Session 15: An Energy Subsidy Clinic: How to Design and Improve Access Subsidies

Thursday, June 11, 2009

Subsidies typically reduce welfare by creating market distortions and GDP losses. A classic example are fuel subsidies and low "social" tariffs in developing countries which are meant to help the poor - but largely profit better-off users (because the poorest don't have access to grid power and use less fuel) and lead to inefficient use (by distorting the price signals). However, energy subsidies are often impossible to abolish (for political reasons) or needed to meet prominent government promises (such as the inclusion of remote regions) – and they can actually make economic sense in specific cases, for instance when they reduce existing market inefficiencies. Independently of their economic rationale, energy subsidies can be expected to remain a mainstay of public policy in the medium term.

Given the low access rates and low capacity to pay of unconnected users in SSA on the one hand, and the fact that the marginal costs of grid roll-out to rural areas increase with falling population density on the other hand, national electrification programs usually have to provide investment subsidies to make new connections affordable. Such access subsidies have a better potential to actually reach the poor than lifeline tariffs. However, many real-life electrification subsidies are unnecessarily ineffective and/or not efficient due to poor design. It is possible to (re)design them in a way that minimizes damage and maximizes performance.

However, literature provides not much advice on the pragmatic design of sound electrification subsidies in real life. Practitioners are often left alone with very general caveats (such as "subsidies should be sustainable and efficient"), or idealistic mantras (such as "all subsidies should be abolished right away") which are of little help in real-life contexts. Session 15 provides some practical answers to the question "How To Design Electrification Subsidies?"

The "Subsidy Matrix" was presented as a simple new tool for policy makers and practitioners in charge of designing or improving access subsidies (see Table One). The matrix approach applies a systematic process to identify all relevant options for the subsidy set-up in a given local context and compare their probable effects on subsidy performance. The basic idea is to visualize the causalities between (A) nine categories of "subsidy design variables" which policy makers can influence (Subsidy Objective; Funding; Institutional Setup; Recipient & Beneficiaries; Type; Selection Criteria &

Competition; Amount & Exit; Regulation; and Monitoring & Adjustments) and (B) seven "pragmatic subsidy performance criteria" (Effectiveness; Efficiency; Sustainability; Resilience; Private Sector Participation; Transparency; and Politics). The matrix can be used (i) in a step-by-step process to identify weaknesses of existing or planned subsidy mechanisms (the participants decided to immediately try out this process in an impromptu afternoon session with encouraging results - see Group Work Report 3.3.); (ii) as a training, decision-making or mediation tool for stakeholders of national electrification programs; and (iii) for the production of quantitative score cards to benchmark the performance of subsidy programs.

One lesson from working with the matrix is that not all performance indicators can be maximized at the same time. A quantitative performance analysis of existing Solar Home System subsidies (which applied the new matrix approach) illustrates this important finding: when maximum installation speed is the number one priority, for instance, one usually has to compromise on cost efficiency and social or regional fairness. Table Two summarizes the main correlations between subsidy design variables and performance indicators that were identified by this study.

Participants agreed that a well-designed competition mechanism is one of the most important – and challenging – elements of sound subsidy design in practice. In particular, the design of subsidy tenders (competition for the market) for electrification concessions and the new SHS Medium-Term Service Contracts designed for an output-based aid scheme in Bolivia (which combine the main advantages of concession approaches with those of market-based dealer models) met strong interest for the SSA context (maybe because most participants were from public sector entities responsible for electrification who know the challenges of efficient procurement from first-hand experience).

X: Subsidy Design Variables

Y(X): Subsidy Performance	Objective	Funding	Institutional Setup	Recipient & Beneficiary	Type	Selection Competition	Amount Timing Exit	Regulation	Monitoring & Adjustments
	economy; environment; security; social equity	tax; levy; windfall	government tiers; autonomous fund; multi-player fund; ESCROW; private agent; ...	private sector firm(s); household(s); communities; children etc.	by targeting method; direct/indirect; etc	selection: by fixed/variable economic/social/financial/political criteria etc.competition: for/in market, by project/yardstick	how much; sequencing; pase-out; ...	who regulates; tariff schemes mirror regulatory requirements; minimum quality of service/product/reporting etc.	who monitors output indicators; who evaluates impacts; baseline; M&E scheme cost; ...
Effectiveness Objective reached? Targeting? Scalability? Speed?									
Efficiency minimal distortion $/Output Admin Costs									
Sustainability (user/provider/market) economical financial ecological social									
Resilience simplicity, stability, flexibility, adjustability over time									
PSP FDI PSD									
Transparency monitorability predictability									
Politics visibility, constituency, votes (personal profits, power?) (fast disbursements?)									

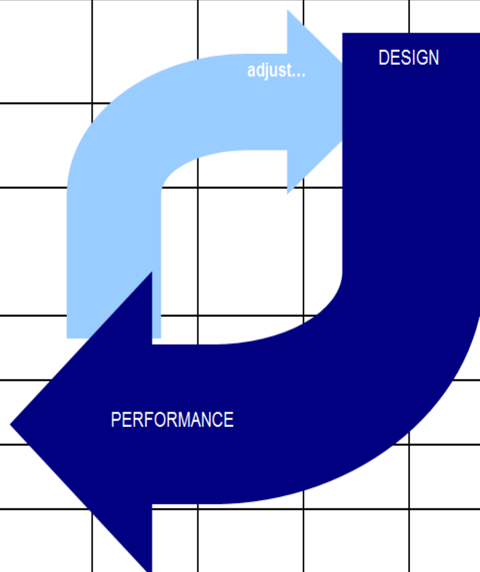

Table One: The new Energy Subsidy Matrix proposed by GTZ (Source: Presentations Reiche and Schweinfurth)

Subsidy Performance Indicators	→ SHS Design Issues to watch out for
1.a Effectiveness (program output)	*Local ownership*
	Supporting direct subsidies
	Provider recipients
1.b Effectiveness (implementation speed)	*End-user recipients*
	Shared ownership
2.a Efficiency (general**)**	*End-user recipients*
2.b Efficiency (cost-effectiveness)	*Mixed subsidies*
3. Sustainability (social)	*Supporting direct subsidies*
4. Resilience (adjustability)	*End-user recipients*

	Shared ownership
5.a PSP (PV provider)	*Sales model*
5.b PSP (financial intermediation)	*MFI credits*
	Service model
6. Transparency (general)	*Provider recipients*
	Local ownership

Table Two: Based on an analysis of real-life SHS Subsidy Programs, different design issues are of particular importance for each of the "pragmatic subsidy performance indicators" defined for the Matrix approach. There are trade-offs between those indicators: not all of them can be maximized at the same time.

Presentations

How to Design and improve Energy Subsidies. Kilian Reiche, World Bank Senior Consultant.

Tendering Subsidies for Electrification. Dana Rysankova, World Bank Senior Energy Specialist.

Evaluating the Performance of SHS Subsidies with a new "Subsidy Matrix". Arne Schweinfurth, iiDevelopment GmbH.