WORLD BANK GROUP
Climate Change

THE NETWORKED
CARBON MARKETS INITIATIVE

The Networked Carbon Markets Initiative

MARCH 2016

Agenda

Linking in a New Paris Regime	**3**

- Reviewing the Paris Agreement
- Evidence of heterogeneity in climate actions
- Opportunities for linking climate actions, particularly markets

How does the Networked Carbon Markets Initiative fit in?	**15**
Key components of the Networked Carbon Markets Initiative	**20**
Work plan for 2016	**26**

The Paris Agreement was reached in December 2015

Three key differences from the Kyoto Protocol

	KYOTO PROTOCOL	PARIS AGREEMENT
Who has to contribute to mitigation?	**Higher-income** countries (but US not a party)	**All countries** (according to principles of fairness) Voluntary cooperation is explicitly recognized.
How do countries cooperate to mitigate?	**Centrally-defined markets**, with mechanism for offsets from lower income countries (CDM)	Article 6 provides a **hook for existing and new markets** to link, with more or less light role for central body.
What happens if targets are not met?	**Penalty units** supposed to carry to future commitment. (Canada withdrew)	Reliance on **transparency for accountability**

Key articles in the Paris Agreement

- *Article 2*: Temperature goal
- *Article 4*: Stronger NDCs every five years
- *Article 6:* Voluntary Cooperative Approaches
- *Article 13*: Transparency framework
- *Article 14*: Stocktake every five years
- *Article 15*: Compliance committee

Article 6 of the Paris Agreement, can be seen to provide a hook for 'markets' and 'linking'

6.2-6.3
Cooperative approaches that involve the use of Internationally Transferred Mitigation Outcome (ITMO) towards Nationally Determined Contributions (NDCs)

6.4-6.7
Centralized approach that involve the use of the **Sustainable Development Mechanism (SDM)**

6.8-6.9
Framework for **non-market** approaches

4 Possible scenarios for 'markets' and 'linking' under Article 6 of the Paris Agreement

Scenario 1: Fully Decentralized

Each country can use any international units it choose for compliance without any global standards

Scenario 2: Semi Decentralized

Some minimal environmental standards provided by an international body as guidance only

Scenario 3: Semi Centralized

Environmental standards must be observed, but no approval required for units used for compliance. However peer review may be undertaken

Scenario 4: Fully Centralized

Global environmental standards are defined by an international body, and must be observed. The international body must approve the units used for compliance under the Paris Agreement

Positioning 'markets' and 'linking opportunities' within the Article 6 Scenarios

VOLUNTARY COOPERATIVE APPROACH

Scenario 2: ***Semi-decentralized***

- Countries may be required to follow guidelines provided by an international body but no approval is needed.
- This means that the domestic regulator decides for themselves the value of an imported unit towards complying with the country's NDCs.

Scenario 3: ***Semi-centralized***

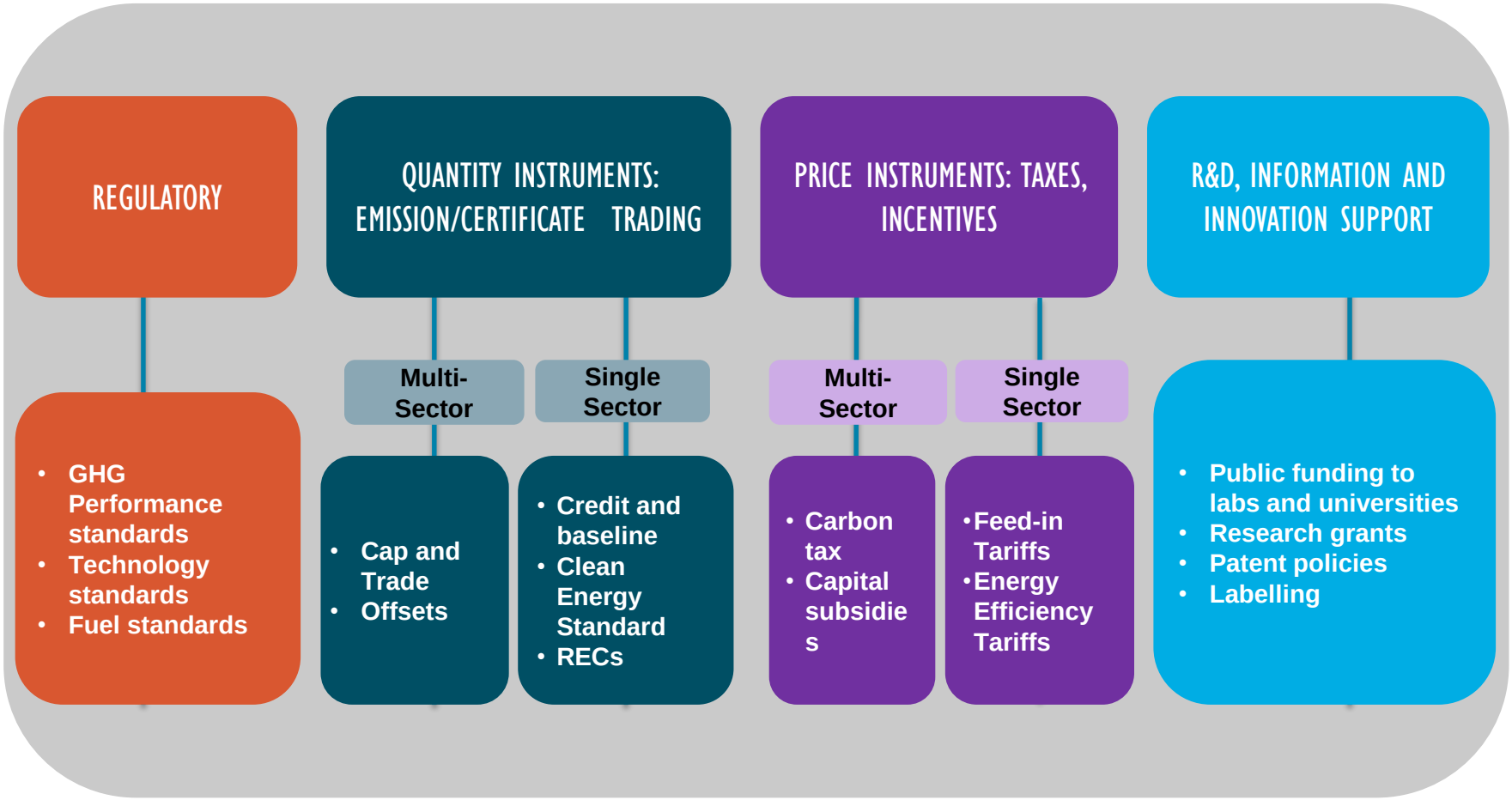
- The domestic regulator is able to determine the value of an imported unit towards NDC compliance and no international body approval is needed.
- However, it demands **more international transparency than scenario 2** of domestic climate actions so peer review type activities may be undertaken.

