



Key Factor Energy

Development needs energy. The reliable and efficient provision of modern energy services is a central part of the global fight against poverty. A quarter of the world's population has no access to electricity: about 2.4 billion people have to rely on wood, charcoal or other plant matter.

Securing an energy supply is a necessary precondition for economic development – whether in agriculture, the manufacturing industry or the service sector. This is shown by analyses of the trends in gross domestic product and energy use in many countries.

Social or medical facilities are barely workable without reliable power supplies. The inefficient burning of wood and charcoal in private households leads to over-exploitation of forest resources. Soils are eroded, forests destroyed and landscapes turned to desert. Cooking with conventional stoves often causes respiratory diseases, which are counted among the most serious risks to health in developing countries.

A lack of lighting prevents people from using their time in the evening for advancing their education or for home working. The absence of street lighting becomes a security risk in public areas. To an increasing extent, imports of energy sources such as oil are forcing many countries to spend their limited

foreign currency resources. In addition, fossil energy sources, and in particular oil and gas, are not evenly distributed around the world. This state of affairs holds considerable potential for conflict ("fight for oil"). The burning of fossil fuels is accelerating global climate change and restricting the decision-making freedom of future generations.

Objectives of German Technical Cooperation in the Energy Sector

One of the declared aims of German Technical Cooperation (TC) is that more people should be supplied with energy obtained on an ecologically sustainable basis so that their living conditions and opportunities in life can be improved.

In programmatic terms, the activities of Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) in the energy sector are part and parcel of the overriding objectives of German development cooperation and the sector policy guidelines: to reduce poverty, secure peace and ensure justice in globalisation. The standards set in this regard include the principles and objectives of the United Nations Millennium Declaration with its Millennium Development Goals and the Johannesburg Action Plan.

- Objectives in the energy sector:**
- Satisfy basic energy needs in order to improve living conditions
 - Safeguard ecologically, economically and socially sustainable economic development
 - Strengthen technological performance capability in the energy sector
 - Reduce dependence on imported energy sources
 - Support the implementation of UN resolutions relating to the environment and development

German Technical Cooperation supports its partner countries in formulating the necessary energy policy framework. In particular, it is committed to the use of renewable forms of energy, more efficient methods of energy generation, more rational use of energy by producers and consumers, and greater access to energy services.

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German Technical Cooperation:
On the Way to a Sustainable Energy Supply

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Shaping Energy Policy

In many developing countries, the role of the state has been transformed as a result of sector reforms and liberalisation. New tasks have emerged for the state to develop market-conforming regulatory mechanisms, such as the establishment of conditions for fair competition. The stipulation of clear energy policy framework conditions is a vital part of orienting the energy sector towards a viable future. Experience from Germany and other countries shows that the creation of appropriate underlying political and economic conditions and the implementation of targeted promotion measures can encourage greater utilisation of renewable energy and the more efficient use of energy in general.

German Technical Cooperation assists partner institutions with the definition of political, legal and regulatory frameworks. For example, it is advising the Chinese Government on the drafting of a law to promote renewable energy. In Uganda, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), GTZ experts together with the partner institution are elaborating basic political and legal conditions which will enable the use of renewable energies to become established in Uganda.

In addition, GTZ is supporting more than 20 partner countries with the implementation of the Framework Convention on Climate Change and the Kyoto Protocol (Clean Development Mechanism).

Paving the Way for Renewable Energy

The prospects for renewable energy are good when energy policy is increasingly ecologically oriented. However, in view of the low world market prices for energy feedstocks from fossil sources, renewable energy projects are not yet at a stage where they run without assistance. The dissemination of renewable energy is impeded by a multiplicity of factors: high capital investment requirements, difficulty of access to small-scale loans, and customs and tax policy favouring fossil fuels are just a few examples of the obstacles.

GTZ has a large number of projects demonstrating its commitment to paving the way for renewable forms of energy and opening markets that are served by the private sector. Its activities range from the promotion of grid-coupled electricity generation from wind power in Colombia through the use of decentralised mini hydro-power in Nepal, Indonesia and Tibet to the use of renewable energy to improve rural energy supplies (solar home systems) and safeguard basic energy provision to households, for example by means of more efficient stoves. In addition, GTZ acts as a mediator and intermediary between different international interests, for example in relation to major hydropower projects.

Increasing Energy Efficiency

The technically and economically feasible potential for saving energy through more efficient conversion and utilisation is put at 30 to 50 per cent in developing and transition countries. Energy consumption can be reduced with the aid of more efficient technologies, better management and cost-conscious consumption patterns, whether in relation to electricity generation in power stations, the transmission of energy through power lines or district heating pipes or consumption by industry, commerce and transport as well as private households and public institutions.

GTZ takes a variety of approaches in its work: in China, the efficiency of power stations is being enhanced with the aid of mobile measuring labs. Costs are reduced, the profitability of electricity generation is raised and considerable quantities of pollutant emissions are saved. The Macedonian Government is receiving support with the introduction of an ordinance on energy saving in homes. In Latin America, production sequences are being optimised and staff upgraded at selected companies in order to exploit the potential for energy efficient operation. In all of the projects, positive commercial results are obtained and environmental benefits are achieved.

Identity, Vision and Mission of German Technical Cooperation

The service profile of German Technical Cooperation is oriented towards achieving long-lasting and sustainable impacts. Project planning is not bound by rigid principles, but instead is adapted to suit the respective situation and the resultant, usually specific needs of its partners and clients. This calls for individually targeted action and allows for a great variety of project concepts. Sustainable energy supplies can only be secured if the utilisation of wind power, solar power, geothermal energy, hydro-power, biogas and biomass is greatly increased in the coming years, and if energy is used more efficiently than before.

GTZ has over 25 years of practical and conceptual experience in dealing with technological, social and economic factors in the energy sector. At present, around 50 energy projects in more than 30 developing and transition countries are being implemented on behalf of BMZ or are at the concrete planning stage. In addition to these, there are about 20 country-specific measures conducted within the framework of the climate protection programme.

GTZ encourages strategic partnerships with other institutions and the private sector. Public and private interests are pooled within the scope of public-private partnerships, and objectives are achieved jointly. Under the Clean Development Mechanism, partners from developing and more advanced countries are also put in contact with private enterprises in order to translate climate-friendly concepts into practical applications. In embarking on this path, GTZ is setting a good example. Its own electricity is supplied entirely from renewable energy sources. Even the greenhouse gas emissions that are caused by the often unavoidable flights taken by its staff are balanced by the purchase of tradable emission permits. The purchase of permits supports projects implemented under the Clean Development Mechanism. This is to the benefit of developing countries and the environment. The aim is to make GTZ a CO₂-free operation in future.

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Paving the way for renewable energy
Increasing energy efficiency

