

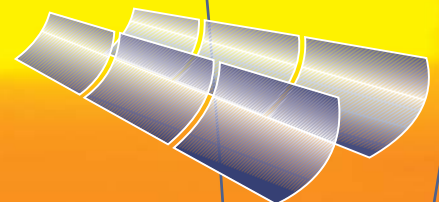
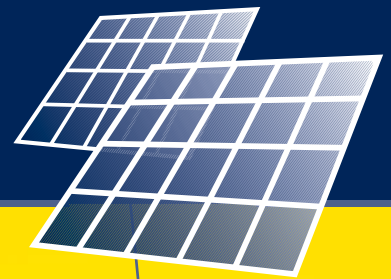
# PROCEEDINGS

2<sup>nd</sup> International Workshop on

# Integration of Solar Power into Power Systems



12 - 13 November 2012  
Lisbon, Portugal



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# PROCEEDINGS

## 2<sup>nd</sup> International Workshop on Integration of Solar Power into Power Systems

**12 - 13 November 2012**  
**Lisbon, Portugal**

Edited by Uta Betancourt / Thomas Ackermann

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# Welcome to the 2<sup>nd</sup> International Workshop on Integration of Solar Power into Power Systems

We have the great pleasure to welcome you to the 2<sup>nd</sup> *International Workshop on Integration of Solar Power into Power Systems* in Lisbon, Portugal.

The main idea of this workshop is to bring together utilities, PV/CSP system developers and project developers, power systems operators and other professionals to exchange knowledge and ideas, as well as experience in matters relating to the integration of solar energy into the power systems.

It took some years from the initial idea before the rising interest in the topic finally lead to the realization of the first Solar Integration Workshop in Aarhus, Denmark last year. The feedback was much better than we anticipated, with close to 100 abstracts submitted following the call for papers which allowed us to compile a very interesting program. This successful first edition encouraged us to stage a second edition of the Solar Integration Workshop. The number of submitted abstracts equalled last year's number and thus we are proud to present a challenging one-and-a-half day program.

The aim of this second workshop is now to resume all relevant topics related to Solar Integration with special focus on worldwide solar integration experiences.

I would like to mention that the 2<sup>nd</sup> *Solar Integration Workshop* is embedded into a number of related events such as the *Tutorials for the Solar Integration Workshop* (November 11, 2012) and *Tutorials on Wind Turbine Modelling* (November 12/13, 2012) and the 11<sup>th</sup> *International Workshop on Large-Scale Integration of Wind Power into Power Systems as well as on Transmission Networks for Offshore Wind Power Plants* (November 13-15, 2012).

In order to make the contributions to this workshop more easily available for academia and industry world-wide we will submit the proceedings to international libraries and organisations who operate citation index systems such as the (i) FIZ - Fach Informations Zentrum Karlsruhe, (ii) Elsevier, (iii) ETDE, (iv) Reuters, (v) Compendex, (vi) ThomsonCitationIndex.

This workshop would not be possible without the support of our Gigasponsor **DIgSILENT**. In addition, the workshop is supported by the Utility Variable Generation Integration Group *UVIG* (USA), the *Renewables Grid Initiative* (Germany), the Portuguese Association of the Solar Industry *apisolar* (Portugal) and the media partner *renováveis magazine* (Portugal). Above all, we would like to thank the Portuguese TSO **REN** as Megasponsor and for its local assistance and general support.

We would also like to thank all those who supported the organizers of this workshop: José Osorio (REN) and the International Advisory Committee, Uta Betancourt, Jörg Braun and Ines Drewianka (all Energynautics, Germany).

Enjoy some inspiring days in Lisbon and seize the numerous networking possibilities!

Thomas Ackermann  
*energynautics*

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R. Teodorescu (Aalborg University, Denmark)

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B. Engel, B. Ernst, J. Jahn (SMA Solar Technology, Germany)

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A. Rivas, M. Sánchez, J. J. Peiró, M. de la Torre, T. Domínguez (REE, Spain)

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J. Widén (Uppsala University, Sweden)

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E. Ibanez, G. Brinkman, M. Hummon, D. Lew (NREL, USA)

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D. Franzi (IMT Advanced studies Lucca, Italy)

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D. Barbosa (University of Aveiro, Portugal), G. L. Márquez, V. Ruiz, M. Silva (Advanced Technological Centre Renewable Energies Paraje los Retamares, Spain), L. Verdes-Montenegro, J. Santander-Vela (IAA-CSIC, Spain), D. Maia, S. Antón (CICGE, Portugal), A. van Ardenne (Chalmers University of Technology, Sweden), M. Vetter (Fraunhofer ISE, Germany), M. Kramer, R. Keller (Max Planck Institute for Radio Astronomy, Germany), N. Pereira, V. Silva (Logica EM, Portugal)

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12:15 – 13:00 / 13 November 2012 / Room Castelo I/II / Session chair: T.B.A.

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Nicholas Miller (GE Energy US) et al.

**The contributions and discussions of this session are not part of the proceedings.**

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## Workshop Information

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