SUSTAINABLE DEVELOPMENT MECHANISM (SDM)

Scenario 4: ***Centralized governance***

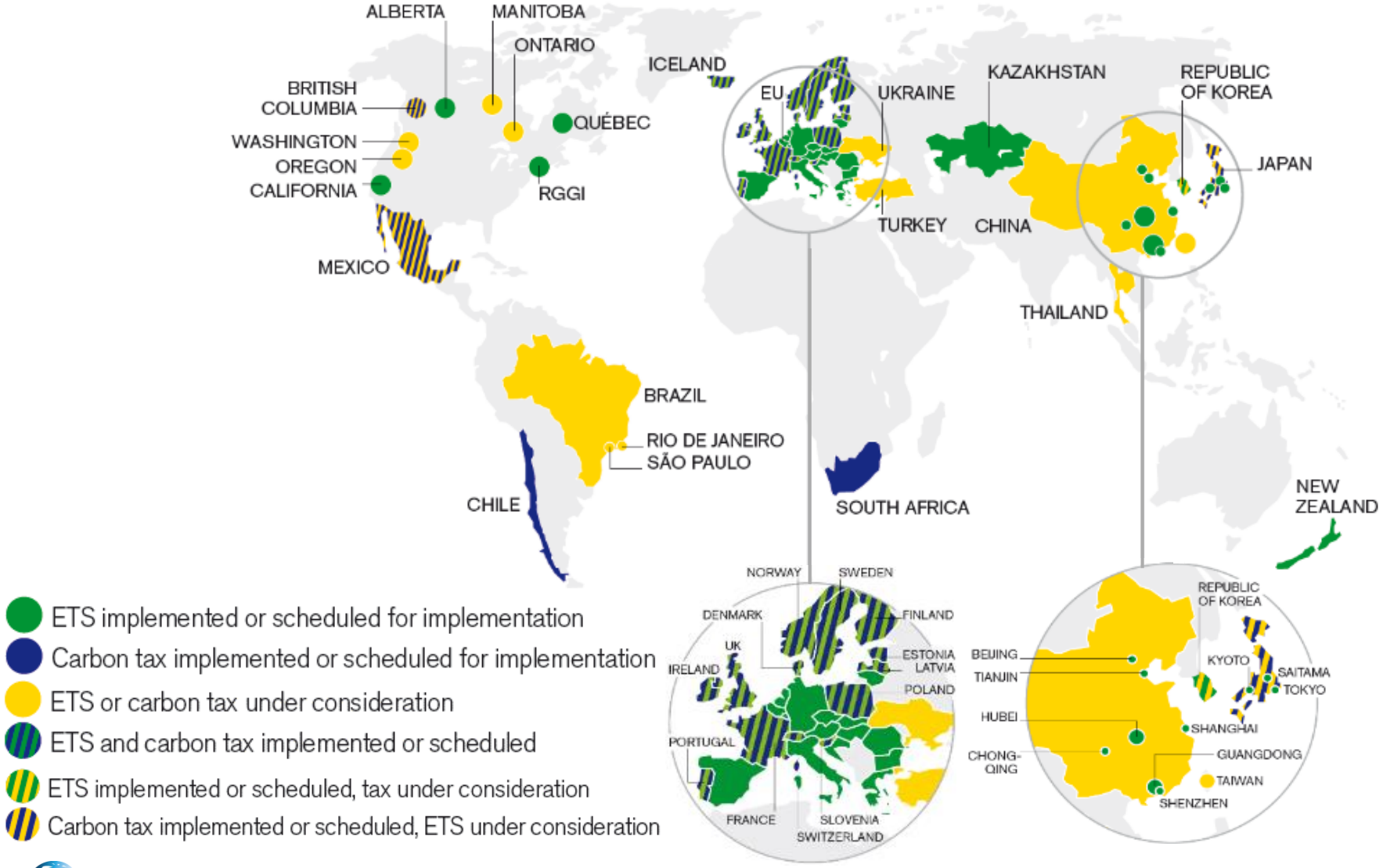
- Any international trading of climate actions towards NDCs **must be approved by an international body**.
- The centralized approach taken to use SDM seems to suggest that it would naturally fit in scenario 4.
- There are areas of uncertainty surrounding the use of SDM.
- Unclear what units will be accepted under the SDM.
- Unclear what countries can host or use SDM and how many mechanisms will operate under SDM.

