



Energising Development

Private Sector Participation in Micro-Hydro Power for Rural Development (PSP Hydro)

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Background

- PSP Hydro project is part of the global Dutch–German Energy Partnership ‘Energising Development’ (EnDev) which is implemented by GIZ
- PSP Hydro project is the first attempt in Rwanda to attract private commercial participation in micro-hydro power
- Duration: 2006-2012
- Status: 6 hydro sites currently supported
- *Objective:*
 - To develop private entrepreneurship for building and operating micro-hydro power plants and provide support in the creation of a conducive regulatory framework for the MHP sector



Project activities

Support to SMEs

- Business Plan Development
- Technical Engineering Assistance
- Financial support: co-funding of maximum 50% of total investment costs

Sector Development / Institutional Support

- Political support and institutional guidance
- Assistance and tutorage for sector consolidation
- Improve cooperation between stakeholders in the sector



Project activities II

Privatisation of MHP plants

- MININFRA is interested in privatisation of all publicly funded MHP plants below 2.500kW
 - Community managed plants not working efficiently
 - EWSA not interested in management of smaller plants
- PSP hydro study: 'Privatisation of the Management of Existing Micro Hydro Power Plants: Feasibility analysis and strategy'
- Audits of first pilot sites conducted by PSP Hydro:

Name	Sponsor	Connection	Capacity (kW)
Agatobwe	GoR, UNIDO	Off-grid	200
Mutobo	GoR, UNIDO	Off-grid	200
Nyamotsi I	GoR, UNIDO	Off-grid	100
Nyamotsi II	GoR, UNIDO	Off-grid	100
Rugezi	GoR	On-grid	2.200



Project Cycle: Financing Mechanism

EnDev grant: 50%

Equity: 15%

Loan: 35%



Project Cycle: Tendering

- **Stage 1:** Submission of expression of interest by the developers including
 - Detailed description of the site to be developed
 - Preliminary MoU with district authorities
 - Estimation of customer potential
 - References of project developers
 - Proof of equity

- ➔ Evaluation of proposals by PSP Hydro and award of grant of € 5000 for complete business plan development

- **Stage 2:** Submission of complete business plan and obtaining of financial closure



Project Cycle: Tendering II

- Call for proposals from private sector in 2005, 2007 and 2009

	Submitted	Improved	Selected	Contracted	Ongoing
2005: Call 1	> 20	15	6	4	2
2007: Call 2	5	3	2	1	1
2009: Call 3	10	8 (+ 2)*	3	3	2

* Old sites from Call 1



Current Status of PSP Hydro Projects

Company	Direct PSP support		Indirect support / spin-offs		Total
	Site	kW	Site	kW	kW
ENNY	Mazimeru	500	Maruruma Rukarara 2	150 1985	2635
CALIMAX	Gasumo	80	Rubagabaga Yungwe	314 100	494
SOGEMR	Musarara	438	Mukungwa 3 Giciye 2 + 5 others	2000 4500 1000	7938
REGREPOWER	Kavumu	285	Mukungwa 4 Mugambazi Nshili 2 Umunywanzuki	916.4 439.5 480.7 556	2677.6
RED	Mashyiga	140			140
REPRO	Murunda	96	n.a	1000	1096
TOTAL		1,539		13,441	14,980



Achievements

- Completion of the first privately owned and operated micro hydro power plant in Rwanda
- First wheeling arrangement (MHP, tea factory) in Rwanda completed soon
- 2 additional MHPPs expected to be completed by early 2012
- Guidance and support in the establishment of a regulatory framework has led to:
 - Process for license from regulator established
 - Establishment of standardized PPAs
 - Existence of environmental regulations
 - Establishment of a set feed-in price
- Rwandan banks have given first commercial loans to MHP projects
- Privatization of publicly owned MHPPs has been initiated



Challenges

- No defined political and legal framework at the beginning
 - General feed-in and wheeling tariffs still not officially declared
- Lack of own funds and collateral
- Low capacities (managerial capacities as well as technical and financial knowledge) of the local developers leading to delays and increases in costs
- Limited local expertise for analysis, design and construction of such projects
- Very high cost per kW installed
- Grid extension plans are not coordinated with private developers
- Too demanding conditions of local banks for loans



Outlook

Pending Challenges will have to be addressed by:

- Trying to work with regional experts
- Consolidating existing companies within the MHP sector
- Setting of appropriate incentives for private participation
 - Official declaration of feed-in tariff and wheeling tariffs
 - Definition of national guidelines for the support to MHP