:** parliament rejected cap and trade system twice, now pushed back until 2013
- **Japan:** preparation of cap and trade system and carbon tax by new administration

- **United-States:** Regional system operational (RGGI), Federal bill to be introduced to Congress soon
- **Canada:** will match pledges by the US

Canada

- Emissions 1990: 592 Mt
- Emissions 2008: 747 Mt
- Change 90-08: +26%
- Kyoto objective: -6%
- Emissions/capita 08: 22 tCO₂

Japan

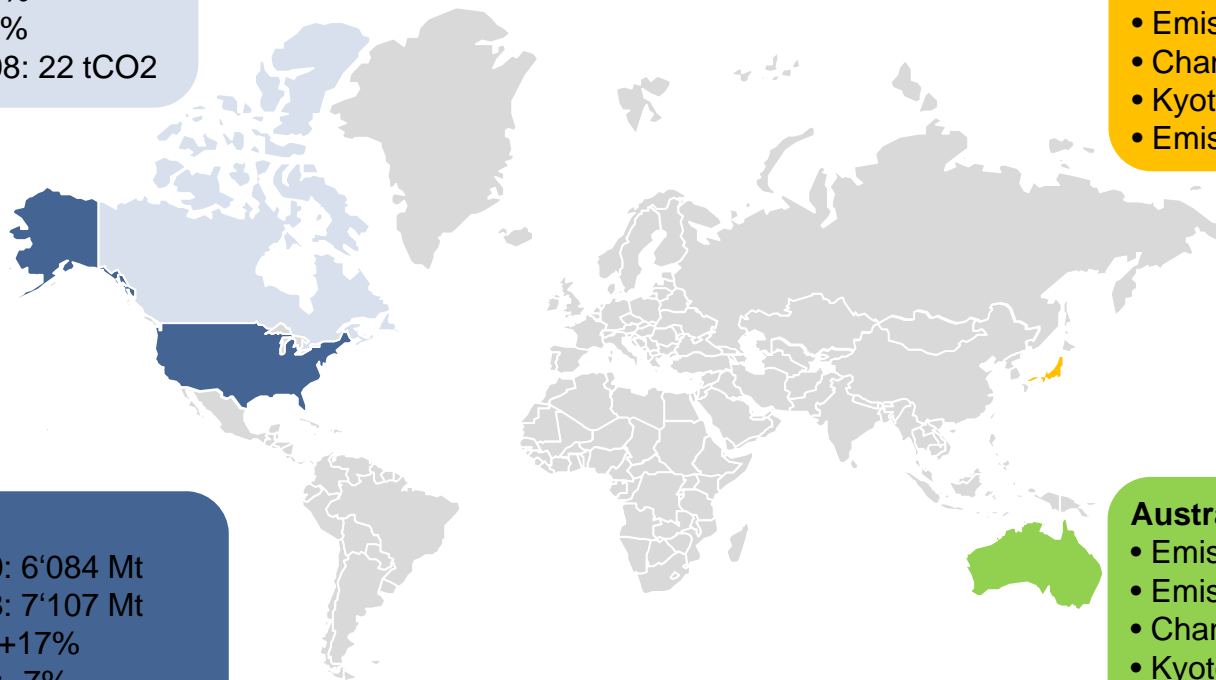
- Emissions 1990: 1'270 Mt
- Emissions 2008: 1'374 Mt
- Change 90-08: +8%
- Kyoto objective: -6%
- Emissions/capita 08: 11 tCO₂

United States

- Emissions 1990: 6'084 Mt
- Emissions 2008: 7'107 Mt
- Change 90-08: +17%
- Kyoto objective: -7%
- Emissions/capita 08: 23 tCO₂

Australia

- Emissions 1990: 416 Mt
- Emissions 2008: 541 Mt
- Change 90-08: +30%
- Kyoto objective: +8%
- Emissions/capita 08: 24 tCO₂



③ Many different voluntary standards exist, of which the most important are the Gold Standard...



