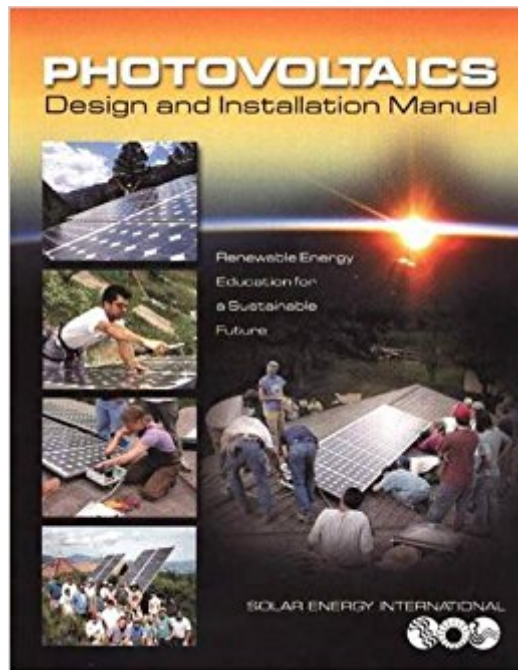




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# Photovoltaics: Design And Installation Manual



## Synopsis

Producing electricity from the sun using photovoltaic (PV) systems has become a major industry worldwide. But designing, installing and maintaining such systems requires knowledge and training, and there have been few easily accessible, comprehensive guides to the subject. Now, with *Photovoltaics: Design and Installation Manual*, a world-class solar energy training and education provider—Solar Energy International (SEI)—has made available the critical information to successfully design, install and maintain PV systems. The book contains an overview of photovoltaic electricity and a detailed description of PV system components, including PV modules, batteries, controllers and inverters. It also includes chapters on sizing photovoltaic systems, analyzing sites and installing PV systems, as well as detailed appendices on PV system maintenance, troubleshooting and solar insolation data for over 300 sites around the world. Used worldwide as the textbook in SEI's PV Design & Installation workshops, topics covered include: The basics of solar electricity PV applications and system components Solar site analysis and mounting Stand-alone and PV/generator hybrid system sizing Utility-interactive PV systems Component specification, system costs and economics Case studies and safety issues *Photovoltaics* guarantees that those wanting to learn the skills of tapping the sun's energy can do so with confidence. Solar Energy International (SEI) has the nonprofit mission to respond to the need for renewable energy education. Based in Carbondale, Colorado, and active around the world, SEI is a link between people and renewable energy resources, providing information, education and training to people who want to shape a sustainable future. SEI is recognized by the National Board of Certified Energy Practitioners (NABCEP) as dedicated independent provider of PV training programs that may be used toward attaining PV certification. Also, SEI is recognized as an Accredited Institution to offer PV training by the Institute for Sustainable Power (ISP).

## Book Information

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## Customer Reviews

Producing electricity from the sun using photovoltaic (PV) systems has become a major industry worldwide. But designing, installing and maintaining such systems requires knowledge and training, and there have been few easily accessible, comprehensive guides to the subject. Now, with *Photovoltaics: Design and Installation Manual*, a world-class solar energy training and education provider-Solar Energy International (SEI)-has made available the critical information to successfully design, install and maintain PV systems. The book contains an overview of photovoltaic electricity and a detailed description of PV system components, including PV modules, batteries, controllers and inverters. It also includes chapters on sizing photovoltaic systems, analyzing sites and installing PV systems, as well as detailed appendices on PV system maintenance, troubleshooting and solar insolation data for over 300 sites around the world. Used worldwide as the textbook in SEI's PV Design & Installation workshops, topics covered include: The basics of solar electricity PV applications and system components Solar site analysis and mounting Stand-alone and PV/Generator hybrid system sizing Utility-Interactive PV systems Component specification, system costs and economics Case studies and safety issues *Photovoltaics* guarantees that those wanting to learn the skills of tapping the sun's energy can do so with confidence.

