

19.12.2005

Dear Mr / Ms ,

Welcome to the renewables made in Germany newsletter of the German Energy Agency (Deutsche Energie-Agentur, dena). We are pleased to introduce our second issue, which features articles on the following topics:

- Current developments in renewable energy around the world
- Interesting projects and applications in renewable energy
- State-of-the-art German technologies and services for using renewable energy sources
- Opportunities and events that let you find out more and get in touch with German companies maybe in your area soon.

We hope you enjoy reading this issue of the renewables made in Germany newsletter!
The Renewable Energy Division of the German Energy Agency (dena)

(If you would like to cancel your subscription to this newsletter, please see section 10 service and editorial information .)

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1. After the elections in germany: renewable energy sources continue to be of utmost significance in german energ policy

The new German government intends to continue with the promotion of renewable energy. To this effect, it is keeping the Renewable Energy Act (EEG), which has to date proven thoroughly successful. By 2020, its portion of power generation in Germany should grow to 20 per cent. In the year 2010, energy from sun, wind, water and biomass should provide for 4.2 per cent of total energy consumption. An increase to 10 per cent is planned by the year 2020.

The portion of primary energy consumption provided for by biomass should be significantly increased. The government is paying special attention to the increased utilization of biofuels. In the coalition agreement between CDU, CSU and SPD, an increase to 5.75% by the year 2010 was stipulated.

International activities to further develop the renewable energy sector are to be continued. To reinforce the industry's export activities, the German Renewable Energy Export Initiative is to be intensified.

2. Bioenergy is booming biogas and wood pellets show strong growth

Bioenergy is the largest growth market in the renewable energy sector. In 2004 the renewable energy industry in Germany reported a sales growth of 22.8 percent to 3.5 billion euros and in 2005 even stronger growth is expected at 30 percent according to the Bundesverband BioEnergie e.V. (German BioEnergy Association, BBE). In particular, wood pellet sales have increased sharply due to high oil and gas prices. Although pellet heating systems have higher purchasing costs than oil heating systems, they have significantly lower operating costs. At the end of 2004 there were 28,000 pellet heaters in Germany, and that number is likely to increase to 50,000 by the end of 2006. Information on German energy price trends and the price trends for wood pellets is available at www.depv.de/marktdaten_index.html.

The biogas sector is booming as well. By the end of 2005 the number of biogas plants installed in Germany will yield a cumulative capacity of 450 megawatts. That means twice the capacity of last year and an annual production of 2.9 billion kilowatt-hours of electricity. Moreover, combined heat and power plants (CHP) that run on biogas generate 4.7 million megawatt hours of heat. Industry sales in plant construction are 490 million euros. 8,000 people are currently employed in the renewable energy sector. According to figures from the Fachverband Biogas (German Biogas Association), average annual industry growth can reach 40 percent over the next five years. The production of biogas already prevents around 2.5 million tons of CO₂ emissions each year. More information on biogas in Germany can be found at www.fachverband-biogas.de.

3. Subsidizing options for acquisition of heat from renewable energy source

As oil, gas and coal becomes scarcer and more expensive, interest in renewable energy for heat production grows. Researchers at the Solar Energy Research Association believe that solar, wind, water and geothermal energy sources could supply half of the total heat demand in Germany.

Further market development could be supported by (for example) a Renewable Heat Act. Currently, only 4 percent of the German heat market is based on solar energy. Yet the supply of heating and cooling energy accounts for more than 50 percent of primary energy demand.

The heat market is, however, much more complicated than the electricity market. In contrast to electricity, solar heat is not fed into the grid, but is consumed in-house. The specific instruments currently up for discussion are:

- Administrative regulations that enact provisions regarding the use of renewable energy. One such provision, for example, could be to require each individual building constructor to install solar power systems on new buildings.
- Price regulations similar to the existing Renewable Energy Sources Act governing the German electricity sector. These regulations would establish a sales price for renewable energy sources that must be paid by a specific group as specified by legislation. A heat law could impose an obligation for all fuel suppliers to buy renewable electricity.
- Quantity regulations that require a specific quantity of renewable energy to be generated each year and gives a specific group the task of upholding this requirement.

4. Bioenergy a short introduction

As a result of photosynthesis, plants are able to form biomass and thereby store energy. The use of biomass for energy has great potential for heat and power generation, and for solid, liquid and gaseous fuel production.

