

Output-based aid in the Philippines Improving electricity supply on remote islands

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The Philippines has introduced an output-based aid (OBA) subsidy scheme to improve electricity supply on remote islands as a way to enhance living standards in the poor communities there. The subsidy, to come from a national fund financed by a surcharge on all electricity users, will be paid to private generators selected through competitive bidding, and disbursed on the basis of the energy they supply. These generators will take over from the government provider, entering into a supply agreement with the cooperatively owned distribution utility on each island. The competitive bidding process should ensure that the costs of supply, and thus the required subsidy, will be lower. That will allow subsidy funds to be used more efficiently, benefiting more communities. The quality of electricity service should also improve. The International Finance Corporation worked with the government to establish a framework ensuring delivery of electricity supply and transparency in subsidy payments. The first transaction, focusing on three pilot areas, has been successfully completed.

The Philippines has more than 85 million people, spread over some 7,100 islands. Most parts of the country, and all large municipal areas, have access to electricity, but around 8 percent of the country's 42,000 barangays (villages or neighborhoods) remained unserved in 2005. Roughly half of these are in remote rural areas. The government has set a goal of bringing electricity to all barangays by 2008.

The country's main (on-grid) electricity supply is through three major grids, with a total installed capacity of 16.8 gigawatts. For more remote islands, where connecting to a major grid is not viable, the Small Power Utility Group (SPUG), part of the state-owned National Power Corporation, generates electricity using small, isolated diesel plants. SPUG sells the power to local electricity cooperatives, which distribute it to member consumers. SPUG serves 74 islands with a total installed capacity of about 170 megawatts (MW). Its costs are inefficiently high, and its supply unreliable.

With the diseconomies of small-scale systems and high fuel and overhead costs, serving these remote islands is expensive. But fully recovering costs from the local population would be difficult. Annual per capita income in these areas is around \$450—less than \$2 a day and less than half the national average (\$1,170). Most families survive on subsistence fishing and farming.

The difference between SPUG's costs and its revenues has been covered in part by a subsidy funded from a surcharge on all electricity users in the country. The rest has traditionally been absorbed by the National Power Corporation, leading to financial difficulties.

These difficulties were mirrored by national electricity sector funding issues, spurring comprehensive sector reform. The Electric Power Industry Reform Act, passed in 2001, calls for a classic market reform: unbundling the sector vertically and horizontally, privatizing generation and transmission, creating a wholesale electricity market, and introducing retail competition. So far the government has made modest progress toward these ambitious goals.

The reform includes policies to improve electrification in rural areas, including most remote islands. These propose investment management contracts as a way of enabling underperforming electricity cooperatives to bring in private capital and management expertise. The policies also require opening SPUG-supplied areas to private generators, to be selected through competitive bidding, and inviting "qualified third party" providers (private or public) to supply electricity in unserved areas that local electricity cooperatives cannot supply. Importantly, all new

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providers would be allowed to recover the full cost of service from a combination of tariffs and output-based aid (OBA) subsidies.

Developing a framework

The International Finance Corporation (IFC) was appointed in early 2004 as transaction adviser for opening SPUG areas to private generators. Its initial focus was on developing a framework for rural electrification projects, including a model power supply agreement and regulatory guidelines to govern the transactions (figure 1).

Under the framework private generators would be selected through competitive bidding based on the lowest full-cost generation tariff. The bidding process would be technology and location neutral: bidders could propose the fuel and the location they believe would lead to the lowest-cost generation. A generator's obligations would be defined on the basis of a supply commitment, not a capacity commitment (often used in large-scale power purchase agreements). That means that the generator would be required to meet all the supply requirements (base, mid, and peak load) of the electricity cooperatives, installing sufficient capacity to do so.

The winning bidder would enter into a power supply agreement with each electricity cooperative to be served, placing a performance bond to backstop its obligation. The generator would be paid a subsidized tariff by the

electricity cooperatives (set by the Energy Regulatory Commission, or ERC) and a subsidy to cover the difference between the full-cost and subsidized tariffs.

Designing the subsidy

The gap between the full-cost and subsidized tariffs was expected to be large and unlikely to narrow in the near future. IFC suggested a transitional subsidy to cover the gap, one that would decline as tariffs gradually rise in line with customers' ability to pay. The ERC decided against using this approach initially, because it did not want to commit to automatic tariff increases. An ongoing consumption-type subsidy (in this case a production subsidy) was deemed most appropriate for the project areas.

