

Principles:
Subsidy Design for Private Sector Mini-grids



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Two key messages



- 1. Make sure that the financial package of subsidies, equity and debt is enough to finance the capital costs
 - ✓ Otherwise, private investment in mini-grids will not happen
- 2. Make sure that subsidy design and values take account of the financial needs/funds of investors, government+partners, and consumers.
 - ✓ Otherwise, the program is not financially sustainable.
 - ✓ There should be a taper/exit policy.

Mini-grid subsidy schemes have 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
- Essential to developing a big pipeline
 - ✓ Catalytic and risk-sharing – designed to cast wide net
 - ✓ Many subsidy recipients will finally not undertake projects
- Elements
 - ✓ General market and resource assessments
 - at no cost to developers
 - ✓ Pre-feasibility and feasibility studies
 - cost-shared - to be conducted with ‘approved firms’
 - ✓ Technical and financial information assistance
 - at no cost to developers at least in early years

Developers: Investment Subsidies -1



- Key need is to build a financing package that will:
 - ✓ Finance capital costs
 - ✓ Ensure adequate financial returns over lifetime
- Higher capital cost subsidies allow lower tariffs.
 - ✓ Generally, do not provide operational subsidies
 - ✓ Availability of funds uncertain over long periods of time

Developers: Investment Subsidies -2



- Subsidies can be reduced by development of debt and equity markets
 - ✓ Debt would be from local sources
 - Possibly provide partial guarantees
 - ✓ Equity may come even from external sources
 - Patient capital may be available
- 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.
- Try to avoid implicit subsidies via low-interest loans
 - ✓ Market-rate loans keep pressure to minimize capital costs
 - ✓ Market-rate loans allow development of commercial markets
 - ✓ Discussion item in breakout session

Users: Affordability Subsidies - 1



- User have to pay enough 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,
 - ✓ $AR = \text{Total Revenue Required} / \text{Expected kWh sales}$
- 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
 - ✓ No country has attracted private investment in mini-grids with such a tariff
- Special case of poorer households
 - ✓ Be sure to have separate subsidy fund to subsidize connection costs of poor households
 - ✓ Some form of lower tariff, such as lifeline tariff
 - Take account of this in total 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
 - Greater availability of debt finance reduces need for subsidies in financial package
 - Some expectation of cost reductions over time.