Transformative RBCF programs in the energy sector

Barcelona, 22 May 2017

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What is a transformative effort and impact?

> Incentivize/stimulate a significant change of direction, mode of operation or conditions for decisions

> Establishing a new natural state of balance/development path

> New way to be self-sustained/self-propelled after some time
Financing emission reductions in a Paris context

> **Perspective: Country determined and country driven efforts (NDCs)**

- The status of the CDM market indicates *limited demand* from public sector and *‘no’ interest* from private sector

- New global market mechanisms not expected to be substantial in the short/medium term
  - Common reporting framework and financial mechanisms

- **Limited funds available** – fair allocation of funds (i.e. competition for funds)
  - How to increase the sum?
  - More fair to allocate the price money based on achievements, than before the start?

> **Four market segments considered:**

<table>
<thead>
<tr>
<th>New access to clean electricity</th>
<th>More clean electricity fed to the grid</th>
<th>Improved energy efficiency</th>
<th>Access to cleaner cooking</th>
</tr>
</thead>
</table>


Using RBF to finance emission reductions in the energy sector

- Energy+ (RBA)
  - Govt. projects and programs (REIPPPP)
  - Private sector projects

- Conventional project finance
  - Private finance
    - Stove Auction
    - GET FiT
  - Public finance
    - IDCOL
    - Global LEAP

- Energy sector regulations
  - Reform incentives

- Crediting mechanisms
  - Created financial interest

- Public finance
  - ECCH Co-benefits
  - PAF

(create)
## Brief description of selected RBF programs - 1

<table>
<thead>
<tr>
<th>Program (Market segment)</th>
<th>Program description</th>
<th>Transformative ambition</th>
<th>Governance and MRV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GET FiT</strong> (More clean electricity fed to the grid)</td>
<td>Front-loaded top-up feed-in-tariff per kWh for RES based on PPAs + Partial Risk Guarantee Facility.</td>
<td>De-risk commercial RE projects, reducing the need for tariff top-ups in the future.</td>
<td>In Uganda: PAAs managed by Electricity Regulatory Authority; RBF and PRG by KfW. Donor funded. Project level MRV; MWh.</td>
</tr>
<tr>
<td><strong>REIPPPP</strong> (More clean electricity fed to the grid)</td>
<td>Competitive non-negotiable PPA tariff tenders (reverse auctions) replacing FiTs.</td>
<td>Bring cost of RE down and eliminate the need for above grid cost coverage tariffs.</td>
<td>Managed by the IPPPPP Unit Dept. of Energy, National Treasury and DBSA. Guarantees from NT. State funds. Project level MRV; MWh.</td>
</tr>
<tr>
<td><strong>IDCOL SHS Program</strong> (New access to clean electricity)</td>
<td>Fixed sum RBF incentives for eligible SHS sold + access to financing at favorable rates.</td>
<td>Bring SHS distributors to effective scale, facilitate financing and make SHS a natural choice for households.</td>
<td>IDCOL, Govt. managed “non-bank financial institution”. Donor funded. Project level MRV; units sold.</td>
</tr>
</tbody>
</table>
### Brief description of selected RBF programs - II

<table>
<thead>
<tr>
<th>Program (Market segment)</th>
<th>Program description</th>
<th>Transformative ambition</th>
<th>MRV and governance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global LEAP</strong> (Improved energy efficiency)</td>
<td>Award and RBF incentives for super efficient appliances, to substitute inefficient technologies.</td>
<td>A SHS with super efficient appliances is cheaper than a SHS with currently available appliances - at scale.</td>
<td>Managed by CLASP. Donor funded. Project level MRV; units sold.</td>
</tr>
<tr>
<td><strong>The Stove Auction</strong> (Access to cleaner cooking)</td>
<td>Auction of eligible stoves to local distributors, with an incentive covering the gap up to the wholesale prices.</td>
<td>Aggregate demand from distributors and support producers into a new market; aim to arrive at a clearing price without subsidy.</td>
<td>Originally managed by SNV, now by a commercial entity. Donor funded. Project level MRV; units sold.</td>
</tr>
<tr>
<td><strong>Energy+</strong> (all segments)</td>
<td>RBA offered for HHs with verified new or improved access; payment related to both climate and development impact.</td>
<td>Stimulate increased country ownership and drive for results; offer autonomy in terms of how. Focus on value of SE4All service levels.</td>
<td>Managed the Norway MFA; Donor funded. Discontinued. National/sector level MRV; units sold.</td>
</tr>
</tbody>
</table>
Value-based RBF: Payment amount relative to the value/expected impact per tier in the GTF

