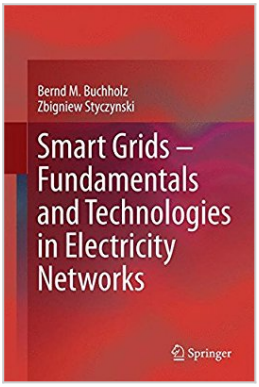

Smart Grids – Fundamentals and Technologies in Electricity Networks

By Bernd M. Buchholz, Zbigniew Styczynski

Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski

Efficient transmission and distribution of electricity is a fundamental requirement for sustainable development and prosperity. The world is facing great challenges regarding the reliable grid integration of renewable energy sources in the 21st century. The electric power systems of the future require fundamental innovations and enhancements to meet these challenges. The European Union's "Smart Grid" vision provides a first overview of the appropriate deep-paradigm changes in the transmission, distribution and supply of electricity.

The book brings together common themes beginning with Smart Grids and the characteristics of new power plants based on renewable energy and /or highly efficient generation principles. It covers the advanced technologies applied today in the transmission and distribution networks and innovative solutions for maintaining today's high power quality under the challenging conditions of large-scale shares of volatile renewable energy sources in the annual energy balance. Besides considering the new primary and secondary technology solutions and control facilities for the transmission and distribution networks, prospective market conditions allowing network operators and the network users to gain benefits are also discussed. The growing role of information and communication technologies is investigated. The importance of new standards is underlined and the current international efforts in developing a consistent set of standards are described in

detail. The presentation of international experiences to apply novel Smart Grid solutions to the practice of network operation concludes this book.

The authors of the book worked for many years to develop Smart Grid solutions within national and international projects and to introduce them in the practice of network operations.

Smart Grids – Fundamentals and Technologies in Electricity Networks

By Bernd M. Buchholz, Zbigniew Styczynski

Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski

Efficient transmission and distribution of electricity is a fundamental requirement for sustainable development and prosperity. The world is facing great challenges regarding the reliable grid integration of renewable energy sources in the 21st century. The electric power systems of the future require fundamental innovations and enhancements to meet these challenges. The European Union's "Smart Grid" vision provides a first overview of the appropriate deep-paradigm changes in the transmission, distribution and supply of electricity.

The book brings together common themes beginning with Smart Grids and the characteristics of new power plants based on renewable energy and /or highly efficient generation principles. It covers the advanced technologies applied today in the transmission and distribution networks and innovative solutions for maintaining today's high power quality under the challenging conditions of large-scale shares of volatile renewable energy sources in the annual energy balance. Besides considering the new primary and secondary technology solutions and control facilities for the transmission and distribution networks, prospective market conditions allowing network operators and the network users to gain benefits are also discussed. The growing role of information and communication technologies is investigated. The importance of new standards is underlined and the current international efforts in developing a consistent set of standards are described in

detail. The presentation of international experiences to apply novel Smart Grid solutions to the practice of network operation concludes this book.

The authors of the book worked for many years to develop Smart Grid solutions within national and international projects and to introduce them in the practice of network operations.

Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski Bibliography

- Sales Rank: #3227776 in Books
- Published on: 2014-02-26
- Original language: English
- Number of items: 1
- Dimensions: 9.30" h x 1.14" w x 6.44" l, 1.58 pounds
- Binding: Hardcover
- 396 pages

Editorial Review

Review

"This book is a great introduction to the developing smart grids; it clearly presents the issues, challenges, and emerging solutions induced by the electric networks of the future." (Benoit Robyns, Energy Technology, Vol. 3 (2), February, 2015)

From the Back Cover
Efficient transmission and distribution of electricity is a fundamental requirement for sustainable development and prosperity. The world is facing great challenges regarding the reliable grid integration of renewable energy sources in the 21st century. The electric power systems of the future require fundamental innovations and enhancements to meet these challenges. The European Union's "Smart Grid" vision provides a first overview of the appropriate deep-paradigm changes in the transmission, distribution and supply of electricity.
The book brings together common themes beginning with Smart Grids and the characteristics of new power plants based on renewable energy and /or highly efficient generation principles. It covers the advanced technologies applied today in the transmission and distribution networks and innovative solutions for maintaining today's high power quality under the challenging conditions of large-scale shares of volatile renewable energy sources in the annual energy balance. Besides considering the new primary and secondary technology solutions and control facilities for the transmission and distribution networks, prospective market conditions allowing network operators and the network users to gain benefits are also discussed. The growing role of information and communication technologies is investigated. The importance of new standards is underlined and the current international efforts in developing a consistent set of standards are described in detail. The presentation of international experiences to apply novel Smart Grid solutions to the practice of network operation concludes this book.
The authors of the book worked for many years to develop Smart Grid solutions within national and international projects and to introduce them in the practice of network operations.