Aims

Quality label which guarantees:

- Effective emission reductions
- Direct contributions to sustainable development

Founded by WWF & other NGOs

Requirements

- Increased **consultation of local stakeholders**
- Limited to **ER and EE project**
- Verification of **sustainable development indicators**

Characteristics

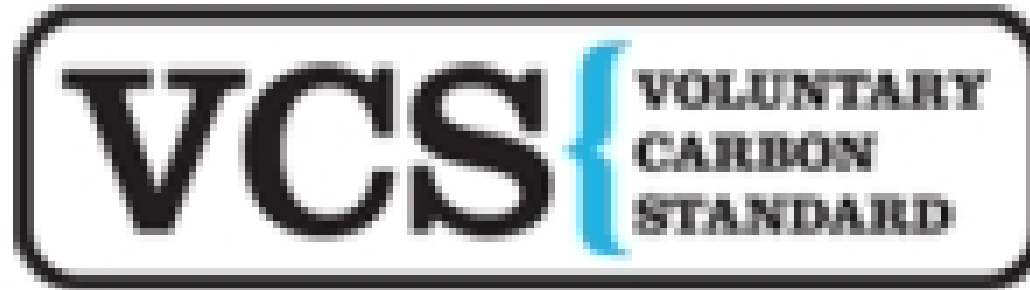
- Sell at **higher prices**
- **Greater post-2012 security**
- **Simplified approval procedure** for micro projects (ER<5000pa)

South Pole Specializes in Gold Standard projects

<http://www.cdmgoldstandard.org/>



... and the Voluntary Carbon Standard



Aims

- **Credible & pragmatic carbon credit standard**
- Guarantee environmental integrity of credits

=> **Largest voluntary standard**

Requirements

- No national approval procedure
- **Additionality** similar to CDM
- **Deforestation projects are eligible**

