#### **SUN & WIND ENERGY**

# Publishing company:

BVA Bielefelder Verlag GmbH & Co. KG Richard Kaselowsky Ravensberger Straße 10f 33602 Bielefeld, Germany

#### **Publisher:**

Prof. Dr. Bernhard von Schubert

#### Editors

Dr. Volker Buddensiek (responsible), Silke Funke, Eva Augsten, Tanja Ellinghaus Katharina Garus, Stefan Trojek Phone: +49/5 21/59 55 48, Fax: +49/5 21/59 55 56 E-mail: sf@sunwindenergy.com Website: www.sunwindenergy.com

#### Freelance authors:

In Germany: Johannes Bernreuter, Jens-Peter Meyer, Joachim Zeitner, Jörn Iken, Joachim Berner, Anke Müller, Ina Röpcke, Claudia Hilgers In India: Jaideep N. Malaviya In China: Sven Tetzlaff, Zhengua Weng In USA: Michael Griffin, Lisa Cohn, Elisa Wood, Anke Wienand

#### Advertising:

Christian Krosse, Yvonne Müller, Christine Michalsky, Christiane Diekmann, Sandra Rambow, Phone: +49/5 21/595581, Fax: +49/5 21/59556 E-mail: ck@sunwindenergy.com

## Sales & Marketing:

Urich Fillies (Manager) Uta Haffert, phone: +49/5 21/59 55 88 Fax: +49/5 21/59 55 07 E-mail: uta.haffert@bva-bielefeld.de

# Advertising sales Italy:

Quaini Pubblicità, Linda Clerici Phone: +39/02/39216180 Fax: + 39/02/39217082 E-Mail: info@quaini-pubblicita.it

### **Advertising sales North America:**

McNeill Group, Scott Sward, Philip Miller Phone: +1/800/394/5157 ext. 16 Fax: +1/215/321/9636 E-Mail: ssward@mcneill-group.com, pmiller@mcneill-group.com

# Advertising sales China:

Sven Tetzlaff Phone: 0086/13777476258 (English) 0086/15868485302 (Chinese) Fax: +86/571/28028860 E-Mail: mail@sventetzlaff.de

## Layout:

Green Tomato GmbH, Bielefeld, Germany

#### Print:

Dierichs Druck + Media GmbH & Co. KG, Frankfurter Str. 168, 34121 Kassel, Germany

SUN & WIND ENERGY is an independent journal published six times a year. Subscription costs are € 51 per year plus shipping costs.

Material in this publication may not be reproduced, reprinted or stored in any form without the publisher's written permission.

### Translation:

Translationes, Berlin, Germany Jeremy Heighway, Leipzig, Germany Mark Wigfall, Business English World, Clausthal-Zellerfeld, Germany Craig Morris, Freiburg, Germany Übersetzungsbüro Hartmann, Chemnitz, Germany



Econcern: mission possible

"A sustainable energy supply for all" – no more and no less is the aim for the Dutch Econcern Group – one of the fastest-growing companies in the field of renewable energies. A whole-body approach to technical systems plays a central role in this.

Page 30



"Make us more efficient"

By 2012, PV plants with an output of 1.3 GW<sub>p</sub> are set to be installed in South Korea. To achieve this targeted expansion, the country needs the know-how and commitment of foreign manufacturers.

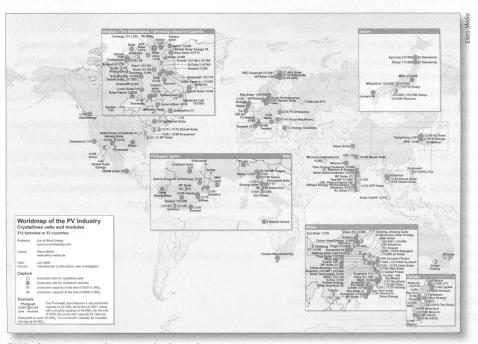
Page 46



Evacuated tubes take center stage

For a long time, Germany dominated the European market for evacuated tubes. But now, such countries as Italy and Poland are catching up quickly. Nonetheless, the market volume in Europe is tiny compared to China.

Page 58



PV industry: growth across the board

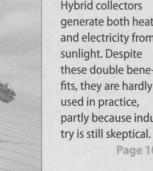
Growth on the photovoltaics sector has gotten faster and faster. Production sites for PV cells and modules are decentralising on tomorrow's markets. But worldwide no more than 50 % of the capacities are being exhausted. Still the expansion and creation of new capacities takes giant steps.

Page 118



Hybrid collectors: double benefits Hybrid collectors generate both heat and electricity from sunlight. Despite these double benefits, they are hardly used in practice, partly because indus-

Page 104



Turbine manufacturers: production for a globalised market Wind energy is undergoing a boom not restricted to Germany and Europe. With energy demands in Asia getting stronger, the market has been developing on a real global scale. Manufacturers of wind energy plants are expanding their

production on the international stage. Page 186

23rd EU PVSEC: better performance, wider selection In Valencia, Spain, more than 600 exhibitors will be taking part in the world's largest solar electric convention. One trend is clear: Markets and technology are becoming more international. Page 150

# Review

- 6 Incentive schemes worldwide
- 8 International fairs
- 14 Renewable Energies Finance Forum, Wall Street
- 24 Germany's Renewable Energy Sources Act: upsides and downsides
- 28 PV: Bright prospects for students
- 30 Econcern: Mission possible
- 34 Italy's solar industry is gaining ground
- 40 Solar power becomes "en vogue" in France
- 46 Renewables in South Korea
- 52 Taiwan: ambitious PV goals
- 56 PV in China: They haven't got a clue?

#### Solar Thermal

- 58 Evacuated tubes take center stage
  - 68 Absorber coating: a thick surprise in
  - 72 Solar pool heating in the U.S.
- 78 Solar thermal market USA: explosion or slowdown
  - 90 Sunny states at the bottom of the ramp
  - 98 Sunlaser: systems engineering for solar absorbers

# CSP Technology

100 A celebration in southern Spain: Schott's new receiver production

### Solar Energy

- 104 Hybrid collectors: double benefits
- 110 Successful Intersolar debut in the USA
- 112 Grand Solar Plan as a solution to energy costs and global warming

# Photovoltaics

- 118 PV world map: growth across the board
- 128 Inverters: there's more to it than the efficiency factor
- 136 Tracking systems: higher output, higher investment costs
- 148 EDF's realm of shadows
- 150 23rd EU PVSEC preview: better performance, wider selection
- 168 Oerlikon: their grip on the market
- 170 Trade Fair Daegu in South Korea
- 174 SNEC exhibition/conference in Shanghai
- 176 Mixed feelings at the Photovoltaic Specialists Conference San Diego

# Country Special

180 Greece: feeble market, massive plans

#### Wind Energy

- 186 Turbine manufacturers worldwide
  - 192 Boom remains elusive in the Netherland's polder regions
  - 196 Windpower 2008, Houston: thriving at the epicenter of clean energy
  - 202 Oil sector reaches out to offshore wind
- 206 Husum WindEnergy: record participation
- 214 Analysing data streams
- 218 Remote maintenance: everything under control
- 220 Patagonia wants to export windpower
- 222 India's wind energy market in motion

- 226 Heating with pellets on a large scale
- 232 European Biomass Conference

# Department

- 236 Order a free copy
- 237 Directory