Countries are designing and implementing a wide range of heterogeneous climate actions



EVIDENCE OF HETEROGENEITY

Of the mitigation actions that are under design and implementation, carbon pricing is proliferating



EVIDENCE OF HETEROGENEITY

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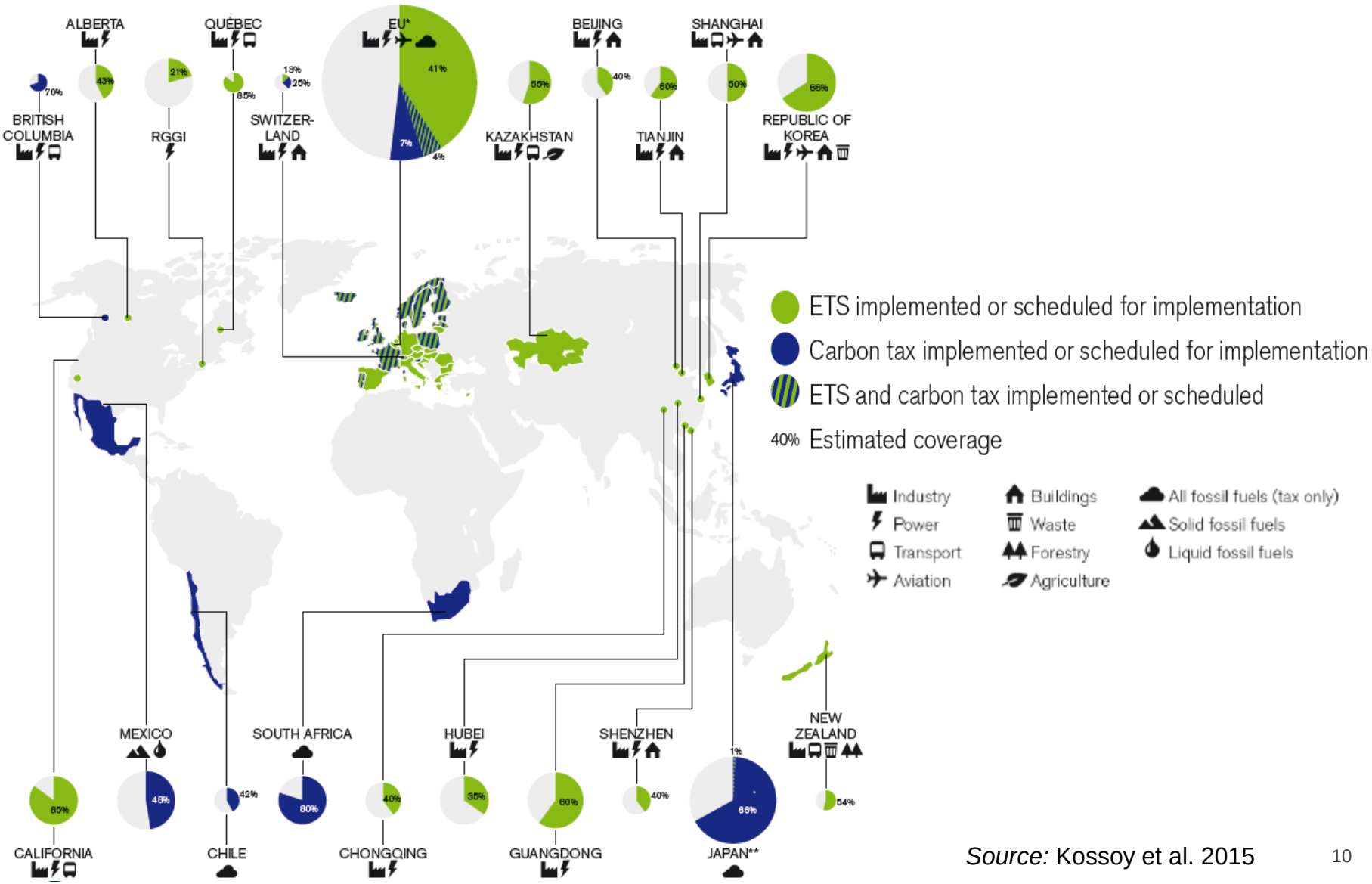
Source: Kossoy et al. 2015

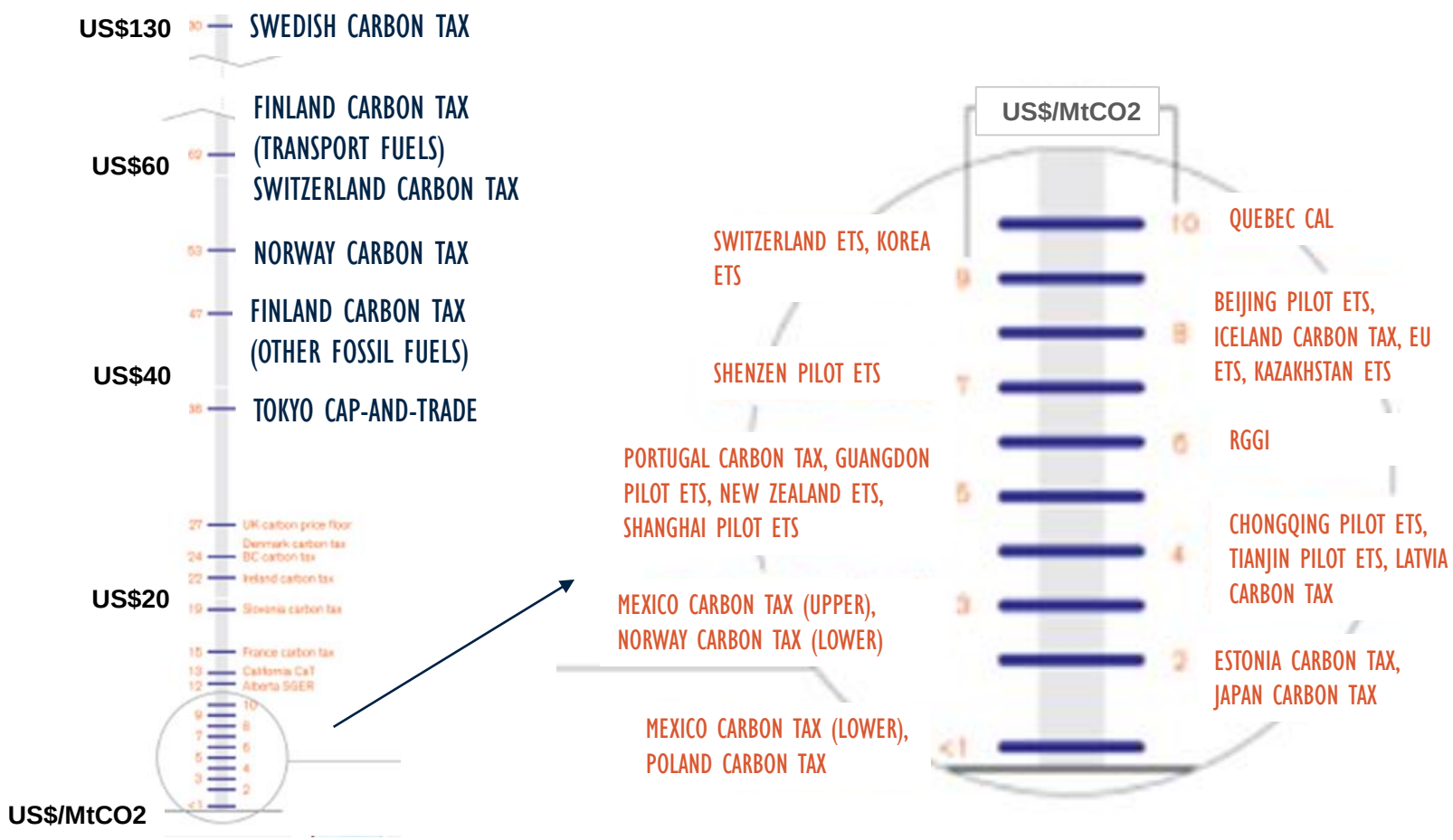
However, there is heterogeneity even within the spectrum of carbon pricing instruments