Recognizing that the performance of electricity cooperatives would play a big part in achieving better service outcomes, the government targeted the best-performing ones when choosing areas for the OBA scheme. This approach ensures that the OBA subsidies will go to areas where electricity supply, not distribution, is the key problem. Some 45–70 percent of power outages in the target areas are attributable to problems and failures in generation, reflecting SPUG's poorly maintained and inadequate generation facilities.

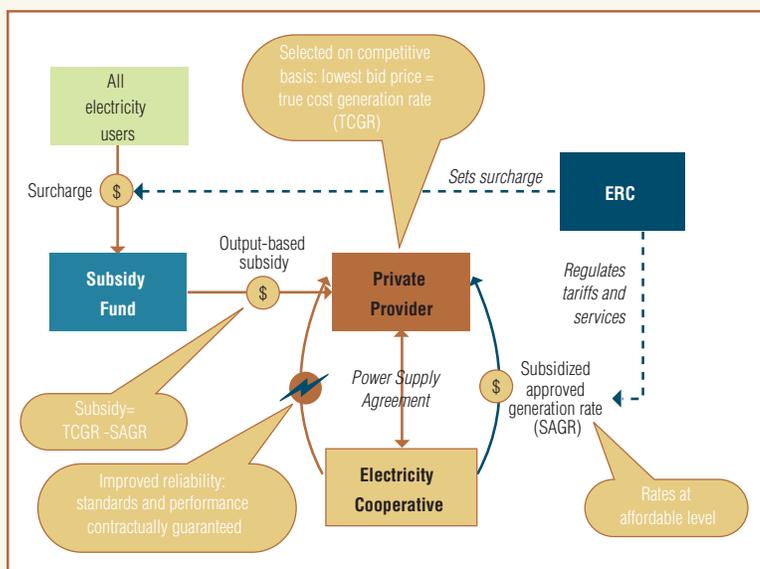
Addressing payment risks

The existing structure for administering subsidies involves three key entities: the ERC, SPUG, and the Power Sector Assets and Liabilities Management

Corporation (PSALM), which administers a fund for all subsidies collected through user charges. Under sector law only SPUG may petition for (and receive) payments from the PSALM-administered subsidy fund. IFC saw two key risks in this arrangement: First, a risk that SPUG would not pass on (or would delay) subsidy payments to private generators. Second, a risk that the funds collected would be less than expected—for example, if consumption fell short of projections or user payments were not collected or passed on.

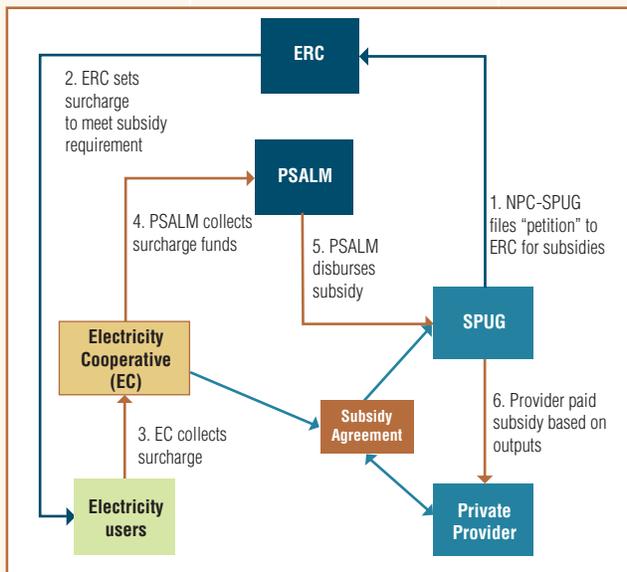
Knowing that these risks could deter interest among potential private generators or lead to higher electricity prices, the IFC team worked closely with PSALM, the Department of Energy, and SPUG to design a new process for administering subsidies. The process includes several mechanisms to mitigate the subsidy payment risks and meets the policy and administration concerns of each of the parties (figure 2).

Figure 1. Framework for rural electrification projects



Source: Castalia.

Figure 2. Process for administering subsidies



Source: Castalia.

This process is set out in a subsidy administration agreement to be signed by SPUG, the private generator, and the electricity cooperative in each area. Under this agreement SPUG commits to petitioning for a subsidy sufficient for both its own generation outputs and those of the private provider and to ensuring that the provider receives the subsidy for which it is eligible. Putting this process for subsidy payment into a contract increases its transparency and provides private generators with a guarantee.

Creating a regulatory regime

Before the project began, the Philippines had no regulatory framework for private generation in off-grid areas. The IFC team provided capacity building assistance to help the ERC develop regulatory guidelines for selecting and approving private generators. These guidelines call for a competitive bidding process to determine a “true cost” generation tariff for each area.

