

Guide for Sustainable Small-Scale Hydropower Projects

Purpose of this Guide

This guide, developed by the IEA Hydro, provides information on sustainability of small-scale hydropower projects. By using this guide, planners, operating officers and decision makers for small-scale hydropower projects can search and refer to relevant information on about 290 effective measures for economic and social sustainability derived from 23 existing projects in 10 countries globally. Such information will help the user verify and improve the sustainability of their own projects.

Structure and How to Use this Guide

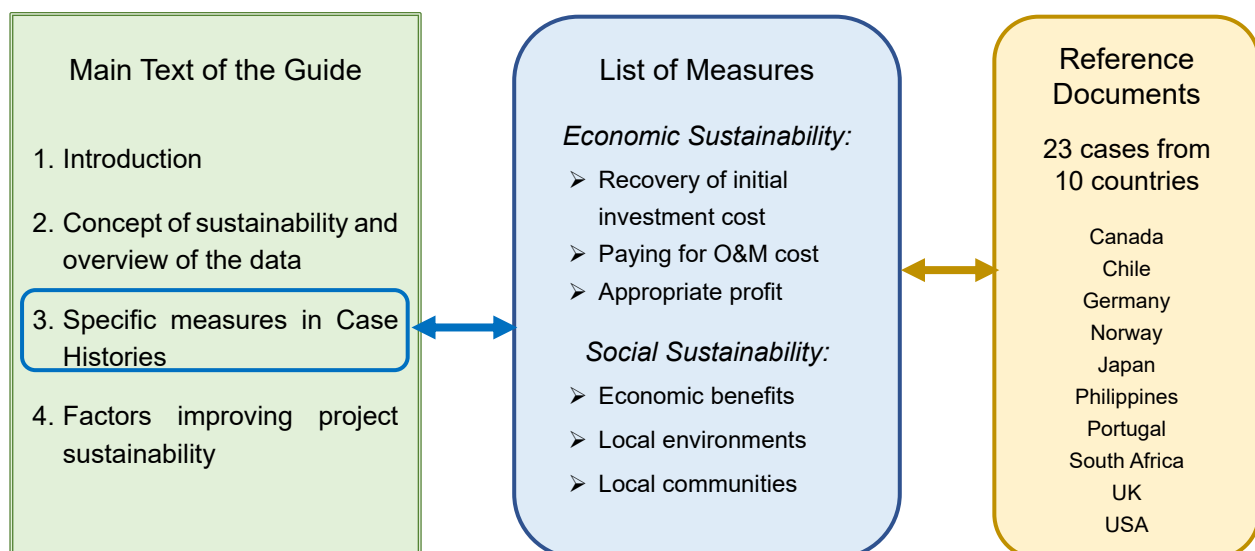
This guide is an interactive e-book consisting of the main text and reference documents.

Chapters 1 and 2 of the main text present basic information on the use of this guide.

In Chapter 3 the user can systematically search for specific measures related to sustainability, as described in the case history documents.

Chapter 4 documents success factors of the measures and topics considered in each stage of the projects that have been successfully implemented.

The 23 case histories from 10 countries are included as reference documents.



How to Obtain the Guide

This guide can be downloaded from the IEA Hydro website: www.ieahydro.org

List of Representative Measures for Sustainability in this Guide

Examples of effective measures implemented and established in projects, and original and innovative measures that can improve project sustainability are listed below.

● Economic Sustainability

Purpose	Measures	Effect of Measures
Recovery of initial investment cost	Utilization of investment grants	Reduction of self-payment for investment
	Joint investment	Reduction of self-payment for investment, risk diversification
	Introduction of innovative technologies	Reduction of construction cost
	Utilization of existing facilities	Reduction of construction cost
Paying for O&M cost and gaining appropriate profit	Utilization of incentive schemes	Securing stable income
	Long term power purchase agreement	Securing stable income
	Optimization of power plant operation	Maximizing revenue from power sales
	Long term equipment lease contract	Reduction of maintenance cost

● Social Sustainability

Purpose	Measures	Effect of Measures
Economic benefits	Local industrial development through tourism, forestry, enterprise attraction, new hydro projects, etc.	Positive effects on local economy
	Creation of employment opportunities for power plant maintenance, tourism development, etc.	Positive effects on local economy
	Sharing benefits with local communities	Improvement of social acceptance
Contribution to local environments	Improvement of roads, water channels, surrounding area of dam, etc.	Improvement of social infrastructure for local communities
	Securing emergency power supply, installation of fire prevention facilities	Improvement of disaster prevention functions
	Preservation of forests, rivers, reservoirs, fish, wildlife and ecological flow release	Harmonization of power plant with natural environment
	Preservation of landscape, history, culture and indigenous society	Harmonization of power plant with social environment
Contribution to local communities	Development of local resources such as unused renewable energy, tourism, water resources, recreational opportunities and local brands	Revitalizing regional activities
	Education, training and human resources development	Revitalizing regional activities
	Promotion of inter-regional human exchange	Revitalizing regional activities