Source: Kossoy et al. 2015

EVIDENCE OF HETEROGENEITY

The heterogeneities that are already present, are evident in the price variability that already exists



EVIDENCE OF HETEROGENEITY

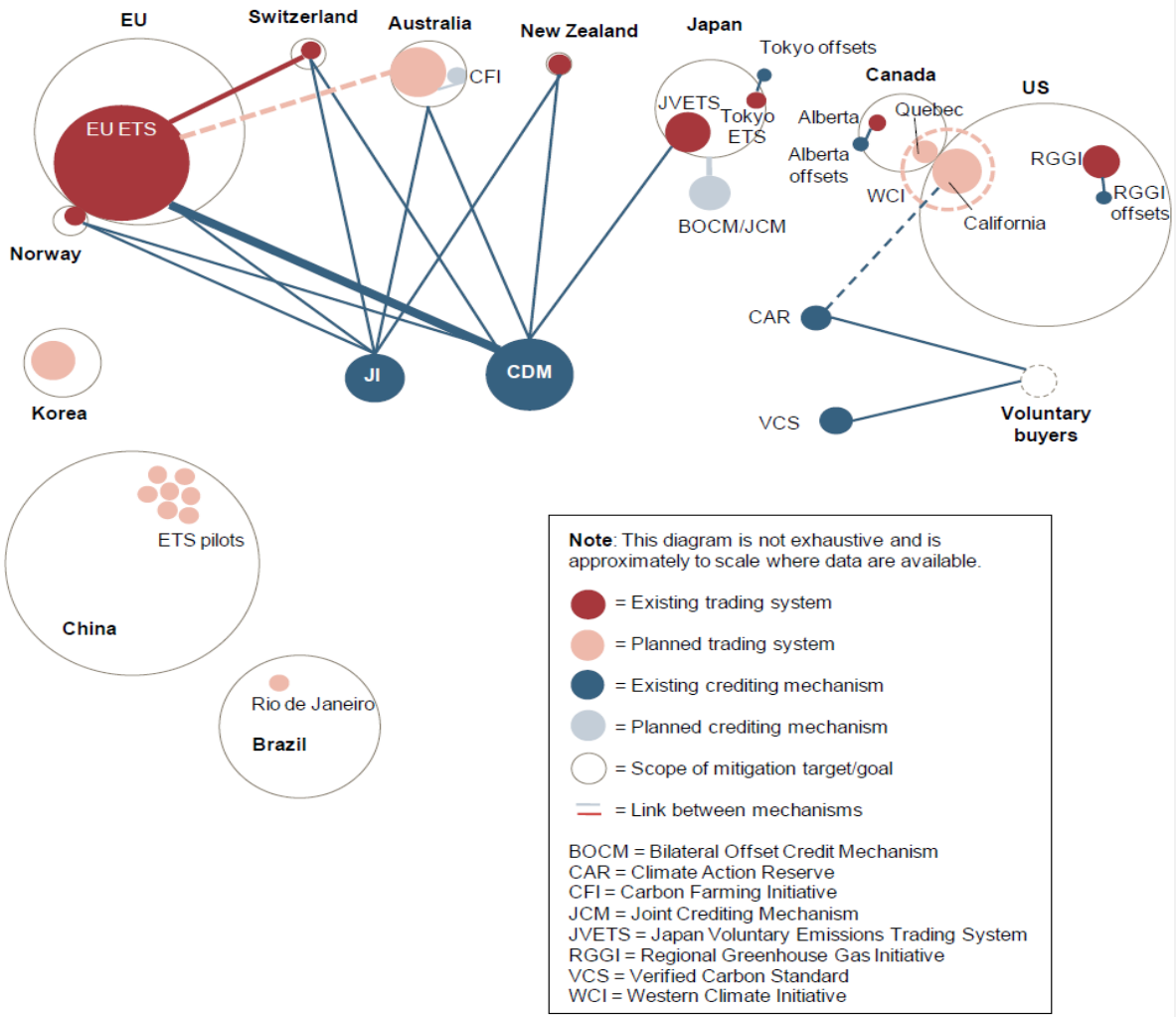
Source: World Bank Group (April 1, 2015)