Bioenergy can be stored and used later as needed. It can be provided at any time to meet various requirements. The use of biomass helps alleviate municipal waste disposal problems while supplying much-needed energy. Bioenergy use also decentralizes energy production and creates a material and energy cycle. Using bioenergy is largely CO₂ neutral.

Biomass includes wood, organic waste, manure and other substances of vegetable and animal origin. One common method of generating electricity from biomass is to use the heat from wood combustion to create steam that drives a turbine. If required, heat can be produced by condensing the steam coming from the turbine.

Wood is also the most important bioenergy fuel for heating. German manufacturers offer a wide range of advanced and well-tested systems: wood chip boilers, wood pellet boilers, wood gasification boilers and individual woodburning stoves.

Biogas is a natural by-product of bacteria that feed on biomass. It is released during fermentation in the absence of air. It can be stored in a gas storage tank until needed for use. When biogas is burned in a combined heat and power (CHP) plant, electricity and heat are produced. Manure and other animal wastes, energy crops, organic and natural wastes from agriculture and forestry, and food and organic waste from industry and commerce can be used as source materials for biogas generation.

Biodiesel and bioethanol are currently the most important biofuels. Synthetic biofuels, vegetable oils and biogas applications are being developed. Source materials suitable for biodiesel are parts of plants that contain large amounts of oil, such as rapeseed, hemp and sunflower seeds, palm kernels, soybeans and nuts. Bioethanol is produced from biomass that contains sugars or starches. Biofuels are mainly used in vehicles.

5. First landfill gas project in ecuador

The G.A.S Energietechnologie GmbH in Krefeld (Germany), an energy technology company, has started the first joint landfill gas project in Quito, the capital of Ecuador. In cooperation with the Ecuadorian company Alquimiatec, a gas collection and flare system will be installed on the Zámiza landfill in the northeast area of Quito. The goal of the project is to prevent methane emissions. According to forecasts based on waste quality and quantity, the landfill emits up to 5.000 m³/h of gas. Based only on the gas capture of about 50 percent of the landfill gas emissions, an average annual reduction of about 80,000 tons of CO₂ equivalents is expected over the next 10 years. This also provides for the installation of a power generation system with an electrical capacity of 2,500 KW. The expected amount of electricity generated each year would be 14.1 GWh. Work has now begun on a concrete project design after successful test drilling was completed last May.

The project is to be approved and registered as a clean development mechanism project by the Executive Board of the United Nations Framework Convention on Climate Change. Environmentally-friendly development mechanism projects are financed by industrialized countries and companies and implemented in developing and emerging countries. The resulting emission reductions are certified as CER (Certified Emission Reductions) and can thus be traded accordingly. Numerous inquiries have already been made regarding the purchase of this certificate.

6. Renewables made in germany products and services

INDUSTRY: SOLAR THERMAL

- Provider: [Ritter Solar GmbH & Co. KG](#)

- Product: Evacuated tube collector series CPC OEM

Description: The evacuated tube collector series CPC OEM was developed especially for solar domestic water heating and for solar backup space heating. The low pressure loss allows several modules to be connected in series.

INDUSTRY: PHOTOVOLTAICS

- Provider: [Phaesun GmbH](#)

- Product: Solution provider for stand-alone power systems

Description: Phaesun acts worldwide as an independent wholesale distribution and service company for photovoltaic and related systems. It is a partner for tailored packaged systems, especially for sustainable development programmes.

INDUSTRY: WIND ENERGY

- Provider: [natcon 7 GmbH](#)

- Product: D-RTU WTG

Description: D-RTU is a standardized and manufacturer-independent remote control system, adjusted to the specific requirements of distributed power supply and the demands of operators such as regional energy producers, distributors, service providers, public services, and green energy vendors.

INDUSTRY: GEOTHERMAL

- Provider: [Siemens AG](#)

- Product: Small Output Geothermal Power Plants

Description: Siemens AG plans and builds geothermal power plants with an electrical power output of up to 5 MW, utilizing the innovative Kalina technology. The Kalina process is based on the use of a binary active medium, a mixture of water and ammoniac.

7. Renewables made in germany get in touch!

Are you looking for contacts to experienced German companies in the renewable energy sector or more information on renewable energy technology from Germany?

If so, the German Chambers of Commerce Abroad (AHK) can help. As part of the renewables made in Germany program, delegations of German business representatives from the renewable energy sector travel to all parts of the world to showcase their expertise and products and also explore possibilities for cooperation.

