CER SALES OPPORTUNITIES AND CHALLENGES IN NON-EU MARKET: project developer’s perspective

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Carbon Market Context
CER* Sale Strategy
Project Developer’s Perspective
Case Study in Mongolia for Pre & Post 2012 projects:
  Salkhit Wind Farm Project
  Asia Super Grid
EU market
Non-EU and New Emerging Markets
Voluntary Market
New Market Mechanisms and
Joint Crediting Mechanism (JCM)
Options for post-2012 projects from
developing countries
Summary: opportunities, challenges & way forward

*CER – Certified Emission Reduction
CARBON MARKET CONTEXT

- Over 70% of investments in CDM are concentrated in China (51%), India (18%) and Brazil (4%).
- Most of the countries who benefited from CDM are on way to establish domestic Emission Trading Schemes (ETSs) or carbon pricing mechanisms.
- Support to Least Developed Countries (LDCs) through access to EU ETS.
- Asia and the Pacific represents half of countries with low level of project development.

<table>
<thead>
<tr>
<th>Parties to the KP with:</th>
<th>Africa</th>
<th>Asia &amp; the Pacific</th>
<th>LA &amp; Caribbean</th>
<th>Eastern Europe</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 CDM projects</td>
<td>13</td>
<td>15</td>
<td>5</td>
<td>9</td>
<td>42</td>
</tr>
<tr>
<td>No projects</td>
<td>23</td>
<td>11</td>
<td>8</td>
<td>9</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>36</td>
<td>13</td>
<td>18</td>
<td>93</td>
</tr>
</tbody>
</table>

**Mongolia**

One of developing countries (non-LDCs) with less than 10 registered CDM projects /4 registered/
Carbon intensive

Reasons of low CDM project development (out of 4, 3 is running and 2 issued CERs):
- Methodology barrier (applicability)
- Project size (small)
- Population factor (3.2 million)

Not part of WB Partnership for Market Readiness (PMR) Fund (for middle income countries)
Current focus is more on Joint Crediting Mechanism (JCM) (was the 1st signatory to JCM with Japan)
CASE STUDY: SALKHIT WIND FARM PROJECT

Project Background

- First large scale CDM project
- First commercial scale wind farm
- First privately owned power plant
- First Independent Power Producer
- First Power Purchase Agreement
- First new and largest renewable/power generation connected to the Central Grid in the last 30 years

... in Mongolia

✓ Supply around 5% of the Central Grid electricity production
✓ Supply 100,000 households with green electricity source

Capacity: 50 MW with 31 GE WTG
Total project investment: US$ 120 million
Investors:

[Images of sponsors: Newcom Group, European Bank, GE, FMO]
Choosing a buyer and the market

- CER Price Forecast: Supply & Demand Analysis
- Sales timing, amount
- Contract options: forward, upfront, combination, spot, auction
- CER Price Structure: Fixed, Floating (with cap & floor), all
- Choosing the market: compliance and/or new emerging markets vs voluntary market
- Buyer: government, fund, private utility, broker, retailer
- Single Buyer or many Buyers: Long-term ERPA or short term
- Tender: closed, open or bilateral communication
CER SALE STRATEGY

EU Market
SEA
% of annual CER of the 1st crediting period
Combination of price structures

Expected annual emission reduction
178 thousand tCO2e

50 MW Salkhit Wind Farm (pre-2012)

Uncommitted Spot trade/ auction

100 – 300 MW wind farm (post-2012)

Asia Super Grid

Non-EU Markets
Australia
New Zealand
Switzerland
South Korea from 2020
Japan

Voluntary Market
Higher price for smaller quantity
Gold Standard Premium

Joint Crediting Mechanism
From non-tradable credits to tradable.
Funding:
GEC up to 50% of initial investment cost
NEDO: full financing

Price
Qualitative & quantitative restriction on the use of CERs

Project registration date
May 2012

Start of the crediting period
June 2013

1st CER issuance
2014 - 2015

Joint Crediting Mechanism
From non-tradable credits to tradable.
Funding:
GEC up to 50% of initial investment cost
NEDO: full financing

Price
Qualitative & quantitative restriction on the use of CERs

9/4/2013
### Global CER Supply and Demand (2013-2020)

