Forest Carbon Partnership Facility

Carbon Fund Introduction to Managing Delivery Risk

Third Meeting of the FCPF Carbon Fund (CF3)
Asunción, Paraguay
March 24 and 26, 2012

Outline

1. World Bank Experience in Kyoto Protocol and VCS Projects
2. Delivery Risks in the FCPF Carbon Fund
3. Mitigating Delivery Risk in the FCPF Carbon Fund (examples)
4. Questions for consideration

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Breadth of Experience

- Carbon Finance Unit (CFU) of the World Bank acts as Trustee for 12 Carbon Funds and Facilities with approximate capitalization of $3 billion
- Portfolio of more than 150 signed ERPAs, including LULUCF
- Experience managing delivery risks
  - Different technologies
  - Different regulatory frameworks (CDM/JI/voluntary)
  - ~ 50 countries
  - Wide variety of fund participants (sovereign and private) with different objectives
  - Different stages

Risk Categories (1)

- Financial risk
  - Project not fully funded
- Technology and implementation risks
  - Unproven technology, inexperienced project entity
- Social and environmental risks
- Methodological, monitoring and verification risks (and Additionality assigned its own category)
  - Regulatory risks
- Host Country regulatory risk
- Host Country political risk

Risk Categories (2)

Kyoto Protocol and VCS Projects	
Risk Category	Aspect of Project Development
Financial	Commercial
Technology and Implementation	Operational
Social and Environmental	Operational
Methodology, Monitoring and Verification Risk	Regulatory
Additionality	Regulatory
Host Country Regulatory	Regulatory
Host Country Political	Regulatory

Key Stages in each Risk Category

<table>
<tr><th colspan="3">Stage</th></tr>
<tr><th>Commercial</th><th>Operational</th><th>Regulatory</th></tr>
<tr><td rowspan="4">Before ERPA Signature</td><td>Before Due Diligence</td><td rowspan="3">Before Due Diligence</td></tr>
<tr><td>After Due Diligence but before Start of Construction</td></tr>
<tr><td>After Start of Construction</td></tr>
<tr><td>After Due Diligence but before Project Commissioning</td><td>After Due Diligence but before PDD sent to validator</td></tr>
<tr><td rowspan="5">After ERPA Signature</td><td rowspan="3">After Project Commissioning</td><td>After PDD sent to validator but before Validation complete</td></tr>
<tr><td>After Validation complete but before Registration</td></tr>
<tr><td>After Registration complete but before 1st ER Issuance</td></tr>
<tr><td rowspan="2">After 1st ER Issuance</td><td>After 1st ER Issuance but Before project nears renewal of crediting period</td></tr>
<tr><td>Near renewal of crediting period</td></tr>
</table>

Ways of Managing Delivery Risk (1)

- Mitigation generally through
  - Avoidance (eliminate, withdraw from or not become involved)
  - Sharing (transfer or insure)
  - Reduction (mitigate)
  - Retention (accept)
- via ERPA
  - Seniority clause (take precedence over others purchasing ERs from the same program)
  - Sweep clause (if more ERs are produced than contracted, FCPF can "sweep up" the excess ERs as they become available)
  - Overcollateralization (i.e., contracting only for a fraction of ER potential)
  - Call options (no commitment but buyer can purchase more if desired)
  - Pricing premia/discounts (to reflect benefits/risks)

Ways of Managing Delivery Risk (2)

- Conduct regular ER under-delivery risk assessments for each project in pipeline (or portfolio, depending on whether ERPA has been signed)
- Forecast the expected ER under-delivery in comparison to the contracted volumes
- New Project Under-Delivery Risk Assessment Tool in 2010
- Use Issuance Success Rates in other similar projects (using Technology Categories)
- Adjust issuance success using a risk formula
- Produce a Delivery Risk Ratio (DRR) for each project
- Apply DRR to contracted volumes → forecast volumes
- Combine forecast volumes for each project to produce forecast volumes for each fund

Risk Formula

- Risk categories
- Risk levels
  - Only 4: no risk, low, medium and high
- Key stages in each category
- Risk definitions for each stage within each category for different types of Kyoto projects (including LULUCF) and REDD VCS projects
- Apply weights to risk categories
- Produce an Overall Risk Rating (ORR) for a project
- Use ORR to adjust issuance success → Delivery Risk Ratio (DRR) for a project

