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Energy supply with

renewables – Made in Germany

Information on technologies, suppliers, products and services

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Your supply of renewable energies

Residential estates, manufacturing firms and business enterprises, as well as private households all over the world increasingly need reliable, affordable and environmentally compatible energy to cover their demand for electricity, heat, refrigeration and mobility. Here is where renewable energies can be of great service. Unlike fossil fuels, renewable energies come from inexhaustible sources. There is a variety of technologies available to make use of the globally accessible natural potentials of wind, solar and bioenergy,

as well as hydropower and geothermal energy. Combined with modern storage and grid technology, renewable energies can be stored or transmitted over long distances from the place of generation to faraway centres of consumption, distributed where there is a demand for energy and utilised there in a manner optimised to meet the demand. In this way, they can considerably aid in providing a secure energy supply, even in a modern industrial society.

Goals	Benefits of renewable energies
Local availability	<ul style="list-style-type: none">▪ They are indigenous resources.
Sustainable provision of energy	<ul style="list-style-type: none">▪ They are inexhaustible or they regenerate.
Safety	<ul style="list-style-type: none">▪ They are relatively risk free to produce, use and dispose of or recycle.
Price stability	<ul style="list-style-type: none">▪ They promote long-term stable energy costs and independence from the volatile market for fossil fuels.
Economic efficiency	<ul style="list-style-type: none">▪ Depending on location, they can already be used economically, even without subsidies.▪ In remote areas, they are often the cheapest way to provide energy.
Environmental protection	<ul style="list-style-type: none">▪ They conserve natural resources and require little invasive interference with the natural landscape.
Climate protection	<ul style="list-style-type: none">▪ They are largely emission free.
Protection of human health	<ul style="list-style-type: none">▪ They are low in harmful emissions (noise, pollution).
Local creation of value	<ul style="list-style-type: none">▪ They create jobs in sustainable growth industries.▪ They promote economic development in rural regions.▪ They support a positive economic development through technical innovations.
Independence from the grid	<ul style="list-style-type: none">▪ They are reliable sources of energy far from the public grid (in combination with energy storage facilities).

Using renewable energies supports a large number of requirements. The above table presents examples of these.

Choose an application that suits your needs



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While wind and sun produce variable amounts of energy in the electricity sector depending on weather conditions, the availability of bioenergy, hydropower and geothermal power is nearly constant or can be stored and controlled. On the whole, this results in an ongoing energy supply that is reliable and tailored to demand. Owing to their enormous range, from a few watts up to hundreds of megawatts, renewable energies can also be adapted to any kind of energy service.

Not every source of renewable energy can be put to commercial use in every country. Certain regions, for instance, have potentials for using solar power at a very low cost. The best potentials for using

solar power, for instance, are found in the world's so-called sun belt (between 20 and 40 degrees of latitude in the Northern and Southern Hemispheres). The technical potential for wind energy is in turn dependent on the average wind velocity. This is generally much lower over continental land masses than over the oceans. Practically every country, however, has attractive locations for a wide variety of renewable energies.

The choice of a suitable technology or combination of technologies depends on conditions at the site as well as the respective requirements placed on the type and scope of energy provision. These include, among others:

Local conditions	User requirements
Natural potentials (for example, solar radiation, wind speed, biomass availability)	Form(s) of energy: electricity, heating/cooling, mobility
Political promotion schemes (for example, public investment grants)	Peak demand
Infrastructure (for example, grid connection)	Capacity/annual capacity
Funding for initial investment (equity or borrowed capital)	Fluctuation of the demand for energy in the course of the day/year

Examples of criteria for choosing suitable renewable energy technologies.

Collaborate with experienced partners

Individual consultancy is absolutely necessary to be able to use renewable energies in a way that suits the demand and is as commercially profitable as possible. When developing and building tailored plants, goals such as reliability, long life cycle and efficiency should be addressed, although a shapely design can also be a desirable factor.

Compared to other countries, German companies have a considerable store of practical experience in using renewable energies. Germany has highly efficient, world-class technologies available in all performance categories. Moreover, German companies supply high-quality components, plan and build production plants and finance projects all over the world.

They are also ready and willing to offer detailed and personal support when it



Donauer Solartechnik Vertriebs GmbH

Praia do Forte, Brazil: A wooden pergola on the beach provides shade for researchers and visitors at the "Projeto Tamar" research station and the modules on its 80 m² of effectively used roof area have a total capacity of 8.6 kWp. The system not only stands up to wind and rain, but also to the salty sea air.

comes to developing and constructing your customised renewable energy plant, from selecting suitable technologies to planning and implementing systems up to commissioning. German companies can also provide extensive consultancy and make you offers that are tailored to your needs.

Importers of German goods and services in the renewable energy sector obtain support through various German government programmes. The government provides appropriate coverage in the form of state export credit and investment guarantees. Germany also supports the financing of large-scale renewable energy projects with investment incentives through the federally-owned KfW Banking Group. In addition, partners profit from the experience and quality of German suppliers.



Thorben Wengert/pixello

Well-founded knowledge of possible means of funding and subsidy programmes, as well as the statutory framework, is decisive if the foundation for the overall success of a commercial enterprise is to be laid in an early phase.

Learn more and find the right implementation partner for you

The supplier catalogue “renewables – Made in Germany” has detailed information on ways to make use of renewable energies and provides answers to questions on financing and importing German goods and services.

Here you will also find German companies with international offers in the areas of solar, wind and bioenergy, geothermal energy and hydropower, as well as storage and network technology. The supplier catalogue contains the full contact data of the companies involved, as well as German industry associations and other institutions.

Order a printed catalogue

Tel: +49 (0)30 72 61 65-600

Fax: + 49 (0) 30 72 61 65-699

E-mail: renewables@dena.de

The catalogue is available free of charge.

Visit the online portal

www.renewables-made-in-germany.com

Visit the German renewable energy industry online at www.renewables-made-in-germany.com or use the QR code below on your smartphone.



The information is available in three languages: English, French and Spanish.

Your “renewables – Made in Germany” implementation partners:



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- other industry
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- solar thermal power plants

- biogas
- solid biomass
- storage and grid technology

- other industry
sectors

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biogas

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VIESSMANN climate of innovation	Viessmann Wärmepumpen GmbH www.viessmann.com	■ geothermal energy	full-line supplier full-range supplier
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WELTEC BIOPOWER	WELTEC BIOPOWER GmbH www.weltec-biopower.de	■ biogas	full-line supplier plant components, installation equipment, biogas plants

- wind energy
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- geothermal energy
- solar thermal power plants
- storage and grid technology

Watch it online: A film about the advantages of renewable energy technologies

(English, French, Spanish, Arabic)



The “renewables – Made in Germany” film shows the various ways of generating renewable energy as well as the current related technologies, the comprehensive range of services and the collective expertise of German companies. The main focus is on the transferability of German technologies and the different ways of applying these technologies.

The film contains five separate technology chapters and is available in English, French, Spanish and Arabic.

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