<table>
<thead>
<tr>
<th>MtCO2e</th>
<th>Demand</th>
<th>Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,600</td>
<td>1,900</td>
</tr>
<tr>
<td>EU ETS &amp; ESD: 1,400</td>
<td>EU ETS eligible CERs: 1,690</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>250</td>
<td>Other CERs: 223</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EU ETS eligible ERUs: 7</td>
</tr>
</tbody>
</table>

#### Factors to affect supply & demand:
- New Emission Trading Schemes (ETSs)
- Development of:
  - WB PMR Fund Implementation (Partnership for Market Readiness)
  - EBRD PETER project (Preparation for Emission Trading in the EBRD region)

#### Carbon Pricing Initiatives and Beneficiaries

<table>
<thead>
<tr>
<th>Carbon pricing initiatives</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUETS</td>
<td>Pre-2012, LDCs</td>
</tr>
<tr>
<td>New ETSs</td>
<td>Domestic &amp; international</td>
</tr>
<tr>
<td>WB PMR (MRV &amp; ETS)</td>
<td>Middle-income countries (16)</td>
</tr>
<tr>
<td>PETER</td>
<td>Euroasia in EBRD region</td>
</tr>
</tbody>
</table>
## NON-EU CARBON MARKETS

### Emission Trading Schemes

<table>
<thead>
<tr>
<th>ETSs</th>
<th>CER use</th>
<th>Eligible project type</th>
<th>Price (tCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td>From 2015</td>
<td>After linking with EUETS, CERs and ERUs up to 12.5% of an entities compliance obligation.</td>
<td>Same as EU ETS (no land use, industrial gas and nuclear projects. Sustainability criteria for large hydro.) + no A/R</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fixed AU$ 23 = US$ 24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flexible: ceiling AU$20, rising 5% annually; no floor (2015-2018); Floating after 2018 without ceiling</td>
</tr>
<tr>
<td><strong>New Zealand</strong></td>
<td>From 2008 to 2020</td>
<td>No limitation on approved int’l credits (IETA). Only demand for CP1 Kyoto credits subject to carry-over in 2015 (WB, 2013). No CERs after Dec 2011 (NZ ETS website)</td>
<td>Same as Australia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fixed price ceiling: NZ$ 25 (NZ$ 12.5) NZ$1=US$0.85</td>
</tr>
<tr>
<td><strong>Switzerland</strong></td>
<td>From 2001, (2013-2020)</td>
<td>Int’l credits up to 8% for pre-2012 projects. For new entrants, up to 4.5% of emissions in 2013-2020. Post-2012 projects only from LDCs.</td>
<td>Same as EU ETS</td>
</tr>
</tbody>
</table>

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*Note: NZ$ 1 = US$ 0.85*
## NON-EU CARBON MARKETS

<table>
<thead>
<tr>
<th>ETSs</th>
<th>CER eligibility</th>
<th>Eligible offset types</th>
<th>Price (tCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGGI</td>
<td>At US$10 price trigger, but proposed to be replaced.</td>
<td>Landfill methane, reduction of SF6, afforestation, EE, manure management</td>
<td>US$2</td>
</tr>
<tr>
<td>From 2009 to 2018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td>Only from 2020 up to 10% of an entities obligation not exceeding domestic offsets used for each compliance year</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2015-2026</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tokyo</td>
<td>If allowance prices are high on the condition that domestic offsets from Tokyo-based SMEs are also used.</td>
<td>Renewable energy</td>
<td>US$142 in Aug 2010 auction</td>
</tr>
<tr>
<td>From 2002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013-2019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>No CERs from wind &amp; hydro since May 2013, but open to others</td>
<td>Same as EU ETS</td>
<td>-</td>
</tr>
<tr>
<td>From 2005</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WB (2013), Mapping Carbon Pricing Initiatives
CARBON PRICING MECHANISMS

Carbon pricing mechanisms in:
- over 40 national;
- 20 sub-national governments including non-market schemes (e.g. carbon tax) (WB, 2013)

