UNDP Webinar

Green Bonds to Accelerate NDC Implementation In Developing Countries

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(A) INTRODUCTION

(B) COVERED GREEN BONDS FOR DEVELOPING COUNTRIES
(A) INTRODUCTION
Green bonds

1) Bonds issued and invested in on the understanding that the proceeds (funds raised) will be used for green projects. Issuance in 2017 topped USD 150 billion.

2) No official definition of “green” at the moment. Mostly judged qualitatively on the basis of project types.

3) Emerging requests for information from some serious green investors
   (a) specific projects that have been financed; and
   (b) precise data about their GHG mitigation contribution.
What green bonds can and cannot do for developing countries

1) **CAN**: Provision of private-sector long-term debt financing, allowing the public sector to concentrate on the areas beyond private sector capacity.

2) **CANNOT**: Offer equity or grants.

These properties are common to all the various types of green bonds, such as government bonds and project bonds.
(B) COVERED GREEN BONDS FOR DEVELOPING COUNTRIES
Covered Green Bonds Overview

1) Meeting ambitious NDC goals requires many small projects, in addition to large projects.

2) These small projects can be aggregated for bonds, and backed (covered*) by the individual projects as collateral.

*The structure can conceptually be called “asset-backed”. However, this term is not used here due to possible confusion with “asset-backed securities” (ABS) that played a major role in the 2008 financial crisis (Lehman shock).
Application to developing country projects

1) To date, predominantly adopted for developed country individual projects.

2) Expansion to developing countries likely to entail two credit enhancement measures to deal with the real and perceived riskiness of developing country projects:
   a) Public sector support (e.g. partial guarantee) to help improve the credit standing of individual projects
      → The specific level of support depends on the project.
   b) Country risk insurance
Additional information about covered green bonds for developing countries

1) Expected to be privately placed with one or a few investors, at least for initial issuances.

2) Denominated in a hard currency.

3) Can be “green notes” for regulatory and procedural simplicity.
Contact

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(Annex 1) A PROTOTYPE
1) As the basis for further discussion, a prototype financial structure for covered green bonds for developing countries (the “Prototype”) has been developed.

2) The Prototype includes credit enhancement measures undertaken with public sector support.
2 An illustrative example (1)

1) For the clarity of explanation, the Prototype is accompanied by an illustrative example (“IEx”) to which it is applied.

2) The IEx has been synthesized from several different sources and does not represent a situation that actually exists.
2 An illustrative example (2)

3) The IEx pertains to 872 installations of 20 kW solar PV systems at municipal government buildings (office buildings, schools, hospitals, etc.).

4) These solar PV systems, estimated to cost USD 42.3 million in total, are owned by an aggregator and provided to participating buildings under operating lease arrangements.
3 Diagrammatical representation

1) For further clarification, a diagram is provided on the next page.

2) It represents the financial structure of the Prototype and shows how it is applied to the illustrative example with 872 individual projects (IPs)
Diagrammatic representation of the Prototype

Key operating cash flow elements (USD)

<table>
<thead>
<tr>
<th>(I) IP number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>...</th>
<th>872</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(II) Initial investment cost³</td>
<td>48,555</td>
<td>48,555</td>
<td>48,555</td>
<td>...</td>
<td>48,555</td>
<td>42,339,960</td>
</tr>
<tr>
<td>(III) Amount of funding provided by green bonds: (II) x 85%</td>
<td>41,272</td>
<td>41,272</td>
<td>41,272</td>
<td>...</td>
<td>41,272</td>
<td>35,988,966</td>
</tr>
<tr>
<td>(IV) Annual redemption requirement: (III)/20</td>
<td>2,063.6</td>
<td>2,063.6</td>
<td>2,063.6</td>
<td>...</td>
<td>2,063.6</td>
<td>1,799,448</td>
</tr>
<tr>
<td>(V) Annual amount received from IPs⁴</td>
<td>2,571</td>
<td>2,571</td>
<td>2,571</td>
<td>...</td>
<td>2,571</td>
<td>2,241,902</td>
</tr>
<tr>
<td>(VI) Annual net cash flow after O&amp;M costs⁵</td>
<td>2,085.4</td>
<td>2,085.4</td>
<td>2,085.4</td>
<td>...</td>
<td>2,085.4</td>
<td>1,818,503</td>
</tr>
<tr>
<td>(VII) Net cash flow over 20 years: (VI) x 20</td>
<td>41,708.8</td>
<td>41,708.8</td>
<td>41,708.8</td>
<td>...</td>
<td>41,708.8</td>
<td>36,370,055</td>
</tr>
</tbody>
</table>

1 It is noted that the diagram adopts an exact figure for the bond issuance to ensure that it can easily be identified as corresponding to 85% of the total investment costs. In practice, the amount will be rounded.
2 For the sake of simplicity, the AGGREGATOR is assumed to be the bond issuer, though the actual issuer may be some other entity in accordance with the host country’s policies.
3 Costs and the replicability potential are tentative and will be confirmed as the first step of project implementation.
4 This value is based on the combination of actual values in a possible host country, international data, recent trends and assumptions considered reasonable.
5 The annual O&M costs are assumed to be USD 485.6, corresponding to 1% of the initial investment costs given in row (II).
(Annex 2) GREENHOUSE GAS (GHG) MITIGATION IMPACT
1 Illustrative example

1) The illustrative example is expected to make 506.8 ktCO2e of GHG mitigation contribution during its 20-year lifetime.

2) This is calculated according to the relevant CDM rules.

3) The illustrative example requires USD 36.0 million of covered green bonds financing.
2 Potential (1)

1) On a conservative assumption of annual green bond issuance of USD 100 billion, 1% of the issuance equals USD 1 billion per year.

2) This is 27.8 times the amount of green bonds required for the illustrative example.
2 Potential (2)

3) Hence, allocation of 1% of annual green bond issuance to undertakings similar to the illustrative example will conceptually enable *each year* the implementation of projects with an approximate total of 14.1 million tCO2e of GHG mitigation during their lifetimes (506.8 ktCO2e x 27.8).

4) While admittedly an oversimplification, the calculation does point to the huge potential GHG mitigation contributions that can be made by covered green bonds.
(Annex 3) NEXT STEPS
1 Two immediate tasks

1) Improving on the Prototype based on feedback to be received subsequent to the webinar

2) Road-testing the improved Prototype, with the cooperation of host country project implementers, international supporters and green bond investors.