<table>
<thead>
<tr>
<th>GTF Service level</th>
<th>TIER 1</th>
<th>TIER 2</th>
<th>TIER 3</th>
<th>TIER 4</th>
<th>TIER 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost index*</td>
<td>1</td>
<td>5</td>
<td>8.5</td>
<td>125</td>
<td>137.5</td>
</tr>
<tr>
<td>GTF index</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>E+ Develop index</td>
<td>1</td>
<td>1.7</td>
<td>2.1</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>E+ Climate index**</td>
<td>1</td>
<td>2.4</td>
<td>5.0</td>
<td>8.8</td>
<td>10.5</td>
</tr>
</tbody>
</table>

*Most cost efficient solution per tier, based on IEA cost estimates and Differ calculations
**Based on CDM methodology guideline for off-grid electrification (100% RE)

The GCF can establish general, rights-based RBF programs
- Value of impact is more universal than cost and requires less calculations
- Metrics aligned with GTF reduces MRV burden for recipient
- RBF offers high degree of autonomy and can ensure equitable distribution
- Can also facilitate debt and TA funding
Value-based RBF: Calibrating the incentive level per tier

Support level (USD) vs. Service level (tier)

Incremental cost index vs. Value index

ILLUSTRATIVE
“The RBF design box”

Program cost

ILLUSTRATIVE

100% cost recovery
@ 75% of target

100% cost recovery

Own contribution

60% cost recovery

Program target

Baseline

Number of stoves (#)

Stove penetration (%)

Program cost, program target and according cost recovery share determines the PBR per stove or percentage point.
Costs can be high initially, but the learning curve can be steep.
RBF can be used to support both Government programs and projects directly – what is optimal?

> Which stage in the results chain to measure?
> Technical capacity and ability to manage MRV?
> Sector-wide or targeted?
> Access to relevant financing sources?
> Product subsidies or general interventions?
  - RBF per unit sold vs. RBF for awareness raising campaigns or implementation of standards
> Credibility of principal among agents?

What way has the strongest transformational impact?

**The results chain:**

- **Input**
- **Activity**
- **Output**
- **Outcome**
- **Impact**

**Milestones**

- E.g. kWh or HHs w/ improved access
- E.g. CO₂e red. Share of RE in mix
- E.g. Mitigated climate change

**Achieved results**

- Budgets, plans, expected results
- E.g. kWh or HHs w/ improved access
- E.g. CO₂e red. Share of RE in mix
- E.g. Mitigated climate change
Contact info

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Relevant papers:


http://www.differgroup.com/analysis/p/The-way-towards-universal-access---Putting-value-on-electricity-services?ctl=Details&did=8&mid=6116

How to assess the attractiveness of RBCF programs vs. alternatives

Effectiveness in leveraging other sources

\[
\text{Leverage factor} = \frac{\text{Disbursed RBCF (USD)}}{\text{Total financing}}
\]

\[
\text{Efficiency in creating emission reductions} = \frac{\text{tCO2e reduced/ RBCF (USD)}}{\text{Total verified emission reductions (tCO2e)}}
\]

\[
\text{Effectiveness in creating reductions} = \frac{\text{Total cost per tCO2e reduced}}{\text{Total verified emission reductions (tCO2e)}}
\]

(Gather data)

(Calculate)
RBF in a project finance context

- **Results-based grants**
- **Revenues**
  - RBF
  - Future revenue from project
- **Costs**
  - BBF
  - Debt
  - Equity/own contrib.
- **Financing institutions**
- **Upfront grant based on cost budgets**
- **Investors**