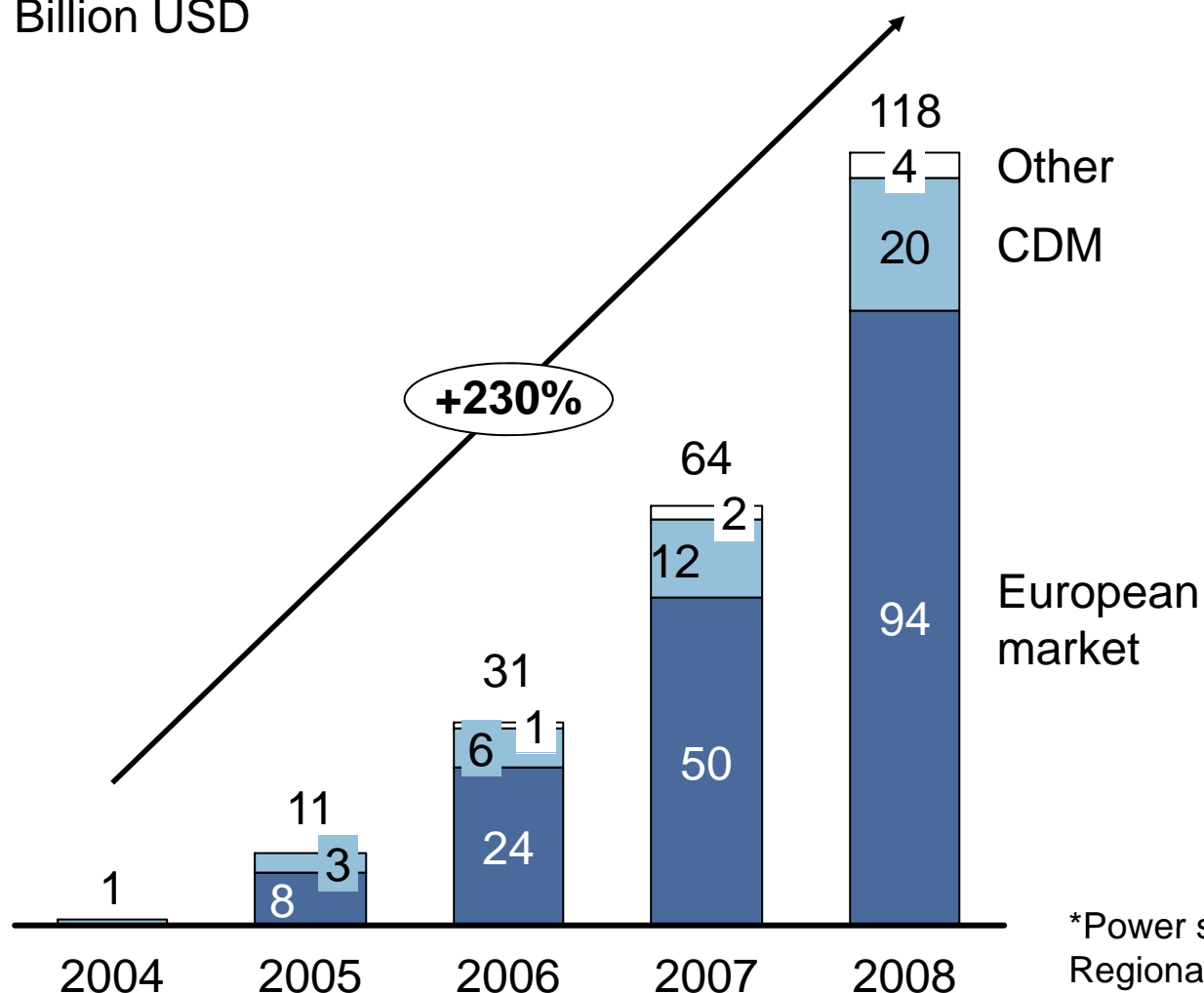
Characteristics

- **Widely traded** in voluntary markets
- **New approaches** for special project characteristics:
 - **Forestry**
 - **Agriculture**

Carbon transactions have surpassed USD100bn in 2008



Value of carbon transactions Billion USD



... and more markets to come in the future

- Compliance markets:
 - 2009: United States*
 - 2013: Australia, Canada, Japan, New Zealand
- Voluntary markets growing rapidly

*Power sector in 10 US States under the Regional Greenhouse Gas Initiative (RGGI)