<table>
<thead>
<tr>
<th>ETSs</th>
<th>EU: Climate East</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belarus</td>
<td></td>
</tr>
<tr>
<td>Kazakhstan</td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td></td>
</tr>
<tr>
<td>East Asia Pacific (Fuel security certificate market mechanism)</td>
<td>ADB: Sustainable Transport Initiative</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WB PMR : 16 Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>China (ETS), India (EE),</td>
</tr>
<tr>
<td>Brazil (emission reduction</td>
</tr>
<tr>
<td>market), Vietnam (NMM),</td>
</tr>
<tr>
<td>Mexico (NAMA)</td>
</tr>
<tr>
<td>Indonesia (energy),</td>
</tr>
<tr>
<td>Thailand (ETS),</td>
</tr>
<tr>
<td>Chile (ETS, MRV),</td>
</tr>
<tr>
<td>Colombia (carbon trading</td>
</tr>
<tr>
<td>system in transport sector)</td>
</tr>
<tr>
<td>South Africa (carbon tax),</td>
</tr>
<tr>
<td>Costa Rica (study market</td>
</tr>
<tr>
<td>instruments), Morocco (MRV,</td>
</tr>
<tr>
<td>Jordan (NAMA), Turkey</td>
</tr>
<tr>
<td>(MRV)</td>
</tr>
<tr>
<td>Ukraine (ETS support by</td>
</tr>
<tr>
<td>EBRD PETER, EU: Climate</td>
</tr>
<tr>
<td>East)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carbon pricing mechanism</th>
<th>Prices per tCO$_2$e</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original currency</td>
</tr>
<tr>
<td>British Columbia Revenue Neutral Carbon Tax</td>
<td>CN$30</td>
</tr>
<tr>
<td>Danish CO$_2$ Tax</td>
<td>Dkr.150</td>
</tr>
<tr>
<td>Finnish CO$_2$ Tax</td>
<td>€30–60</td>
</tr>
<tr>
<td>Ireland</td>
<td>€20</td>
</tr>
<tr>
<td>Natural Gas Carbon Tax, Mineral Oil Tax: Carbon Charge and Solid Fuel Carbon Tax</td>
<td></td>
</tr>
<tr>
<td>Japan Tax for Climate Change Mitigation</td>
<td>¥289</td>
</tr>
<tr>
<td>Norwegian CO$_2$ Tax</td>
<td>Nkr.25–410</td>
</tr>
<tr>
<td>South African Carbon Tax</td>
<td>R120</td>
</tr>
<tr>
<td>Swedish CO$_2$ Tax</td>
<td>Skr1050</td>
</tr>
<tr>
<td>Swiss CO$_2$ Tax</td>
<td>SFr.36</td>
</tr>
<tr>
<td>United Kingdom Carbon Price Floor</td>
<td>£4.94</td>
</tr>
</tbody>
</table>
NEW EMERGING CARBON MARKETS

THE BIG THREE PLAYERS

- China nationwide ETS from 2016; domestic demand up to 0.6 Gt/yr (Nordic Council, 2013); absorbing CER supply by 28% to 1.5Gt (WB, 2013) /represents 52% of registered CDM projects/
- India (pilot ETS from 2011; 2012-2015) /18.8%/ 
- Brazil (create emission reduction market) /4.2%/
IMPACT OF CARBON PRICING MECHANISMS

ETS Links

- EUETS with:
  Australia (2015-2018), Switzerland (since 2010 by 2015) and possibly China
- Australia with NZ (since 2011 by 2015) and California
- NZ with South Korea

- Relationship between Carbon Pricing Mechanisms (ETS, crediting mechanism & carbon tax)?
- Impact on demand from the creation of carbon pricing mechanisms?
- Impact of ETS links on CER supply & demand balance

$.1 - $100/tCO2e in 2011

US$2 – US$4.6 for renewable offsets (stable in 2012)

