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Slobodan Petrovic

Renewable Energy in Cuba

Overview, Tutorial, and
Recommendations

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Preface

This book examines the energy system in Cuba and is intended to serve as a quick reference guide for anyone who wishes to learn about the topic from a concise source. The main motivation behind this book is to offer an unbiased opinion about the energy shift in Cuba, contribute to the relevant experience about renewable energy sources, and offer encouragement for the plan to increase their contribution. The analysis leads to an understanding of Cuba's energy generation, use, distribution, transmission, and future plans. Cuba's energy system is a unique example in the world of a system that is not only geographically isolated from neighboring countries as an island, but also has been geopolitically sequestered for nearly six decades. As such, Cuba's energy system is an interesting case study of a self-developed system.

The book originated from the author's experience teaching renewable energy engineering for more than 20 years. While the main components of an energy education include gaining knowledge, techniques, skills, and tools of a discipline to solve technical problems, learning about diversity and contemporary professional, societal, and global issues is also important. In my years of teaching, I have discovered that the analytical rigor of teaching about designing systems, using the appropriate math, and conducting and analyzing experiments, lacks the vitality of applying that knowledge to contemporary issues and placing the acquired knowledge in the context of practical global topics. As a result, the engineering students in the program have been involved in studies of energy systems across the world. Cuba's energy system has emerged as an interesting example of a system characterized by sequestration, heavy reliance on fossil fuels, and a fragile electrical grid prone to resilience problems, but a system with significant potential in renewable energy to achieve self-sufficiency in the future.

While conducting the analysis of Cuba's energy system, it became apparent that the text would gain significance and multi-level relevance by blending the analysis of the country's energy system and its potential for renewable energy, with embedded tutorials for each energy generation and storage method. The book will appeal to a diverse readership, including those with a reasonable level of understanding of renewable energy and those wishing to learn the fundamentals of energy generation, storage, and specifically about renewable energy sources. Hence, the text is an