Source: New Carbon Finance

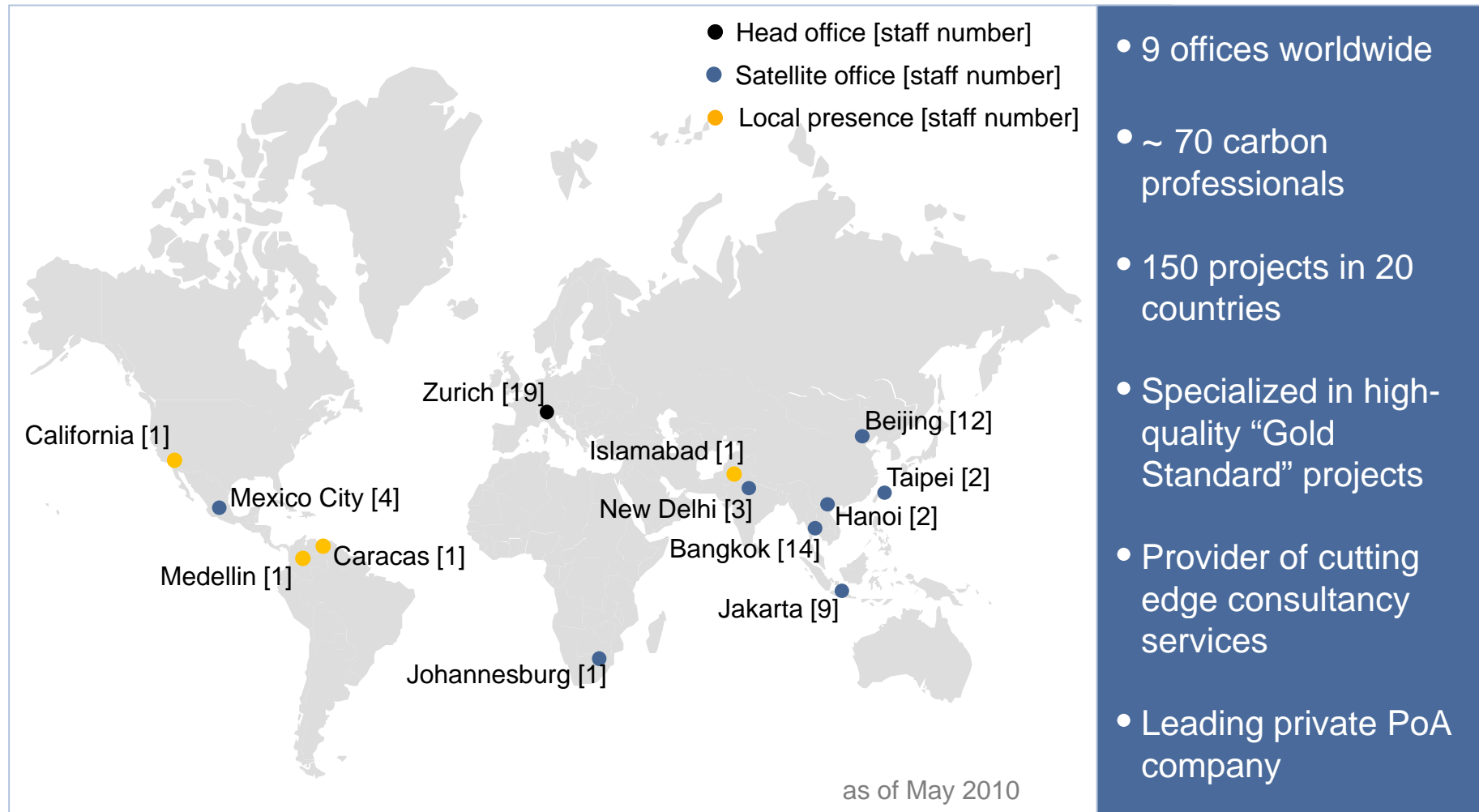


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- Carbon credits – the basics
 - Institutional set-up & outlook



A bit about South Pole

South Pole is one of the leading Carbon Asset Management providers



South Pole provides the whole range of carbon asset management solutions...



... and has been a trend setter in the carbon markets since its inception



Compliance Market

- **First international CERs transfer**
- First CER cancellation to offset emissions

Gold Standard



- **Largest portfolio worldwide of Gold Standard Certified Emission Reductions (CER) projects**
- One of the largest portfolios worldwide of Gold Standard Voluntary Emission Reductions (VERs)
- **First Gold Standard CERs brought to the market**

PoAs

- **Biggest private developer of Programmes of Activities (PoAs)**, a precursor towards sectoral mechanisms for reducing GHG emissions

Consulting

- **Tailor-made consultancy studies on a wide range of carbon related topics**



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Thank you for your attention!



South Pole references

Unparalleled carbon market expertise

- Participation in the UNFCCC Methodology Panel
- Involved in major climate change negotiations since 1997
- Carbon advisory to international organizations (World Bank, European Commission, World Economic Forum, GTZ, Africa Progress Panel, World Food Programme, ...) and to registered CDM projects with a volume of 100 million tCO₂e until 2012