Solar Energy International (SEI), from Carbondale, CO, is a non-profit that trains adults and youth in renewable energy and environmental building technologies. Since 1991, SEI has taught thousands of individuals from 12 US states and around the world, pioneering a hands-on approach acknowledged as the benchmark for renewable energy education and training. SEI staff are avid solar enthusiasts with decades of experience in passive solar design & construction, solar hot water, wind and micro-hydro power, solar cooking, and natural house building.

This book is made well, it falls short in information but the idea and the language of understanding how alternative power works is all here. I recommend you to get it, if you are taking a class on this field, great book to have. In it you will have schematics and you will learn the inner workings of

Photovoltaic Systems, this is an exciting futuristic field in the making, and every one needs to learn more about it. My Heart goes out to the people of Japan but the circumstances they find themselves with the Nuclear Power Plant burning down offers a good example for alternative power. Nikolai Tesla started a revolution of discovery and in his memory we must continue on the quest to find alternative, renewable energy. Photovoltaic = Solar Power Energy and beyond.

Pros: Great for Beginners, Good for Intermediate. Cons: Not as in Depth for those that know about Photovoltaics. Used this book for a Solar and Wind Energy course I took. This is a good book for those just getting into Solar/Wind or those that have some limited knowledge of Solar/Wind. I would recommend this book for those seeking to do Solar/Wind themselves; however, I do not recommend those with little to no knowledge installing/hooks up their own Solar/Wind devices, installations, and/or sets.

Good content. Beyond an introduction. Not TOO technical, but not a casual read either. Good for somebody planning out a system.

This book gives a decent synopsis of most PV design concepts. It even gives a lot of great examples for the design steps. There are a few omissions that I would have liked to see: use of multiple inverters, use of combiner boxes, more guidance on electrical disconnect locations and options for tying into an AC service / grid. Bottom line, if you're really doing a full solar design using this book, you should already be an electrician with a good knowledge of code requirements for disconnects and how to tie in your system to the building. This book will not be sufficient for every electrical part of the design.

Got what was expected. Book delivery time needs improvement.

In many of the "Official Solar" websites, this is "THE" most recommended book on solar, and probably it was "The Book" for years while this science was still pretty new. It is a good book, it has a lot of useful tables and general info, and does offer many good suggestions and recommendations. If you buy this book, and are pretty new in this field, this will be helpful to you. Though all the above is true, this book is quite over priced for what you get, but as with nearly all text books and manuals for use type of stuff, you do tend to get ripped on cost a bit. It should be no more than a \$25 book.....however that may be.... This book is probably still going to be the

"standard" upon which most other non-engineering level books are measured by for some time. Though overpriced (IMHO), you will not regret having used this book. I have read it through more than twice, and the author has a good way of expressing the info so nearly anyone can understand it: good man! enjoy.

good book, short read for being a installation manual, read from front to back in 9 hours. I did like the layout, but this is a base application book assuming you have no knowledge in almost any electronics. I am a computer science expert so DC current is easy for me, what gets me is this is a book assuming you are going to buy all the individual components and put them together as per individual manuals...I wanted a book with a break down of how to make my own components, ie. Lightning arrestors, charge controllers, or water heater collectors...this has none of that, this assumes you will buy the better quality components from somewhere else, and does not tell you the best ones to buy, for some lawsuit things....anyway a good read, very on target... worth 30\$\$\$will

This manual and the SEI workshops date back to the days before Grid-tie was the norm. Even though the text has been updated through the years, it still has a distinctly off-grid focus. Still, if you want to know a little something about battery banks it's a very good read and pretty thorough. James Dunlop's book (Photovoltaic Systems) is far superior and a must have for anyone who really wants to understand this field and technology. The discussion of wire-sizing in the SEI text needs to be updated and is largely misleading for most modern systems using string fuses.

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