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Designing And Building Mini And Micro Hydro Power Schemes: A Practical Guide



Synopsis

Small hydro power installations have the potential to provide a renewable supply of energy to people in remote, hilly communities, far from the national grid. This book is based on the authors' considerable experience of installing hydroelectric schemes that produce up to 500 kW for powering small communities. This book describes not only the electro-mechanical equipment and how it is installed, but also the correct siting of the installation and how to design and build the channels leading up to the turbine so as to optimize performance. These civil works can be carried out by local manpower, using materials that are usually available locally. Chapters cover the main components of small hydroelectric plants from the intake and the headrace channel, via the conveyance channel, to the forebay tank, penstock, turbine, and generator.

Book Information

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Customer Reviews

"The power of water hasn't caught on in the national level, but can be invaluable to certain communities. Designing and Building Mini and Micro Hydropower Schemes: A Practical Guide is a collection of advice for those who are pursuing this sort of power for their community. Ideal for remote communities that are far from the traditional power of the modern day, these works can provide enough power for small communities, with materials and manpower that can be acquired locally. Ideal for anyone who is in charge of managing public works for their community, Designing and Building Mini and Micro Hydropower Schemes is a vital addition to any engineering or power

management collection." (Midwest Book Review)"This books' strength is that it is based on years of experience out in the field of designing micro hydro systems that work." (Dr. Arthur Williams, School of Electrical Electronic Engineering)

Luis RodriguezTeodoro Sanchez is an Energy Technology Adviser for Practical Action and has been working on rural energy, rural electrification and development activities since 1978, with experience in Latin America, Asia, and Africa. He has co-authored various books and published articles and has been part of and/or lead several consultancy work activities for organizations such as the World Bank, UNDP, Inter American Development Bank, and the EU. He is presently carrying out PhD research work at Nottingham Trent University, UK.

I was pleasantly suprised by the quality of this book. The chapters are logically organized and provide a bounty of tables, charts and diaghrams. Chapters are generally arranged by individual system components including intake, headrace channel, penstock, electromechanical equipment, powerhouse building, tailrace channel and commissioning & staff training, among others. Each chapter consists of an introduction to the component, design discussion, construction procedures and technical specifications relating to the specific component. Example calculations are included as appropriate. Overall, this was a very good book.

Clearly written, the book goes into a great detail about site evaluation, hydraulics and the civil works associated with small hydro like the intake, penstock, powerhouse building, etc. Many diagrams and examples.

Good read if you're planning to build a microhydro or picohydro system.

Great book, a little heady for me. Very technical.

Turned out to be more useful that i was expecting! Really helping me design and build my own 600w kaplan system

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