Extensive client network

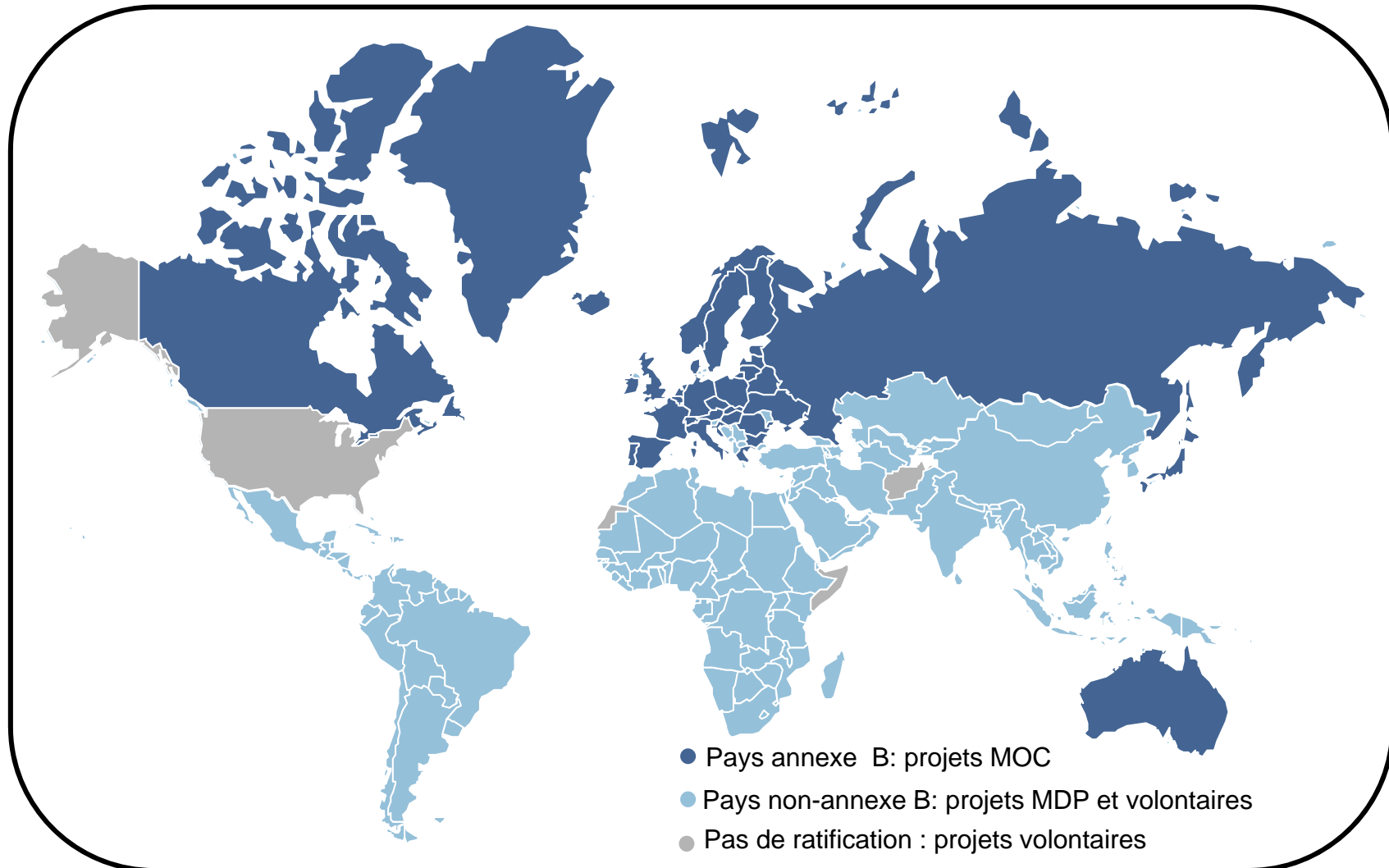
- Top-rated compliance buyers such as the Austrian Government, Swiss Government, Climate Cent Foundation (Switzerland), Italcementi Group, LUSO Carbon Fund (Portugal), EGL, ...



- Well-known voluntary buyers such as BP, Unilever, Axpo, Swiss Re, WWF, Austrian Post, Eneco Energy, RBC, Greenpeace, Ben & Jerry's, Transoflex, ...)