Each event includes a one-day seminar where you receive information about current developments in renewable energy technology and the products of the Germany companies that are represented. If you want to get in touch with individual companies, then the German Chamber of Commerce Abroad in your country can act as a liaison.

The following table shows all the dates and countries that are part of the trade mission scheduled for the first half of 2006. If you have any interest in attending one of these events or require more information, please contact the relevant German Chamber of Commerce Abroad (Email: see table). We are excited about your interest!

Target market	Location	Technology	Dates	Seminar/Presentation	Contact
Australia	Sydney	Wind and solar energy	06/19 06/23/2006	Monday (06/19)	Anja.Kegel@germany.org.au
Belgium	Brussels	Solar thermal energy and bioenergy	05/08 05/12/2006	Monday (05/08)	ludwig@debelux.org
Denmark	Copenhagen	Biomass, biogas, bio-fuels	05/01 05/05/2006	Wednesday (05/03)	am@tyskehandelskammer.dk
Finland	Vaasa	Bioenergy	04/04 04/07/2006	Tuesday (04/04)	Inge.martonen@dfhk.fi
France	Paris	Biomass	03/14 03/17/2006	Tuesday (03/14)	wlindermeir@francoallemand.com
Indonesia	Jakarta	All renewable energy technologies	06/26 06/30/2006	Monday (06/26)	martink@ekonid.or.id
Ireland	Dublin	All renewable energy technologies	02/22 02/23/2006	Monday (02/21)	Aideen.Keenan@german-irish.ie
Italy	Milan	Solar thermal energy, photovoltaics	06/12 06/16/2006	Monday (06/12)	Juliane.Hinsch@ahk-italien.it
Italy	Milan	Biomass	11/20 11/24/2006	Monday (11/20)	Juliane.Hinsch@ahk-italien.it
Canada	Montreal	Wind	03/27	Tuesday (03/28)	Marco.wiedemann@germanchambe

		energy, biomass	03/31/2006		r.ca
Columbia	Bogota	Bio-fuels, biomass	05/15 05/19/2006	Monday (05/15)	Negocios2@ahk-colombia.com
Reunion /Mauritius	Port Louis	Solar thermal energy, photovoltaics	06/26 06/30/2006	Tuesday (06/27)	scabotte@francoallemmand.com
Lithuania	Vilnius	Wind energy	05/29 05/31/2006	Monday (05/29)	Oliver.Baake@ahk-balt.org
Morocco	Casablanca	Wind energy, biogas, solar thermal energy	06/06 06/09/2006	Friday (06/09)	Joern.Bousselmi@dihkcasa.org
Mexico	Mexico City	Wind energy, bioenergy	05/15 05/19/2006	Thursday (05/18)	Daniela.Saam@camexaservicios.com.mx
The Netherlands	The Hague	Biomass, bio-fuels	03/07 03/09/2006	Tuesday (03/07)	a.loehr@dnhk.org
The Netherlands	The Hague	All renewable energy technologies (building services engineering)	06/14 06/16/2006	Wednesday (06/14)	a.loehr@dnhk.org
Norway	Oslo	Bioenergy	03/27 03/31/2006	Monday (03/27)	rassmann@handelskammer.no
Austria	Vienna	Wind energy	03/20 03/24/2006	Tuesday (03/21)	Florian.Hoeland@DHK.at
Russia	Moscow	All renewable energy technologies	10/23 10/27/2006	Monday (10/23)	spaak@dihk.ru
Sweden	Stockholm	Biogas, bio-fuels	03/27 03/31/2006	Wednesday (03/29)	Micke.bayart@handelskammer.se
Switzerland	Zurich	Solar energy	02/27 03/03/2006	Tuesday (02/28)	Michael.Koch@handelskammer-dch.ch
Switzerland	Zurich	Biomass, biodiesel fuels	09/11 09/15/2006	Tuesday (09/12)	Michael.Koch@handelskammer-dch.ch
Spain	Madrid	Biomass, biogas, bio-fuels	03/20 03/24/2006	Tuesday (03/21)	Christina.wasmeier@ccape.es
South Korea	Daegu	Wind energy, solar thermal energy,	06/12 06/16/2006	Thursday (06/15)	sscheibe@kgcci.com

