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Nota di contenuto	Energy the Desert Very Large Scale Photovoltaic Power - State of the Art and Into TheFuture; Copyright; Contents; Foreword; Preface; Task 8 Participants; List of Contributors; About the Editors; Acknowledgements; Executive summary; A.1 Introduction and overview: Potential of VLS-PV; Objectives; Proposed scenarios for solar and renewable energy; Global potential of solar energy resource; PV market potential for 2020; Trends in large-scale PV systems; Comprehensive comparison between solar-powered VLS technologies; Environmental aspects of VLS-PV A.2 Engineering and financial guidelines for VLS-PV systemsTechnical and engineering guidelines; Financial guidelines; A.3 VLS-PV technical options and applications; Grid matching issues; VLS-PV intermittence and stationary storage; Renewable power methane; A.4 VLS-PV case studies; VLS-PV in West Africa; VLS-PV in Israel; A.5 Possible scenario and strategy for VLS-PV; Expected roles of international cooperation; Possible contribution of VLS-PV to sustainability; Strategies for solar power plants in desert regions; Strategic Niche Management (SNM); New studies of business models

A.6 Conclusions Understandings; Projection for the future; Socio-economic and environmental benefits; Engineering and financing approach; Technical potential; International collaboration; Strategic niche management, social acceptance, and business models; Next step and strategy of Task8 activity; Part I: Introduction and overview potential of VLS-PV; Chapter 1 Introduction; 1.1 Objectives; 1.2 Concept of a VLS-PV system; 1.2.1 Concept and definition; 1.2.2 A synthesized scenario for network evolution; 1.2.3 A step-by-step approach for VLS-PV development; 1.3 Potential benefits of VLS-PV Chapter 2 PV and other renewable energy issues 2.1 Proposed scenarios and visions; 2.1.1 Review of latest global energy scenarios and visions; 2.1.2 Comparison of PV power generation among scenarios; 2.1.3 Historical changes in energy policies/scenarios and the role of PV; 2.1.4 National and regional targets of renewable energy and PV in power supply; 2.1.5 Summary and conclusion; 2.2 Proposed schemes and concepts; 2.2.1 Desertec Industrial Initiative; 2.2.2 Mediterranean Solar Plan and relative initiatives for renewable energy in the Mediterranean; 2.2.3 Asia Solar Energy Initiative Chapter 3 Global potential of solar energy 3.1 Solar resources; 3.1.1 Global horizontal irradiation as basis for all solar resources; 3.1.2 Overview of solar system concepts; 3.1.3 Fixed optimally tilted systems; 3.1.4 1-axis horizontal north-south continuous tracking system; 3.1.5 2-axes non-concentrating continuous tracking system: global normal irradiation; 3.1.6 2-axes concentrating continuous tracking system: direct normal irradiation; 3.2 Economic market potential of solar PV; 3.2.1 Overview of PV scenarios 3.2.2 Major PV diffusion phases - consequence of high growth rates and learning rates

Sommario/riassunto

"This 4th volume in the established Energy From The Desert series examines and evaluates the potential and feasibility of Very Large Scale Photovoltaic Power Generation (VLS-PV) systems, which have capacities ranging from several megawatts to gigawatts, and to develop practical project proposals toward implementing the VLS-PV systems in the future. Comprehensively analysing all major issues involved in such large scale applications, based on the latest scientific and technological developments and by means of close international co-operation with experts from different countries. From the perspective of the global energy situation, global warming, and other environmental issues, it is apparent that VLS-PV systems can: contribute substantially to global energy needs; become economically and technologically feasible soon; contribute significantly to the global environment protection; contribute significantly to socio-economic development. Energy policies around the world are gradually changing direction to focus less on nuclear energy with the expectation to turn to denuclearization entirely with the negative impacts of nuclear energy, while in parallel the importance of and expectations for renewable energy technologies are increasing drastically as possible energy infrastructure, as well as environmental friendly technology. This book recognises that very large scale solar electricity generation provides economic, social and environmental benefits, security of electricity supply and fair access to affordable and sustainable energy solutions and that VLS-PV systems must be one of the promising options for large-scale deployment of PV systems and renewable energy technologies"--