Principles:
Subsidy Design for Private Sector Mini-grids

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Take account of three participants

- Private sector mini-grids have three participants:
  - ✓ Developers/Operators, who may be private firm or local authorities or NGOs
  - ✓ Target beneficiaries, who will get power from the mini-grid
  - ✓ Subsidy providers, who may taxpayers (Government budget), ratepayers (who pay electricity bills), or development partners.
- Subsidy design and values must take account of the financial needs of all three participants

Developers: Pre-investment Subsidies

- Provided before financial close
  - ✓ Catalytic and risk-sharing – designed to cast wide net
  - ✓ Many subsidy recipients will finally not undertake projects
- Elements
  - ✓ General market and resource assessments
    - o at no cost to developers
  - ✓ Pre-feasibility and feasibility studies
    - o cost-shared - to be conducted with 'approved firms'
  - ✓ Technical and financial information assistance
    - o at no cost to developers at least in early years

Developers: Investment Subsidies -1

- Key need is to build financing package that will finance capital costs
  - ✓ Crucial for capital-intensive renewable mini-grids
    - o No revenues until production and sales take place
- Elements
  - ✓ Subsidies
  - ✓ Equity
  - ✓ Debt

Developers: Investment Subsidies -2

- Extent of subsidies needed depends upon availability of other elements of financial package
  - ✓ Subsidy needed depends upon development of debt and equity markets
  - ✓ Critical to develop these markets
    - o Possibly provide partial guarantees
- Post-result carbon finance payments cannot be used to finance capital costs
  - ✓ Some upfront payment would be useful

Developers: Investment Subsidies - 3

- Apply Results-Based Finance schemes carefully
  - ✓ Relying exclusively on final output makes it difficult to finance capital costs
  - ✓ Some “intermediate” results should be accepted as basis for payments.
- Avoid implicit subsidies via low-interest loans
  - ✓ Market-rate loans keep pressure to minimize capital costs
  - ✓ Market-rate loans allow development of commercial markets

Users: Affordability Subsidies - 1

- Financial sustainability required revenues to cover:
  - ✓ Operational costs
    - Likely to be low for renewable energy mini-grids
  - ✓ Debt service
  - ✓ Equity dividends
    - Above two are reduced by capital cost subsidies
    - Equity payments possibly reduced by “patient” capital
  - ✓ Depreciation
    - Essential to not forget this
  - ✓ Any taxes, license fees

Users: Affordability Subsidies - 2

- This calculation provides Average Revenue required,
  - ✓ AR = Total Revenue Required/ Expected kWh sales
- If this calculated AR seems too high, then consider:
  - ✓ Increasing capital cost subsidy and/or “patient” capital
  - ✓ Getting someone else to promote (additional) productive uses
    - Higher ability to pay
    - Daytime usage, which does not stress the system
- If nothing works, then scheme is not financially viable

Users: Affordability Subsidies - 3

- Tariff regulator should be flexible in not enforcing uniform national tariff
  - ✓ Politically and difficult to charge rural households more
- Special case of poorer households
  - ✓ Be sure to have separate subsidy fund to subsidize household connection costs
  - ✓ Some form of lower tariff, such as lifeline tariff
    - o Take account of this in Average Revenue calculations

Subsidy Providers - 1

- Total subsidy requirement must be affordable
  - ✓ For taxpayers, ratepayers and development partners
  - ✓ Determines how many mini-grids can be subsidized in a period of time
- Need for some type of exit policy
  - ✓ Over the years, need for subsidies should decline
    - o Greater availability of debt finance reduces need for subsidies in financial package
    - o Some expectation of cost reductions over time.