Opportunities for linking heterogeneous climate actions

INTERNATIONALLY LINKED CARBON MARKETS

The Trend

- A bottom-up, rather than a top-down approach
- The bottom-up approach has dual drivers – climate change and other domestic priorities
- **Leading to heterogeneous and fragmented climate targets, programs, policies**



Source: Prag, Briner and Hood, 2012

Linking heterogeneous climate actions can be a challenge, but linking also brings many benefits

BENEFITS
Widely accepted **price on carbon**
Linked markets have greater **liquidity**
Effective and cost-efficient way to help achieve large-scale climate mitigation

CHALLENGES
How to allocate emissions targets to countries and time periods
Heterogeneity in design across carbon markets
Data challenges: baseline emissions, policy impact, performance of MRV system

Agenda

Linking in a New Paris Regime	**3**
How does the Networked Carbon Markets Initiative fit in?	**15**

- The WBG's long-term efforts to promote climate action
- Background of the Networked Carbon Markets Initiative
- Different forms of linking climate actions
- Underlying assumptions

Key components of the Networked Carbon Markets Initiative	**20**
Looking ahead	**26**

The WBG's long term efforts to promote climate actions, including carbon pricing mechanisms

PROMOTING THE CASE AND EVIDENCE BASE FOR CARBON PRICING

e.g., Carbon Pricing Leadership Coalition; State and Trends of Carbon Pricing reports

PLANNING, DESIGN AND PILOTS

Innovating and building readiness for climate action, including carbon pricing instruments

Partnership for Market Readiness; Pilot Auction Facility

IMPLEMENTATION AND SCALE-UP

Enabling scale-up of climate actions such as carbon pricing mechanisms

Carbon Partnership Facility; Pilot Auction Facility, Partnership for Market Readiness; TCAF

CONNECTIVITY AND GLOBAL TRADE

Enabling connectivity of all types of climate actions, including carbon pricing mechanisms, through internationally connected carbon markets

Networked Carbon Markets Initiative

Underlying assumptions of the Networked Carbon Markets (NCM) Initiative

A linked international carbon market is ***desirable***

Governments and market participants need ***information*** about the schemes that they link with and the carbon assets that are imported

Governments should have the ***sovereignty*** to act responsibly on the information about the schemes that they link with and the carbon assets that are imported

The NCM Initiative

NEED	The NCM Initiative responds to the **need for reliable and well-synthesized information on the relative value of different climate mitigation efforts**, given the increasing regulatory fragmentation and heterogeneity that is emerging across and within jurisdictions.
ACTIVITIES	Through the NCM, the World Bank Group is convening stakeholders to **develop a framework for assessing climate mitigation efforts and infrastructure** to support carbon market related functions.
	The NCM Initiative **complements the World Bank Group's ongoing low-carbon development activities** and its efforts to promote carbon markets as critical to achieving climate mitigation at large scale in an effective and cost-efficient way.
	To date, the concept has been **informed by technical and analytical work** as well as the World Bank Group's extensive consultations with private and industry associations, developed and developing country governments, think-tanks and academia, NGOs and multilaterals.
END-GOAL	The **end-goal is to facilitate linking or "networking" of heterogeneous carbon markets,** so that the linked markets will have greater liquidity and deliver climate-smart financing more efficiently.

Different forms of linking climate actions

FORM OF LINKING	DEFINITION
Full	Compliance unit in one jurisdiction is accepted without restriction in the “linked” jurisdiction
Limited	Compliance unit in one jurisdiction is accepted with qualitative/quantitative restrictions in the “linked” jurisdiction
Indirect	Markets are not linked directly, but have access to the same third carbon market.
Networking	Fungibility of carbon assets across schemes facilitated by risk-based assessment and discounting.

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- Independent assessment framework, International Carbon Asset Reserve, and International Settlement Platform
- Objectives of the independent assessment framework
- Valuing a carbon asset

Looking ahead	**26**

Key components of the NCM Initiative

1. **Independent assessment framework** to determine the **climate change mitigation value** of different climate actions and enable their fungibility in the international market.

2. **International Carbon Asset Reserve** to support and facilitate carbon market related functions.

3. **International Settlement Platform** to track cross-border trades and possible clearing house function.

Objectives of the Independent Assessment Framework

Develop a MECHANISM FOR COMPREHENSIVE ASSESSMENT of GHG mitigation actions

Establish a common framework to SCREEN, EVALUATE AND COMPARE different mitigation actions

Provide CONFIDENCE TO DONORS/INVESTORS on viability and level of risk of different mitigation actions

