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Arabic, Chinese, English,
German, Spanish

RIGHTS

Worldwide, VOD, Mobile

ORDER NUMBER

26 4774 | 01-05

Global Energy

The demand for energy in emerging and developing nations is rapidly increasing, as is the need for renewable energy sources. For example, the wind energy sector in India is predicted to grow by 25 percent annually. The sustainable application of renewable energies in these countries is of huge significance to the world's climate as a whole. If it is at all possible, errors committed during periods of economic growth in industrialized countries – the consequences of which future generations are going to have to live with – should not be repeated. But what contribution can these types of energy production make to future energy supplies? **Global Energy** outlines the key alternative forms of energy and presents international examples of their applications, which meet the standards of best practice and can also be utilized elsewhere.

01 The Eternal Cycle – Water Power

Hydropower is the most widely used renewable energy, and currently produces a seventh of all the world's electricity. Using water to generate electrical power is regarded as a particularly well-developed technology that's also kind to the environment. But there are negative aspects. The construction of dams destroys habitats – people are displaced, precious natural biospheres are lost. But there is an alternative approach, as illustrated by these simple, local solutions in Brazil and Nepal.

02 The Inexhaustible Source – Solar Energy

In six hours, the amount of energy beating down upon the deserts of the Earth is equal to the amount of power used by humans in one year. These deserts provide the perfect conditions for solar power stations. Morocco is the first African country to announce plans for large-scale investment in such plants. In countries such as Ethiopia and India, where most people in rural areas are not linked up to the national grid, electricity could be generated from the sun by using small, local photovoltaic plants.

03 Clean Energy – The Boom in Wind Power

The balance is currently shifting with regard to wind-generated power. While windparks have become quite common in Western Europe and the US over the years, it is in China that the largest investments in new windparks are now being made. Germany, a pioneer in the sector, is involved in the transfer of technology and the provision of specialized training. Morocco aims to become an exporter of wind power to Europe. And India wants to harness the wind in order to provide electricity to the rural population throughout the country.

04 The Regeneration Principle – Biomass

Bioenergy is increasing its share of the energy market worldwide, not least because of the rising price of oil. Renewable resources, including an increasing number of agricultural products, are the main sources of energy used here in the production of heat, electrical energy and fuels. But some biomass applications are controversial because of their own impact on the environment.

05 Fire from Within – Geothermal Heat

Geothermics – the practice of harnessing thermal energy from the naturally occurring warmth of the Earth – may not be possible or useful everywhere, but its worldwide potential is still far from being fully exploited. Geothermal energy can be used directly to heat or cool, or to produce electricity. The two functions can also be combined in cogeneration or 'combined heat and power' plants. Here too, ecological considerations are of major importance.