Trends in Voluntary and Compliance REDD+ Emission Markets

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Outline

• The “Market”
  – Range of actions affecting demand
  – Market overview
  – Voluntary markets
  – Funds
  – Compliance markets

• Supply and Demand Characteristics

• What about the future?
Lots of activity, lots of options, but we still need to do more

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Global GHG Markets

“The Market”

Compliance
- Cap and Trade
- Taxes
- Intensity Targets
- Baseline and Credit

Funds
- Bilateral
- Multilateral

Voluntary Markets
- VCS
- Other misc.
- Proprietary
There are a lot of reasons to buy voluntary offsets

Figure 7: Market Share by Buyer Motivation, 2013 (% Share)

- Offset resale
- Climate-driven mission; to combat climate change
- Corporate social responsibility
- Demonstrate climate leadership in industry, policy
- Engage customers/clients to offset emissions
- Incentivize supply chain practice change, sustainability
- Other

Notes: Based on responses representing 40 MtCO$_2$e in transacted offset volume.
The Verified Carbon Standard (VCS) is a well-respected GHG reduction and removal certification standard that dominates the voluntary market in general, and the forest market in particular. During 2012 VSC accounted for 57 percent of the transaction volumes in the forest carbon markets.

Competition with other offset types

Forest based credits exist in a competitive environment with multiple substitutes.

Figure 10: Market Share by Project Type, 2013 (% Share)

Notes: Based on responses representing 60 MtCO$_2$e in transacted offset volume. * Run-of-river hydropower.
Buyers preferentially purchase REDD+ credits if the price is right

- Transaction volumes more than doubled to 22.6 MtCO$_2$e, while the market value also increased by 35% to $94 million. Even excluding KfW and Acre state’s sizable agreement for performance-based payments, REDD was the most popular project type.

- During 2012-13 many forest carbon project developers conceded to buyer demands and dropped their previously above-average prices. Hence growth came at a (lower) price, with suppliers reporting an average REDD offset price of $4.2/tCO$_2$e (down from $7.4/tCO$_2$e) which would have been even less ($3.5/tCO$_2$e) had it not been buoyed by Acre’s sizable transaction, approximated at $5/tCO$_2$e.

- Market currently oversupplied

Figure 9: REDD+ Offset Transacted Volume and Supplier Count by Price Range (MtCO$_2$e and Count of Suppliers)

Notes: Based on responses representing 22 MtCO$_2$e in transacted offset volume.
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REDD+ Finance
Global GHG Markets

**BioCF:** Has capital of about $207 million after expenses. The fund operates at the jurisdiction-scale—i.e. within a landscape-wide area that is governed by a single political jurisdiction.

**FCPC-C:** Has capital of $350 million after expenses. The fund is designed to close in 2020.

Japan’s **JCM** is a Non-tradable credit mechanism. So far there is no credit investment or purchase strategy. Up to 539 million tCO$_2$e international offsets between 2013 and 2020 (World Bank estimate).

In May 2010, **Norway** pledged $1 billion to support Indonesia’s efforts to reduce emissions from deforestation and degradation of forests and peat lands. Indonesia has not adhered to its announced moratorium on forest clearing, and the country will be unable to meet its emissions reduction target.

The **REDD Early Movers (REM)** fund supports pioneers in the REDD+ sector—countries who are taking risks and acting independently towards mitigating climate change through preserving their forests. Fund value $42.5 million before expenses.
Uncertain Status Quo Demand Outlook: Japan & Norway
Global GHG Markets

Compliance Markets

Baseline and Credit
- Alberta
- EU ETS
- California
- Korea
- Quebec
- Costa Rica
- Marine bunker fuels?

Cap and Trade
- Australia
- Aviation
- Mexico
- Chile
- South Africa

Offsetting

Taxes

Intensity Targets
- US EPA CAA s111
- China

Key points:

- Cap-and-trade.
- Mix of free allocations and auctioning.
- REDD / REDD+ not yet eligible
- Offsets: 8 percent. Sectoral offset cap for REDD limited to 2 percent (I & II) and then 4 percent (III). Only REDD not REDD+ so far, but Climate Action Reserve (CAR) is piloting REDD+ protocols in Mexico.
- Coverage: Initially only power generation, but scheme coverage is expanded in the second compliance period to cover approximately 85 percent of California’s GHG emissions being covered.
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Aviation—Real possibilities for REDD+