Risk Definition Example

- Host Country Political Risk indicator is calculated as follows:
- “Expropriation and Breach of Contract” indicator
  - Obtained by averaging indicators published by a range of sources
  - Individual indicators are scaled to a 1-100 scale and averaged
- “War and Civil Disturbance” indicator
  - Also obtained by averaging a number of different indicators
- Countries are then assigned a rating in the range of 1-100 by taking the worst (highest) of the two indicators above

Risk level	Average indicator
No risk	1-30
Low	30 to rating for China
Medium	Rating for China to 70
High	70-100

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Delivery Risks in the FCPF Carbon Fund (1)

- From Issues Note
- Financial risk to the Carbon Fund
  - Advances, preparation costs, opportunity cost of losing an ER Program
  - Related to delivery, does not impact on delivery
- Financial Risk to the ER Program
  - Financial viability (program not fully funded)
- Delivery Risk (i)
  - Actual realization of ER volumes
- Delivery Risk (ii)
  - Inability to credibly measure ERs

Delivery Risks in the FCPF Carbon Fund (2)

- Reversal (non-permanence) risk
- Displacement (leakage) risk
  - Domestic
  - International or cross-border
- Social risk
  - Social disruption or conflict (which affects delivery)
- Political risk
  - REDD Country (or Host Country)
- Regulatory risk
  - e.g., verification and issuance, depending on regulatory framework

Risk Categories

Kyoto Protocol and VCS Projects		FCPF Carbon Fund Programs
Risk Category	Aspect of Project Development	Equivalent Risk Category
Financial	Commercial	Financial (financially viable)
Technology and Implementation	Operational	Delivery (actual realization of ER volumes)
Social and Environmental	Operational	Social
Methodology, Monitoring and Verification Risk	Regulatory	Regulatory
Additionality	Regulatory	?
Host Country Regulatory	Regulatory	Regulatory
Host Country Political	Regulatory	Political

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Mitigating Financial Risk

- Financial risk in case of advances and preparation costs
  - Also opportunity cost of having to replace an advanced ER Program that is dropped from the pipeline/portfolio

- Mitigation:
  - Quality at entry: select quality programs
    - Financing capacity of the sponsor
    - Managerial capacity, etc.
  - Declare ERPA effective only when program fully funded or other specific funding is achieved?
  - Limit amounts of advances and preparation costs?
  - Agree advances on a case-by-case basis?
    - Dependent on risks associated with delivery
    - Note REDD Country faces a risk as well
  - Guarantees or insurance?
    - Various types of coverage dependent on risk category (e.g., political, physical)
  - Repayable advances and cost recovery on default (which includes non-delivery)?

Mitigating Methodology Risk

- Scope:
  - Uncertainty associated with MRV system and REL
- Mitigation:
  - Methodological framework
  - Overcollateralization (i.e., contracting only for a fraction of ER potential)?
  - Call options?

Mitigating Non-Permanence Risk

- Cannot be fully guaranteed
- Quality at entry: select quality programs
- Reserves (buffer accounts)?
  - Certain % of generated ERs transferred to separate account to compensate for potential future events of reversal
- Overcollateralization (i.e., contracting only for a fraction of ER potential)?
- Combination of reserve and overcollateralization?
- Guarantees or insurance?
- Penalties (repayment)?
- Price adjustments? See methodological & pricing framework

Mitigating Leakage Risk

- Scope
  - Focus on domestic (not international) so only applies to sub-national programs
- Mitigation:
  - Cannot be fully controlled
  - Quality at entry: select quality programs
  - Consistency with national MRV system and REL
  - Reserves (buffer accounts)?
  - Overcollateralization (i.e., contracting for a fraction of ER potential)?
  - Combination of reserves and overcollateralization?
  - Guarantees or insurance?
  - Penalties (repayment)?
  - Price adjustments? See methodological & pricing framework

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Questions for Consideration

1. Should delivery risk impact price, or should risk be mitigated in other ways, esp. contracted volumes? See pricing discussion.
2. Could we use the current Under-Delivery Project Assessment Tool as a basis for an assessment tool for FCPF Carbon Fund programs? Should we?
3. Appetite for cost recovery clauses in ERPA (in case of the CF financing preparation costs and/or making ERPA pre-payments)?
4. Include buffers?
5. Explore use of guarantees and insurance?

THANK YOU!

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