About the Author

Dr. Bernd Michael Buchholz received his MS and PhD at the Power Engineering Institute/ Technical University in Moscow in 1973 and 1976, respectively. From 1975 to 1989 he worked at the Institute of Energy Supply in Dresden, Germany. First time, he worked in the department „Network Planning". He became department manager „Network Automation" in 1981 and director in 1987. From 1990 to 2006 he worked at Siemens AG, the first ten years as the vice president and development manager of the division „Power Automation". Between 2000 and 2005 he was president of the business unit "Network Analysis & Consulting" in Erlangen (D) which was extended by the integration of the American company PTI in 2005 into "Power Technologies International" with locations in Erlangen (D), Schenectady (USA), Manchester (UK) and worldwide centers of competence. Between 1995 and 2000 he was also editor of the communication standard IEC 61850, parts 4 (System management) and 7-4 (Data models). He was the German member of CIGRE SC C6 between 2002 and 2008 and from 2004 to 2009 he was an executive member of the European Advisory Council "Smart Grids". He retired from Siemens in 2006 but remains active as chief consultant at NTB Techno service. He is an active member of the German Power Engineering (ETG/ VDE) Society and was the task force leader of „Smart Distribution" (2008) and „Active Energy

Networks“ (2013). Since 2010 he has acted as the technical and strategic advisor of the European Lightho

use Project, Web2Energy. Furthermore, he was the technical consultant for the German E- Energy projects “RegModHarz” and “Harz.EE-Mobility”. He is a guest lecturer at the Otto-von-Guericke University of Magdeburg, at the Technical college in Salzburg and within the professional education program of VDE. He is the author of 180 international publications in 6 languages and has been honored by CIGRE (twice), IEEE and VDE for his outstanding

scientific engagement.

Prof. Dr. Zbigniew Antoni Styczynski received his PhD in electrical engineering in 1977 and finished his professorial dissertation at the Wroclaw University of Technology (Poland) in 1985. He was at the University of Stuttgart for 8 years and since 1999 he has been professor for electric power network and renewable energy at Otto-von-Guericke University in Magdeburg, Germany. He was the Dean of the Faculty from2002-2006. In 2006 he was elected President of the Centre for Renewable Energy Saxony-Anhalt e.V. and in 2008 he became Executive Director of the Institute of Electric Power Systems at the Otto-von-Guericke University. Since 2002 he has also been a member of the senate at this University. He is a co-founder and scientific coordinator of the joint Fraunhofer IFF/ Otto-von-Guericke University Competence Centre of Power Systems and Renewable Energies and founder and director of the Steinbeis Foundation Transfer Centre ENRE in Magdeburg. Furthermore, he is an active member of ETG, CRIS, CIGRE and

IEEE and an expert at FNN Berlin. Since 2004, he has been a fellow of the Conrad Adenauer Foundation and since 2010 he has also been the president of CRIS. He has coordinated numerous national and international projects (e.g. Harz-EE-Mobility). He is author or co-author of more than 200 papers in international journals and has presented at numerous international scientific conferences.

Users Review

From reader reviews:

Jeffrey Thompson:

As people who live in the particular modest era should be change about what going on or details even knowledge to make all of them keep up with the era and that is always change and move forward. Some of you maybe can update themselves by looking at books. It is a good choice for you but the problems coming to you is you don't know what kind you should start with. This Smart Grids – Fundamentals and Technologies in Electricity Networks is our recommendation so you keep up with the world. Why, because book serves what you want and wish in this era.

John Kuykendall:

Are you kind of stressful person, only have 10 or 15 minute in your moment to upgrading your mind skill or thinking skill even analytical thinking? Then you have problem with the book than can satisfy your short time to read it because pretty much everything time you only find guide that need more time to be examine. Smart Grids – Fundamentals and Technologies in Electricity Networks can be your answer mainly because it can be read by an individual who have those short time problems.

June Weiss:

The book untitled Smart Grids – Fundamentals and Technologies in Electricity Networks contain a lot of information on that. The writer explains the woman idea with easy technique. The language is very clear and understandable all the people, so do certainly not worry, you can easy to read the idea. The book was authored by famous author. The author brings you in the new period of time of literary works. It is easy to read this book because you can continue reading your smart phone, or device, so you can read the book with anywhere and anytime. If you want to buy the e-book, you can start their official web-site along with order it. Have a nice learn.

Clarence Anderson:

Do you like reading a guide? Confuse to looking for your favorite book? Or your book was rare? Why so many question for the book? But any kind of people feel that they enjoy intended for reading. Some people likes examining, not only science book and also novel and Smart Grids – Fundamentals and Technologies in Electricity Networks or even others sources were given information for you. After you know how the fantastic a book, you feel need to read more and more. Science guide was created for teacher or students especially. Those publications are helping them to bring their knowledge. In additional case, beside science guide, any other book likes Smart Grids – Fundamentals and Technologies in Electricity Networks to make your spare time more colorful. Many types of book like this one.

Read Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski for online ebook

Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski books to read online.

Online Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski ebook PDF download

Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski Doc

Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski Mobipocket

Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski EPub

T02VPEDYOMN: Smart Grids – Fundamentals and Technologies in Electricity Networks By Bernd M. Buchholz, Zbigniew Styczynski