- In 2010, the 37th Session of the International Civil Aviation Organization (ICAO) Assembly adopted an aspirational carbon neutrality goal of keeping the global net carbon emissions from international aviation from 2020 at the same level.
- During 2013 the International Air Transport Association (IATA) 69th AGM overwhelmingly endorsed a resolution on implementing a carbon neutral growth strategy from 2020.
- Proposed approach is to offset emissions from 2020 onwards (2020 being the base year.
- Demand for REDD+ is uncertain.
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Intensity Targets
- US EPA CAA s111
Mexico—Polluters pay and the community benefits from carbon tax revenues

- Mexico implemented a carbon tax on fossil fuel use in early 2014.
- The tax is based on estimates of the carbon content of fossil fuels.
- The carbon tax rate for natural gas being set to zero.
- Mexican CDM offsets can be used for compliance.
- Details are unavailable on the types and limits of CDM offsets including potential use of forest offsets.
- Inclusion of REDD+ is uncertain.
- Approximate price of Carbon is set at $US 3.5 / tCO$_{2e}$
- 1.0 billion USD revenue.
US EPA CAA s111—Potential game changer

US EPA has taken a position that GHG emissions pose a health threat and, under the 2009 Clean Air Act (CAA), it has powers to set standards for large sources and suppliers in the United States.

The Clean Power Plan—On June 18, 2014 the United States Environmental Protection Agency (EPA) introduced carbon pollution emission guidelines for existing stationary sources or Electric Utility Generating Units (EGUs)—

- Emissions intensity targets are specified per state and expressed as CO$_2$ per net megawatt hour.
- Goals represent CO$_2$ emission rates achievable by 2030 after a 2020–2029 phase-in period
- Offsets can be included in a state plan provided that the required level of emission performance is achieved by affected EGUs.
- Nationwide, by 2030, this rule would achieve CO$_2$ emission reductions from the power sector of approximately 30 percent from CO$_2$ emission levels in 2005.

**Table 8—Proposed State Goals**

<table>
<thead>
<tr>
<th>State</th>
<th>Interim goal</th>
<th>Final goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>1,147</td>
<td>1,059</td>
</tr>
<tr>
<td>Alaska</td>
<td>1,097</td>
<td>1,003</td>
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<tr>
<td>Arizona</td>
<td>735</td>
<td>702</td>
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<tr>
<td>Arkansas</td>
<td>968</td>
<td>910</td>
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<tr>
<td>California</td>
<td>556</td>
<td>537</td>
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<tr>
<td>Colorado</td>
<td>1,159</td>
<td>1,108</td>
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<tr>
<td>Connecticut</td>
<td>597</td>
<td>540</td>
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<tr>
<td>Delaware</td>
<td>913</td>
<td>841</td>
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<tr>
<td>Florida</td>
<td>794</td>
<td>740</td>
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<tr>
<td>Georgia</td>
<td>891</td>
<td>834</td>
</tr>
<tr>
<td>Hawaii</td>
<td>1,378</td>
<td>1,306</td>
</tr>
<tr>
<td>Idaho</td>
<td>244</td>
<td>228</td>
</tr>
</tbody>
</table>
Significant potential demand from domestic schemes

- **An optimistic view of the future.** Major drivers are: Australia, Canada, New Zealand, and the United States of America.
- **UNFCCC agreement on REDD+ is likely to generate significant demand.** Can help with market acceptance. Preliminary numbers suggest it might be up to 3,302 MtCO$_2$e.
- Blue Sky is compared to a theoretical model of an ambitious UNFCCC agreement on highly confident and moderately confident scenarios from the UNEP Gap Report. UNFCCC model is calibrated using IPCC data from the 5$^{th}$ Assessment Report.
- Still no demand from Europe.
- US assumed to follow a Waxman-Markey like Bill.
- Challenge with analysis: does not currently factor in price affect on supply and demand.
Supply and Demand

- Supply and demand can be characterized by jurisdictional, legal, policy, regulatory, and methodological fragmentation. Fragmentation is now more apparent on the demand side than the supply side.
- Supply of REDD+ credits compete with other offset types, which may be advantaged by factors such as sectoral caps (e.g., California) or outright bans (e.g., EU ETS).
- Market is currently over supplied and demand growth is dependent on uncertain future compliance actions.
- There is a need for clearer commitments to stimulating demand. Such as through the inclusion of REDD+ in any future UNFCCC agreement.

Domestic schemes and aviation are the demand drivers, but it is very important to have REDD+ in the UNFCCC agreement because this is a precondition for acceptance in domestic schemes and aviation.