Less than 1 MtCO2e CERs were sold to the voluntary buyers in 2012 (Ecosystem Marketplace)

| Table 3: Transacted Volume, Market Value, and Average Price, UN Clean Development Mechanism and “CDM-Relevant” Voluntary Carbon Offset Types, 2012 |
|-------------------------------------------------|-------------------------------------|-----------------------------------------------|-----------------|-------------------------------------|-------------------------------------|-----------------|
| Clean Development Mechanism                     | Voluntary Carbon Offsets            |                                               | Volume (MtCO2e) | Value ($ Million) | Avg. Price ($/tCO2e) | Volume (MtCO2e) | Value ($ Million) | Avg. Price ($/tCO2e) |
| Primary Markets                                  |                                    |                                               | 339 Mt          | $1,047 M          | $3.1/t              | 20 Mt          | $86 M             | $5/t              |
| Secondary Markets                                |                                    |                                               | 1,686 Mt        | $5,451 M          | $3.2/t              | 22 Mt          | $87 M             | $4.2/t             |
| TOTAL 2012                                       |                                    |                                               | 2,025 Mt        | $6,498 M          | $3.2/t              | 42 Mt          | $172 M            | $4.5/t             |
Figure 28: Transacted Volume and Average Price by Buyer and Seller Types, Renewables Offsets, 2012 (MtCO₂e and $/tCO₂e)

Notes: Findings based on 26 MtCO₂e associated with renewable energy offsets and a response to both transaction-level and buyer-type questions.


Price and transaction

Figure 30: Change in Transacted Volume and Average Price by Project Type, 2011-2012

Notes: Findings based on 77 MtCO₂e associated with transaction-level price, volume and project type.


Average price US$ 4.8-US$ 6.8 (OTC, 2012)
Voluntary market vs. Compliance market

Figure 37: Transacted Volume and Average Price by Various Project Standards and Certifications, 2011-2012

GS wind
US$6/tCO2e
(2012)

Notes: Based on 70 MtCO₂e associated with the use of an independent third-party project standard.
On project level (short-term)

Follow the development of potential sources of demand from:
- Joint Crediting Mechanism with Japan
- New emerging markets and ETSs
- Explore CER sales opportunities in the voluntary market
- Wait until price recovers?

On national level (long-term)
- Explore New Market Mechanisms: NAMAs, JCM, sectoral crediting mechanisms
- Consider development of national ETS: join WB PMR Fund
- Wait until new demand/opportunities emerge?
**SUMMARY**

**Positive aspects:**

Emergence of various carbon pricing initiatives:

- Emission Trading Schemes and potential new demand from Australia, New Zealand and others (though minimal)
- Development of domestic carbon markets and crediting mechanisms among big CDM players and their potential linkage with other existing/emerging ETSs for supply of CERs: absorption of some grey-CERs from the market (though can enter market once price goes up)
- ETS links in support of global carbon market and wider emission trading to facilitate the continuation of offset mechanisms
- Support of project developing countries through WB PMR Fund, EBRD PETER project, JCM, new market mechanisms etc.

Use of CERs to meet domestic obligation (FNI, 2013):

- By KP parties without emission reduction commitment in the 2\(^\text{nd}\) commitment period (Doha agreement).
- By countries with voluntary emission reduction commitments (Nordic countries)

**Reality:**

- Lack of demand to meet supply and unlikelihood of new markets & ETSs to absorb supply
- Limited opportunity for post-2012 projects in Non-LDC developing countries with small number of CDM projects
Challenges for project developers:
- Keep track of fast and constant changes in the rule of the game
- Adjustment to changes in carbon markets
- Lengthy process up until decisions to be made on increased mitigation commitments by 2015 and its implementation by 2020 or EU ETS reform
- Time required to wait until all new domestic markets are set-up, become operational and inter-linked

But opportunities remain if the Project is:
- One of the first or few-of-its-kind (comes from countries with few projects)
- Have high sustainability criteria
- Meets all relevant local and international standards and requirements
- Have strong, reliable partners

For new projects:
- JCM provides flexible mechanism with ease of access
- Voluntary market offers decent prices enough to keep offsetting attractive
- Some governments with voluntary mitigation commitments offer fair terms above the market price
Potential factors to increase demand (from FNI, 2013)
- Inclusion of international airlines and marine industry
- Increased use of CERs for domestic mitigation targets (carbon tax, ETS, carbon pricing mechanisms) by both developed and developing nations
- Exclusion of particular project types, sectors to support projects with high sustainability benefit (e.g. supporting excluded projects types/sectors through other international agreements other than CDM)
- New sovereign funds

Need for:
- Differentiated support to underrepresented developing countries with less than 10 CDM projects like Mongolia and/or projects, one of first or few of its kind
Thank you for attention

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www.newcom.mn
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• UNFCCC website
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