

# **VILLAGE HYDRO DEVELOPMENT IN SRI LANKA**

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# **Village Hydro Project Selection Criteria**

- **SITUATED FAR AWAY FROM NATIONAL GRID**
- **NO GRID EXTENSION PLANS OF CEB**
- **UNECONOMICAL FOR CEB TO EXTEND NATIONAL GRID TO VILLAGE**
- **HAS SITE WITH PERENNIAL WATERWAY WITH STEEP GRADIENT**

# Project Developer

- A society formed by the householders expected to receive power from the project.

# Limitations of a Village Hydro Project.

- Available quantity of water in the the stream and the available head
- The number of households that expect to obtain power from the project.
- The location of the houses in the village in relation to the power house.
- The ability of villagers to make adequate equity contribution and loan repayments.
- Restrictions on the types of electrical appliances that could be used.
- Restrictions on the times of the day during which certain equipment can be used

# Sri Lankan Experience

- ITDG played pioneering role and developed a number of hydro projects selected by them and financed through donor funding.
- With the inception of the Sri Lanka Energy Services Delivery Project the industry was made wide open to any consultants.
- During the early periods of the ESD project , marketing of VH projects was a real uphill task.
- Social mobilization, formulation of ECS, obtaining various statutory approvals were all difficult tasks.
- Convincing PCIs of the creditworthiness of the ECS

# **Key Steps followed by us in setting up of a VH project.**

- Identification of a site.
- Checking CEB grid extension plans.
- Taking measurements and assessing the technical feasibility of the project
- Social Mobilisation and formulation of ECS
- Assessment of Socio economic status of the area.
- Registration of ECS and obtaining statutory government approvals and environmental clearances
- Preparation of Technical Design
- Preparation of complete technical & financial feasibility study

## **Key Steps followed by us in setting up of a VH project.(Cont)**

- Preparation of business plan with ECS leaders.
- Facilitating discussion between bank and ECS.
- Helping in bank loan documentation .
- Guiding the ECS in construction of civil works , procurement and installation of equipment.
- Monitoring the commissioning of plant.
- Assist ECS in obtaining GEF grant and guiding ECS in starting repayment of bank loan.

# Key Actors in Public Private Sector Participation

Stakeholder	Key actors	Role
GOSL/ Implementing Agency	Administration Unit(ESDP/ RERED )	Provided funds to the Participating Credit Institutions, set up procedures to ensure adherence to specified standards
Provincial Government	Provincial Ministry of Power	Some provincial councils subsidized some of the projects.
Local Govt	1.Divisional Secretariat 2. Pradesiya Sabha	1. Approval for using the waterway 2 Registration of Society 3. Approval for setting up project in its area of authority
Ministry of Environmental Affairs	Central Environmental Authority	Approval for project with minimum environmental impact.



# Key Actors in Public Private Sector Participation(Contd)

<b>Stakeholder</b>	<b>Key actors</b>	<b>Role</b>
Banking Sector	Participating Credit Institution	All bank loan related activities
Private sector	1.Project Developer  2.Material /equipment supply companies  3.Electro-mechanical equipment supplier	All Project Preparation Assistance works.  Supply of pipes, wires and other construction materials. Supply and installation of electro mechanical equipment.  Provide after sales services for maintenance of the power plant
Community	Participants	Contributed equity funds, obtained loan under ESDP from PCI, and manages loan repayment.

# Barrier Elimination

## Institutional Barriers

<b>Barrier</b>	<b>Measures taken to Overcome</b>
Lack of government institutional base to promote VH projects.	Other than the government supported ESD / RERED project there is no governmental institutional base to promote renewable energy options.
Difficulties in obtaining registration and statutory approvals.	This was a major problem at the beginning. With ESDP promoted and ITDG conducted awareness programmes, it became easier, But of late its again becoming more difficult.
Lack of information on the CEB grid extension plans.	It is a major problem in selecting suitable sites.

## Institutional Barriers (Contd)

<b>Barrier</b>	<b>Measures taken to Overcome</b>
Poor information availability for the general public on village hydro project.	ESDP conducted some promotional campaign such as “GAMATA LIGHT” (lights for the village), which seem to be reaching the real end users quite effectively.
Poor awareness of village hydro by political authorities	With the new awareness campaigns of ESDP and the efforts of ITDG, provincial politicians seem to be awakening to the realization that decentralized renewable energy options could help their constituents.

# Policy Barriers

<b>Barrier</b>	<b>Measures taken to Overcome</b>
Lack of renewable energy development policy	Under the ESD project a study has been carried out for making recommendations on this issue to the government of Sri Lanka
Lack of regular renewable energy planning	This situation remains unchanged.
Lack of an institutional framework to deal with issues related to renewable energy development	AU of ESDP/RERED helps in some measures on this, within its terms of reference.

# Technical Barriers

<b>Barrier</b>	<b>Measures taken to Overcome</b>
Lack of systematic resource potential assessment	The ESDP commissioned a study to identify and document probable sites.
Lack of technical know-how in rural areas to access and develop projects.	Originally ITDG has conducted training and other capacity building programmes for VH engineers and technicians. ESD has commissioned a number of programmes for capacity building. Still there is a shortage of VH engineers and technicians.

# Technical Barriers (Contd)

<b>Barrier</b>	<b>Measures taken to Overcome</b>
Lack of standards and specifications leading to quality fluctuations	With the active involvement of CEB, ESDP has drafted an acceptable Technical Specification for the VH industry which has to be followed by projects receiving assistance under the ESD Project.
Limitation of power availability	Sometimes this is true due to site constrains but most villagers are satisfied .

# Financial Barriers

<b>Barrier</b>	<b>Measures taken to Overcome</b>
Poor affordability due to high cost of technologies	Was considered a big impediment before ESDP. But with subsidies under ESDP the problem has eased. Provincial Council grants helps.
Low incomes in the rural areas	Through socio economic surveys, we find that the cost of various forms of energy now being used by villagers is not much lower than the bank loan installment they have to pay after obtaining a loan under ESDP.