FACILITATE BENCHMARKING and IDENTIFY AREAS FOR continuous IMPROVEMENT

Three ways to value a carbon asset

COMPLIANCE VALUE — **Domestic regulator**

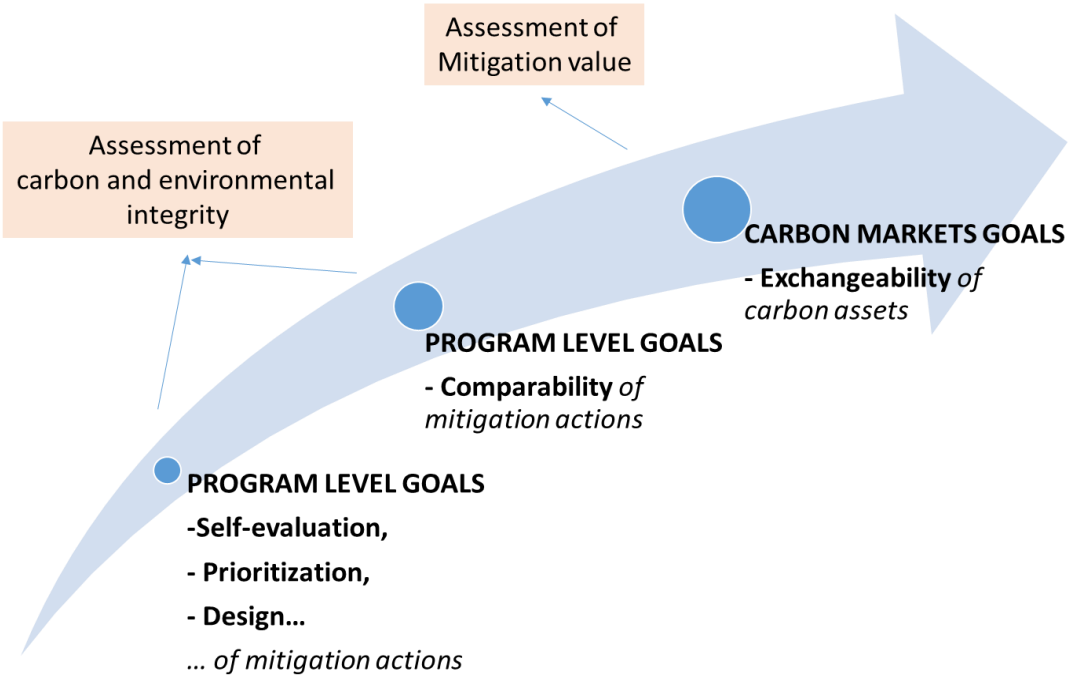
FINANCIAL VALUE — **Market participants**

MITIGATION VALUE

- ✓ Suitably qualified **analysts**
- ✓ Access to relevant **information**
- ✓ Neutral **assessments**

Example: Assessing the Mitigation Value of a crediting program with the NCM Initiative's Mitigation Action Assessment Protocol

- The Mitigation Action Assessment Protocol (MAAP) is a **program level rating of climate actions**.
- It could serve as a **key tool for achieving transparency** in the design of climate actions, how they compare and what their mitigation value is.
- In the long run, the MAAP is intended to **contribute to achieving the goal of an internationally accepted system for comparing carbon assets** and eventually, trade and exchangeability of carbon credits.
- THE MAAP HAS BEEN PILOTED IN THAILAND (Feb 2016) AND PERU (Oct 2015).



International Carbon Asset Reserve (ICAR) & International Settlement Platform

- An ICAR could provide functions that help manage certain market risks and market failures, in conjunction with jurisdiction-level mechanisms:
  - Provide a source of liquidity;
  - Provide a back-up for domestic reserves;
  - Provide a market maker function.

- The international settlement platform would need to be linked to the scheme registries of the participating jurisdictions.
- The settlement platform could either incorporate or be linked to a central registry tracking the movement of carbon assets between jurisdictions
- A central registry could also facilitate an audit mechanism for crosschecking the individual scheme registry holdings.

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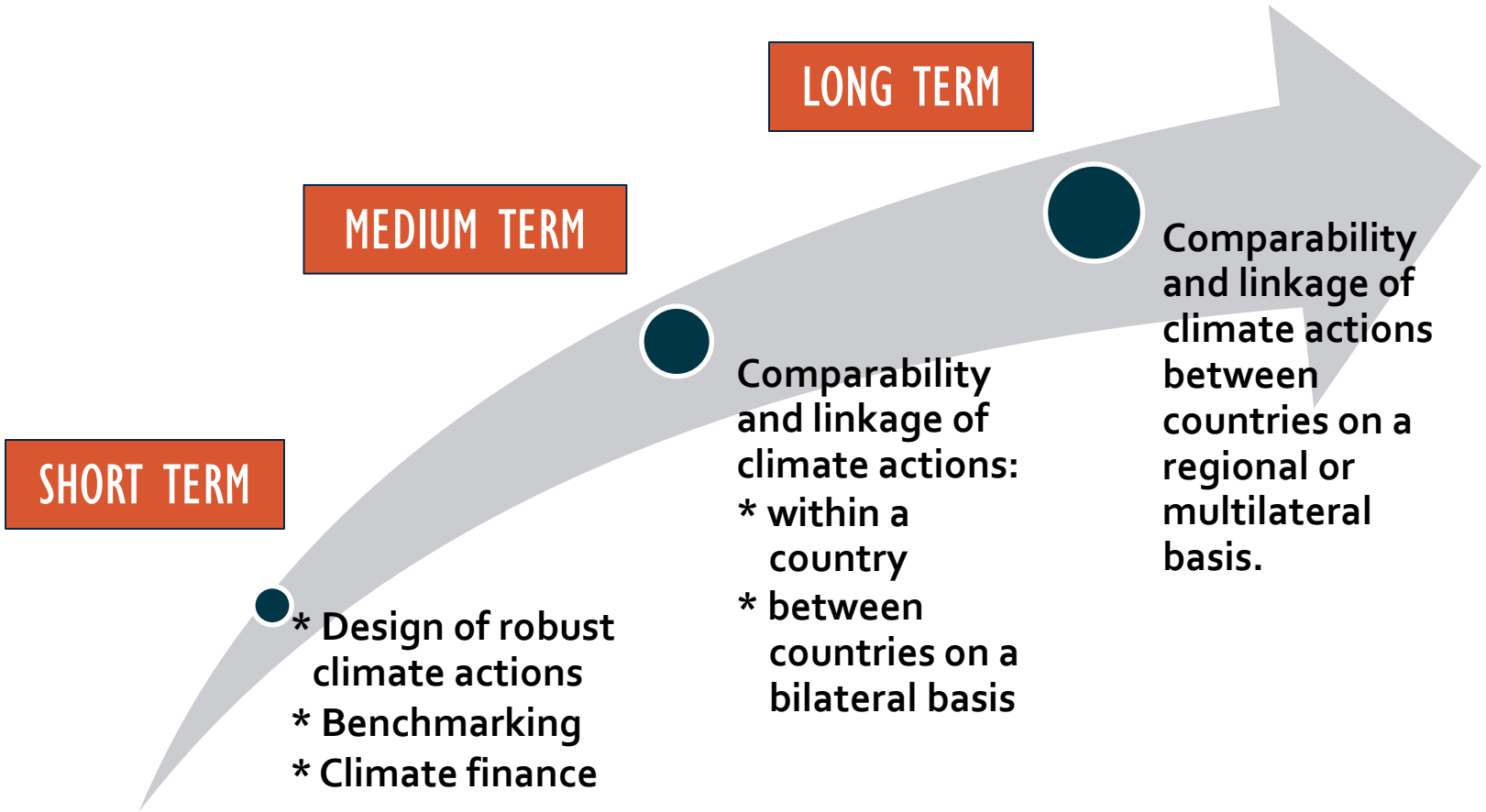
- NCM's vision and 2016 work plan and timeline
- Country engagement: Peru, Thailand, China
- Data analysis and modelling
- Concept Development

