SMALL HYDROPOWER – SUCCESS & RISK FACTORS

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Outline

➢ Small Hydropower Success Factors
➢ Some examples
➢ Conclusions
➢ Questions
Small Hydropower – Key Factors

Success and risk factors - broadly categorized into:

• Technical
• Financial
• Social
• Legal / Political
• Organisational
Success and Risk Factors

- Success and risk factors - two sides of the same coin
- Can be pre or post installation
- Risks cannot be completely eliminated, but can be reduced
- Factors presented here not an exhaustive list
- Participants will be familiar with many of them and can contribute to this list
Technical Factors

- Resource assessment
- Resource Quality
- Site location
- Skilled Manpower
- Infrastructure
- Local repair / maintenance facilities
- Capacity Factor (Load Factor)
Example

• Micronesia – in the Pacific
• 2MW (2 turbines), run of river
• Resource assessment flaw
• Insufficient flow
• Now almost defunct
Financial Factors

- Tariff / Ability to pay
- Investment availability
- Financial Viability (cost/benefit)
- Subsidies (is a political factor too)
- Willingness to pay (is a social factor too)
- Cost of energy
- End Uses
• Examples in the UK
• Many of the schemes are low head – inherently higher cost / kW
• Almost all the SHPs are grid connected
• Many use existing infrastructure such as an old mill
Social Factors

Mostly applicable to community based schemes

- Awareness of the project
- Willingness to pay
- Feeling of ownership
- Community participation
- Alternative use of water
Example

• Ghandruk 50kW micro hydro scheme in Nepal
• Example of Social and Financial Success Factors
• Community mobilization – other community projects such as nature conservation already in place
• Steady income source from tourism
Organisational Factors

- Ownership structures
- Management Capacity
- Revenue Collection
- Community mobilization
- Capacity Building
- Demand Assessment
Legal / Political Factors

• Environmental impact requirements
• Subsidies and incentives such as tax breaks
• Feed in Tariff
• Insurance schemes
• Political Influence
• Organisation registration
Conclusions

- Several Factors affect the success or failure of an SHP scheme
- Experience shows Organisational and Social factors are equally, if not more, important
- Efforts should be made to maximize success and minimize risk
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Thank you
merci beaucoup

- Questions, Clarifications & Contributions