① The KP divides the world in 2 groups: Annex I and non-Annex I countries



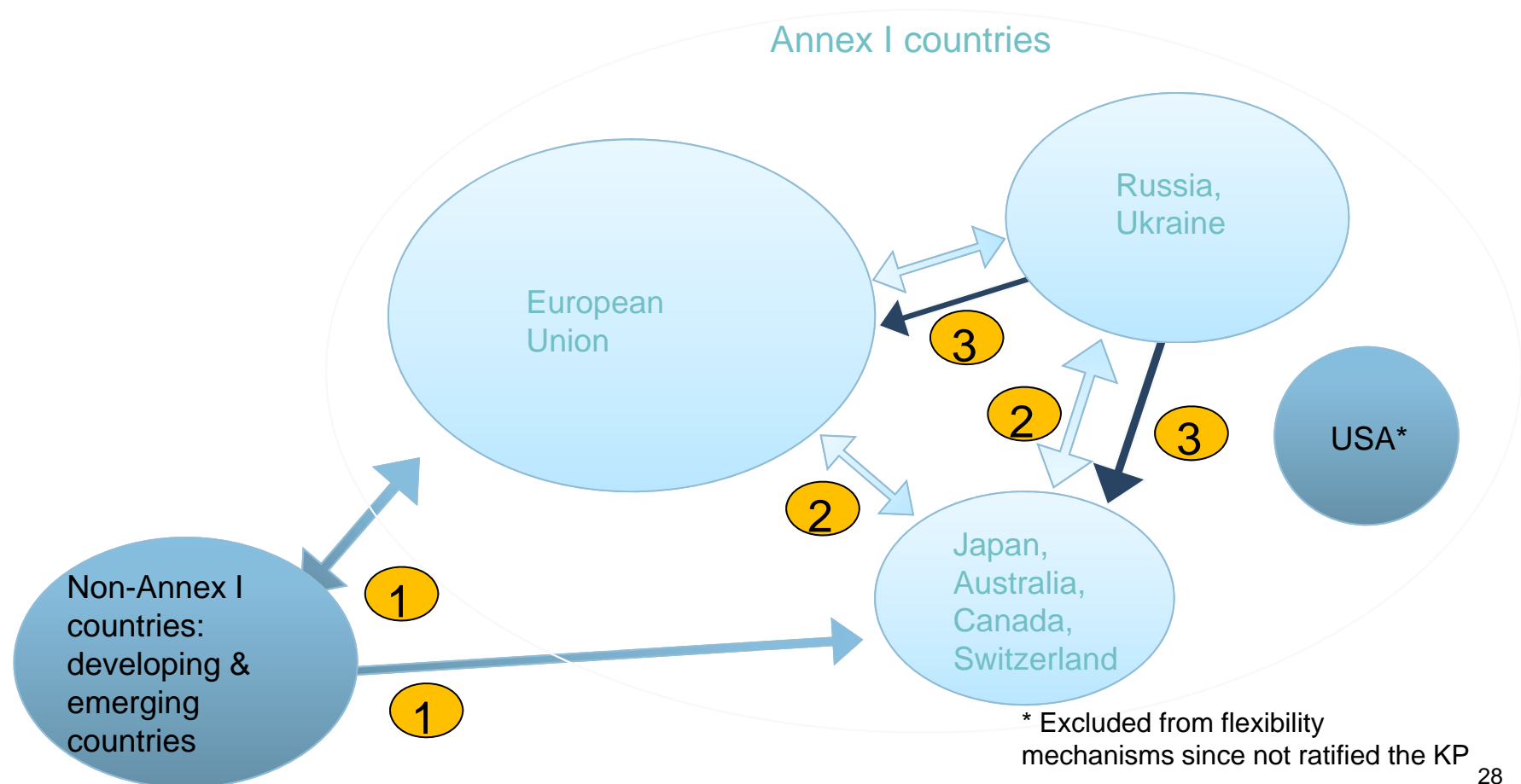
Source: UNFCCC, 14.01.2010

① The flexibility mechanisms of the KP



Flexibility mechanisms

- ① Clean development mechanism (CDM)
- ② Joint Implementation
- ③ Emissions Trading