The NCM Initiative's short, medium and long term vision

The NCM initiative seeks to facilitate transparency & linkage in the short, medium & long term



The NCM Initiative's Work plan to end of FY 16

Industry & NCM Events

Feb:
- **MAAP Workshop, Stakeholder consultations, verifiers meeting,** *Thailand*
- **Climate Transparency workshop,** *Berlin*

April: Multi-stakeholder workshop, *Japan*

January 2016 → **July 2016**

Jan: CMIA industry outreach event, *London*

Mar: Carbon pricing workshop, *Zurich*

May:
- **Asia Pacific Roundtable discussion**
- **Carbon Expo,** *Cologne*

Work Program

COUNTRY FOCUS
- ***Peru, Thailand***: Pilot the **MAAP**
- ***Sri Lanka and Costa Rica***: Explore new opportunities to pilot the MAAP.
- ***China***: Stakeholder consultations, research paper and Linking Workshop together g with Tsinghua University, Beijing Environment Exchange, University of Edinburgh

DATA ANALYSIS & MODELLING
- Through 'Climate Transparency', progress a **composite index to assess and track mitigation** contributions
- Data collection to inform **independent assessment framework**
- **Modelling of trade flows** to inform preparations for Linking Simulation in Dec 2016

CONCEPT DEVELOPMENT
- Continue to **collaborate** with think tanks, NGOs, private sector, Governments **to develop Independent Assessment Framework**.
- **Blueprints for ICAR** and **international settlement platform** to support linked carbon markets. (INFRAS, Grantham Research Institute)

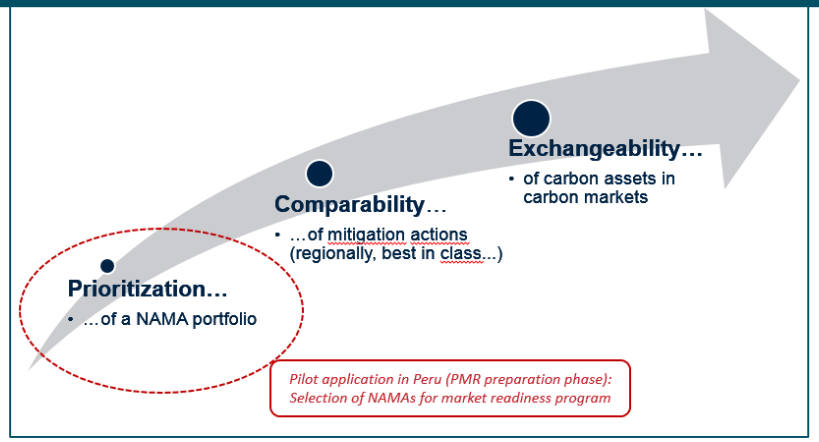
WORK PLAN FOR THE NCM INITIATIVE

Prioritizing Mitigation Actions in Peru

OVERVIEW

- Applied in Peru and used to **prioritize mitigation actions** for its PMR proposal.
- Mitigation actions chosen: NAMA Waste, NAMA Cement, and Mitigation Measure of photovoltaic distributed generation.
- The participatory nature of the assessment proved useful to identify areas of improvement.
- The framework was established with a view to be one of the mainstays of a future Mitigation Action Registry in Peru.

APPLICATION AS A NAMA SCREENING TOOL



THE PROCESS OF SCREENING MITIGATION ACTIONS IN PERU

Shortlisting of 80+ mitigation actions

↓

Customization of MAAP by protocol developers & national experts

↓

Ex ante assessment of 10 prioritized mitigation actions

↓

Selection of 3 mitigation actions for support under the Partnership for Market Readiness: NAMA Waste, NAMA Cement, and Mitigation Measure of PV distributed generation

WORK PLAN FOR THE NCM INITIATIVE

Applying the MAAP to low-carbon city programs in Thailand

NCM ACTIVITIES

- The NCM Initiative, in partnership with Wageningen University, sent practitioners on **field visits to the municipalities of Phitsanulok and Pak Kret** to apply MAAP to low-carbon cities programs.
- The MAAP, as well as the findings of the field visits, were presented at **a workshop in Bangkok** organized in collaboration **with the Thai Greenhouse Gas Management Organization.**

Scoping Studies on linking in China

BACKGROUND OF CARBON MARKETS IN CHINA

7 Pilot ETSs (2013-2015/6)

Varying levels of economic development in participating regions

Local governments given significant flexibility in designing pilot ETSs

Resulted in ETSs with fairly heterogeneous structures

National ETS Phase 1 (2017-2020)

The first phase will focus on refining the national carbon market framework

National ETS Phase 2 (post-2020)

China will start to explore international linkage opportunities

NCM ACTIVITIES

- A scoping study in China will be led by Tsinghua University, University of Edinburgh, and the China Beijing Environment Exchange (CBEEX) to explore opportunities for the NCM Initiative to support China's international linkage efforts
- The study will conduct stakeholder outreach to explore opportunities for the NCM Initiative to support China's international linking efforts and identify potential for conducting regional pilots