		photovoltaics			
Taiwan	Taipei	All renewable energy technologies (building service engineering)	07/03 07/07/2006	Tuesday (07/04)	agursch@dwb-taipei.org.tw
Thailand	Bangkok	Biomass	10/30 11/03/2006	Tuesday (10/31)	supinda@gtcc.org
Czech Republic	Prague	Biomass	205/29 06/02/2006	Tuesday (05/30)	schwan@dtihk.cz
Tunisia	Tunis	Wind energy	06/12 06/16/2006	Monday (06/12)	s.kraut@ahktunis.org
Hungary	Budapest	Solar energy, bioenergy	01/30 02/03/2006	Monday (01/30)	szinte@ahkungarn.hu
USA	Atlanta, Georgia	Wind energy, solar energy	03/13 03/17/2006	Monday (03/13)	stietze@gaccsouth.com
USA	San Francisco, California	Solar thermal power plants	03/27 03/31/2006	Monday (03/27)	smorbe@gaccny.com
USA	New York City, New York	Wind energy, solar energy	03/13 03/17/2006	Thursday (03/16)	ibentz@gaccny.com

8. The federal ministry for economics and labor is taking renewable energy technologies made in germany abroad

Another opportunity to make contacts with German companies from the renewable energy industry is to attend the trade fairs organized by the German Ministry of Trade and Industry. Come visit the community booth to speak directly with German companies and receive information on the newest technologies. More information is available at www.german-renewable-energy.com.

Date	Location	Fair
January 1 st - February 2 nd , 2006	Abu-Dhabi / United Arab Emirates	Power-Gen Middle East
April 24 - 28, 2006	Hanover / Germany	Hannover Messe-Energy
May 24 - 26, 2006	Beijing / China	RE Asia
May 30 - June 1 st , 2006	Jönköping / Sweden	World Bioenergy
May 30 - June 1 st , 2006	Cologne / Germany	Power-Gen Europe
September 20 - 22, 2006	Zaragossa / Spain	Power-Expo
expected October 2006	California / USA	Solar Power 2006
expected November 2006	India	World Wind Conference and Exhibition

9. Announcements of events

Renewable Energy Finance Forum Central & Eastern Europe

Euromoney is delighted to host jointly with Deutsche Energie-Agentur GmbH (dena) the Renewable Energy Finance Forum Central & Eastern Europe on 13-14 March 2006 in The Hilton Hotel in Berlin.

Our comprehensive agenda represents the perspective of 40+ leading international experts and will focus on:

- Latest international trends in project finance and equity raising
- Portfolio structuring and bond market refinancing
- Initial public offering of renewable companies
- Capital markets view on renewable energy sources
- Carbon finance & JI
- Changes in the legislative framework in Eastern Europe
- Best strategies for developers and financiers in Eastern Europe
- Sales of German renewable assets

For further information or to register, please visit our homepage at www.euromoneyenergy.com or contact Torsten Merkel at TMerkel@EUROMONEYPLC.COM

Don't miss the early bid discount by the 27th of January!

WindEnergy, International Trade Fair Hamburg

Hamburg, Germany
May 16-19, 2006
www.windenergy.de

More Partners

WindEnergy is supported by its Partners VDMA (German Engineering Federation), EWEA (European Wind Energy Association) and DEWI (German Wind Energy Institute) as well as associations like AWEA (US), BWEA (GB), CREIA (CN), InWEA (IND), JWPA (JP). Numerous well-known companies of the whole value added chain of this branch are members of the international advisory board and support the further development of the trade fair.

More Fair

WindEnergy is the leading international trade fair of the industry and will be held in the first newly built halls of the new Hamburg fair site. More than 400 exhibitors (40% international) will present their innovations and meet some 12,000 trade visitors from over 55 countries.

More success!

The convincing exhibition concept with international partnerships and attractive complementary program.

The unique platform for communication, knowledge transfer and international contacts. Official delegations from various countries of all continents have already confirmed their visit to Hamburg. Be part of the success!

If you are also planning a business-delegation to Hamburg, please contact us:

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Service and editorial information

For more information about German technologies and manufacturers in the renewable energy industry, see our website renewables-made-in-germany. Our online forum is available for project ideas,

cooperation opportunities, and general inquiries to German manufacturers and institutions at www.renewables-forum.com. We 're looking forward to your visit.

The next issue of the newsletter "renewables made in Germany" will appear in November 2005.

Editorial information

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