Before the guidelines could be officially endorsed, the public had to have a chance to provide input. A public awareness campaign was launched in the areas open to private participation to educate local stakeholders about the project, the power supply agreements they would need to sign with the private generators, and the changes in electricity supply standards they could expect. With support from the IFC team, the ERC held “consumer hours”—public hearings allowing communities to ask questions. Only after

considering consumer concerns did the ERC adopt the guidelines.

Implementing the framework

Having established the framework, the government faced the challenge of implementing it. Three of the 74 SPUG-supplied islands were selected to pilot the framework: Marinduque, Romblon, and Tablas. These islands, each served by a different electricity cooperative, have a total capacity requirement of 21 MW.

The bidding process was launched, aimed at selecting a single private generator to supply the three islands. Twenty-five developers and equipment suppliers registered their interest in the transaction, 17 Filipino-owned companies and 8 international. Five were renewable energy generators. From this group, three submitted financial proposals, which were required to offer a single tariff for all three areas.

Of the three bidders submitting proposals, one was disqualified on technical grounds, having submitted its proposal a few minutes past the deadline. The other two proposals, judged to be technically compliant, were evaluated on the basis of their proposed tariff. The winning bidder, a consortium of local energy and transport companies, offered a full-cost tariff of 7.17 pesos, or \$0.128 per kilowatt-hour (kWh). Its proposal envisaged a hybrid wind-diesel system, with about 30 percent of installed capacity provided by wind generation.¹

The outcome

Because the ERC-approved generation tariff for the three islands is \$0.10 per kWh, the winning bidder will receive a subsidy of \$0.028 per kWh once it begins to supply electricity. That implies a subsidy for the first year of around 23 percent of the provider’s total cost of generation, or \$2.8 million. With about 60,000 households connected to electricity service in these islands, the subsidy will amount to around \$50 per household a year, around 3 percent of annual household income.

Private generation is expected to lead to both big savings and big improvements in electricity supply (table 1). The private provider will supply power to the

¹ The winning bidder and the electricity cooperatives on the three islands have executed power supply agreements, and the conditions needed to make the agreements effective have been met. The parties are awaiting ERC approval, expected to be relatively straightforward.

Table 1. Key expected outcomes for the three pilot islands

Before transaction (SPUG)	After transaction (private provider)
<p>Poor reliability</p> <ul style="list-style-type: none"> • Power supply interruptions: 196 hours (8 full days) a month on average <p>Low capacity</p> <ul style="list-style-type: none"> • Dependable capacity: 15 MW (30% rented) • 26% of potential demand unserved <p>High cost</p> <ul style="list-style-type: none"> • Cost of generation: \$0.23 per kWh on average <p>High subsidy requirement</p> <ul style="list-style-type: none"> • Subsidy required in 2005: \$9.9 million 	<p>Good reliability</p> <ul style="list-style-type: none"> • Contractually and financially committed to supplying electricity 24 hours a day, 365 days a year <p>Sufficient capacity</p> <ul style="list-style-type: none"> • Dependable capacity: 24.7 MW • Reserve capacity for system reliability <p>Low cost</p> <ul style="list-style-type: none"> • Cost of generation: \$0.13 per kWh (including cost of larger capacity and environmental compliance) <p>Lower subsidy requirement</p> <ul style="list-style-type: none"> • Subsidy required in first year: \$2.8 million

electricity cooperatives at about half the cost of SPUG’s power, with contractual commitments to improve service quality and comply with environmental laws. The subsidized tariffs paid by the electricity cooperatives will not change, but the lower cost of supply will mean a sharply lower total subsidy. Initial estimates point to savings of around \$7 million in the first year. In addition, through a combination of generation tariffs and subsidy payments, the full cost of supply will now be covered. SPUG had been operating at a loss in these areas, threatening its sustainability.

The project does much to improve aid effectiveness. With SPUG supplying electricity on the three islands,

the implicit subsidy required has been \$0.13 per kWh (the difference between SPUG’s generation costs of \$0.23 per kWh and the approved tariff of \$0.10 per kWh). Moreover, SPUG has only 15 MW of dependable capacity on these islands, while the winning bidder offered 24.7 MW. Another way to look at the gain: before the OBA scheme \$1,000 of aid would have funded only 1.5 kW of capacity, while with the scheme, because of lower generation costs and better generation investments, \$1,000 would fund 8.82 kW of capacity.

Pleased with the success in the three pilot areas, the government recently started to prepare a second package of three more areas to be opened to private participation.

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