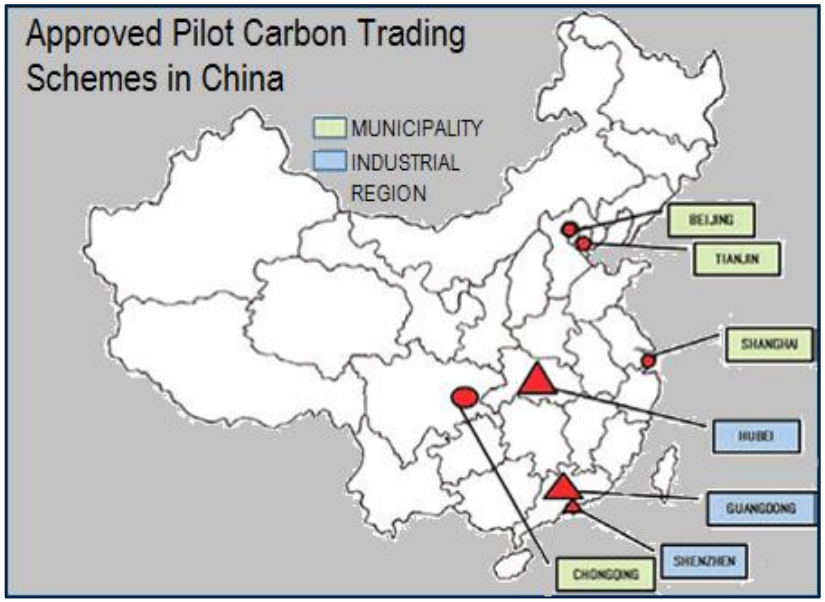


Image source: SEI (2012)

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Data analysis and modelling: Through the Climate Transparency consortium

Climate Transparency is a consortium of Climate Action Indices

Partnering Climate Action Indices:

- Carbon Transparency Index
- CLIMATE ACTION TRACKER
- CLIMATE CHANGE PERFORMANCE index 2014
- Environmental Performance Index

Supporting Organizations:

- CLIMATE ANALYTICS
- ClimateWorks
- ECOFYS
- GERMANWATCH
- NEW CLIMATE INSTITUTE
- PIK
- WORLD RESOURCES INSTITUTE
- Yale University

Secretariat

- HUMBOLDT-VIADRINA Governance Platform

Data analysis and modelling: Through the Climate Transparency consortium

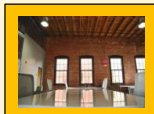
MISSION

Enhance transparency, comparability and ambition through climate action indices

STRATEGIC PILLARS

Better Quality:

Higher Demand:



Stronger Legitimacy:

WORK-STREAM

G20 Climate Performance

Climate finance and adaption assessment

Connecting to financial market systems

Global Outreach

WORKPACKAGES

- Produce map of indices
- Bring together a consortium of indices
- Explore possibilities for composite score
- Develop outline of joint product
- Joint communication before the G20 meeting

- Establish overview of initiatives covering adaptation and finance
- Conduct technical workshop to structure existing efforts
- Explore integration of indices for mitigation, adaptation and finance into G20 Climate Performance

- Reach out to major stakeholders from financial market to assess their needs (e.g. credit rating agencies)
- Identify potential climate related products
- Explore potential connections between carbon markets and credit rating

- Identify key climate relevant contacts in governments of G20 countries
- Build network of contacts
- Create communication strategy
- Built online platform for Climate Transparency
- Presence at the Carbon expo 2015

Data analysis and modelling

Timeline of Modelling and Simulation exercises

PHASE	DESCRIPTION OF ACTIVITY	PURPOSE/OBJECTIVE	OUTCOMES/DELIVERABLES
I	• Basic **initial modelling of transaction scenarios**	• Design testing • Research specific ideas	• Devise and run modelling • Formulate and test trading rules • Report outcomes
II	• **Run and re-run transaction scenarios** modelling with rules and MV assessment process and various exchange rate setting processes • **Devise business process flow** for trading ensuring market integrity	• Design testing • Research specific ideas	• Formulate trading rules • Run modelling • Report outcomes
III	• Simulation exercise, possibly **involving jurisdictions and actual market participants** and trading entities	• Design testing • Research specific ideas • **Outreach and stakeholder engagement** involving credit rating agencies and market participants	• Test rules with multiple runs • Report outcomes • Stakeholders are engaged in the simulation process

Source: Macinante, Working paper.

To progress its key components and concept development, the NCM initiative is collaborating with a wide range of partners

Private sector outreach

Partners: Climate Markets and Investment Association (CMIA).

Institutions (ICAR and International Settlement Platform)

Partners: INFRAS, Grantham Institute, Reed Smith

MAAP pilots

Partners: DNVGL, Thai Greenhouse Gas Office, Ministry of Environment of Peru, Wageningen University

Independent Assessment Framework

Partners: DNV, IISD, New Climate Institute, Climate Transparency, Observer to ISO Climate Change Standards Committee

NETWORKED CARBON MARKETS – PARTNERS

Concept Development

Partners:

* 'NCM and its compatibility with a future UNFCCC regime' (Marcu)
* 'Comparison and Linkage of Climate Mitigation Efforts in a New Paris Regime' (Harvard/IETA)
* Achieving compatibility and synergy between the NCM Initiative and Climate Clubs (Climate Strategies)
* 'A model for NCM based on the key elements and principles of Comparative Markets' (Macinante)
* 'Options for Operationalizing a Carbon Trading Ratio Mechanism' (Austin)
* 'Enabling Comparability of heterogeneous Emissions Trading Systems – Caps, MRV frameworks and non-compliance penalties' (Munnings)
* Initial modelling of Transaction Scenarios (Enerdata)

Concept Development through knowledge products and outreach

In 2015,
10 events
including a **roadshow** on 3 continents and **side-events** at international climate conferences

Collaborating with more than
30 organizations to deliver knowledge products

WORK PLAN FOR THE NCM INITIATIVE