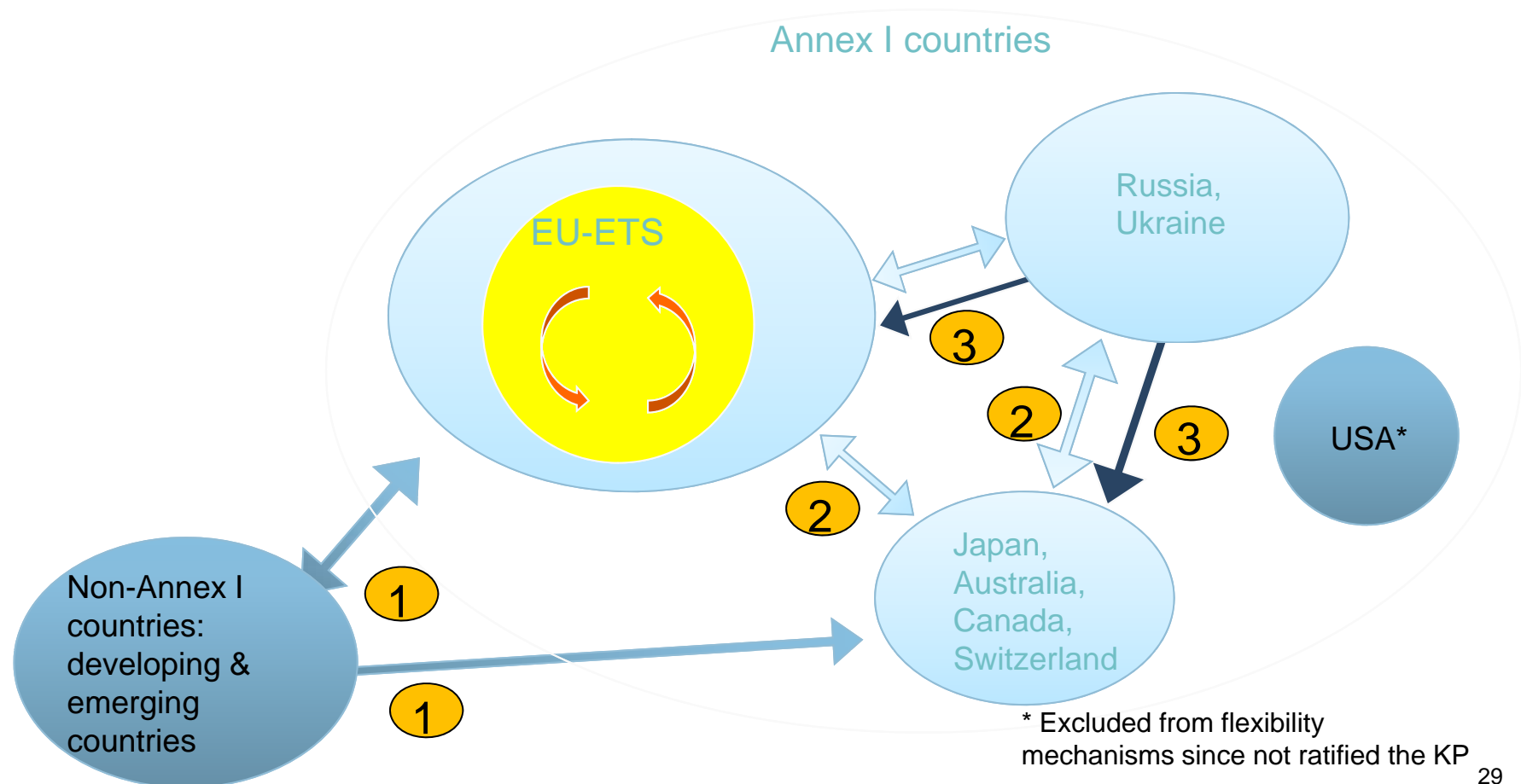


② Europe has a system of emissions trading (EU-Emission Trading Scheme)



Flexibility mechanisms

- ① Clean development mechanism (CDM)
- ② Joint Implementation
- ③ Emissions Trading



Global carbon market prices are driven by EU policy & economic fundamentals and have been very volatile



Example: EU ETS

Fundamental factors...

- **Regulatory issues** such as different allocation plans and publication of verified emission reports
- **Gas-coal spread** impacts the economic viability of a fuel switch which is one of the major emission reduction initiatives
- **Economic growth** increases demand for power and therefore increases emissions and demand for credits
- **Weather** impacts demand for power, and availability of renewable energy (e.g. hydro in dry conditions)
- **CDM / JI markets** impacts the supply of credits available

...and major events have driven volatility in carbon prices

EUA Prices
EUR / ton

