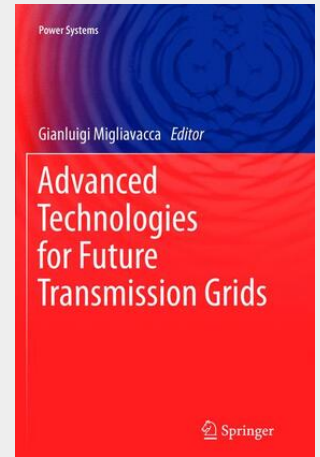


## Advanced Technologies for Future Transmission Grids

The re-engineering of power transmission systems is crucial to meeting the objectives of such regulators as the European Union. In addition to its market, organisational and regulatory aspects, this re-engineering will also involve technical issues dealing with the progressive integration of innovative transmission technologies in the daily operation of transmission system operators. In this context, *Advanced Technologies for Future Transmission Grids* provides an overview of the most promising technologies, likely to be of help to planners of transmission grids in responding to the challenges of the future: security of supply; integration of renewable generation; and creation of integrated energy markets (using the European case as an example). These issues have increased importance because of administrative complication and the fragmentation of public opinion expressed on the build up of new infrastructure. For each technology discussed, the focus is on the technical-economic perspective rather than on purely technological points of view. A transmission-system-operator-targeted Technology Roadmap is presented for the integration of promising innovative power transmission technologies within power systems of the mid-long term. Although the primary focus of this text is in the sphere of the European energy market, the lessons learned can be generalized to the energy markets of other regions.

*Advanced Technologies for Future Transmission Grids* addresses the re-engineering of power transmission systems necessitated by the ambitious goals for integration of renewable generation being put in place by regulators around the world and particularly in the European Union. Transmission planning and day-to-day operation can make use of innovative technologies in order to better exploit the existing infrastructure and reduce the necessity of building new assets. The book provides an overview of the technologies most likely to be of help to planners of transmission grids in responding to the challenges of the future: · security of supply; · integration of renewable generation; and · creation of integrated energy markets (using the European case as an example). These issues have increased importance because of administrative complication and the fragmentation of public opinion on the build up of new infrastructure. For each technology discussed, the focus is on the technical-economic perspective rather than on purely technological points of view. A transmission-system-operator-targeted technology roadmap for the integration of promising transmission technologies within power systems in the mid-long term is presented. Although the primary focus of this text is on the energy market within Europe, the lessons learned can be generalized to those of other regions. The book provides an overview of the technologies most likely to be of help to planners of transmission grids in responding to the challenges of the future: · security of supply; · integration of renewable generation; and · creation of integrated energy markets (using the European case as an example). These issues have increased importance because of administrative complication and the fragmentation of public opinion on the build up of new infrastructure. For each technology discussed, the focus is on the technical-economic perspective rather than on purely technological points of view. A transmission-system-operator-targeted technology roadmap for the integration of promising transmission technologies within power systems in the mid-long term is presented. Although the primary focus of this text is on the energy market within Europe, the lessons learned can be generalized to those of other regions.



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