



Water, Energy, Transport

Energy efficiency

The challenge

According to various prognoses, worldwide energy use is set to greatly increase in the coming years. Developing countries and emerging economies will account for a significant portion of this increase owing to improving standards of living and growing populations within their borders. The ultimate consequence of this development will be strains on the energy supply. Furthermore, rising energy costs will place greater burdens on governments, economies and national budgets, and may threaten to put the brakes on economic development. The persistently high usage of fossil fuels will also lead to pressures on the environment as well as to unsustainable resource consumption.

The global potential for reducing energy consumption is enormous, reaching figures of up to 50 per cent in developing countries and transition economies within certain sectors.

Energy efficiency is an integral part of sustainable energy management in order to reduce energy consumption and decouple it from economic growth. It rests in the hands of policy makers to create conditions that will allow for and promote increases in energy efficiency. However, implementation needs to take place where energy is 'consumed': in power generation, transmission and distribution as well as in buildings, industry, private households, community facilities and transport. Beyond persuasion and understanding among policy makers and consumers, several additional factors must also be in place: the availability of energy efficient products, a functioning market for energy services, capable consultation structures, and appropriate financing options for the implementation of measures.

Our approach

Creating a sustainable response to the complex challenges of energy efficiency requires an integrated, multi-level approach that involves all crucial actors: ministries and local

government bodies, at the macro level, in addition to associations, service providers, universities and scientific and academic institutes, as well as energy users such as businesses, public facilities and private households.

Working with all involved stakeholders, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH analyses the existing situation, identifies potentials for increasing energy efficiency, and seeks out feasible ways for this potential to be utilised and implemented in cooperation with our partners. Our policy advice services help create an enabling environment that promotes energy efficiency. GIZ's worldwide links with banks, financing agencies as well as the private sector and professional institutions make it easier for our partners to identify appropriate and affordable technical solutions and the ways to finance them.

An essential element of our work is the creation of knowledge and dialogue platforms that facilitate access to information and the ongoing exchange of know-how among all stakeholders.

Our services

We offer a diverse range of services that are tailored to the requirements of our partners and target groups. Our services cover the following areas:

- **Energy policy advice**, such as in the drawing up sustainable energy policies, adjusting legislative frameworks, and designing national and/or local energy efficiency action plans
- **Capacity development** in energy-related institutions, in areas such as organisational development and the creation of management and implementation structures
- **Training** of energy specialists in all areas and sectors, including energy auditors for municipalities and industry



- Development and support of **promotion programmes**
- Planning and implementation of **pilot and model projects**
- **Technology transfers**
- Setting up **networks** and **platforms** for the exchange of information and expertise
- Designing **information campaigns, disseminating knowledge and expertise**
- **Developing service markets** in the energy sector, such as through setting up consulting agencies and competence centres.

The benefits

The benefits for policy-makers, industry and civil society are clear: acting with energy-efficient in mind almost always leads to ecological and economic win-win situations. In regards to economics, expenditure on energy imports can be reduced; the money saved here can be put to good use elsewhere. Additionally, energy supply security is increased; this contributes to political and social stability and improves the investment climate for domestic as well as foreign investors. Lower costs for industry increase both competitiveness and job security. Likewise, new occupational fields and service markets are created. The cost burden on private households is reduced, an impact that particularly benefits the poorer segments of a community, who frequently spend a disproportionately large portion of their income on energy. Lastly, everyone benefits from the positive effects on the climate and environment that result from lower greenhouse gas emissions and the reduced consumption of natural resources.

Energy efficiency – the key to a sustainable future!

An example from the field

Since 2003, GIZ – on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) – has been implementing the Indo-German Energy Programme in India, working with the Bureau of Energy Efficiency (BEE) – which is part of the Indian Ministry of

Power –, the Central Electricity Authority (CEA), and a number of other partners involved in the Indo-German Energy Programme.

One of the central elements of this programme is the support GIZ provides in the creation of energy savings legislation (the Energy Efficiency Act) in India. The act that has been established covers a broad range of energy consumers, in part also obligating 480 major industrial users to reduce their energy consumption. High levels of investment in energy efficiency measures within India's industrial sector have led to visible results: around 300 million EUR have been saved annually in energy savings thus far. Additionally, more than 10,000 certified energy managers and auditors now help businesses identify further opportunities for increasing energy efficiency, thereby making a crucial contribution to the project's sustainable impact.

The introduction of energy labelling for household appliances in India has been particularly successful. This programme primarily aims at the voluntary, and in some cases mandatory, labelling of energy use for air conditioners, boilers, refrigerators, and other appliances. The effects have been enormous: through the use of GIZ-supported efficiency labels, Indian energy users have been able to save so much energy that an equivalent of 16 mid-sized coal power plants of 500 MW each have not had to be built. This figure equates to around 8 per cent of the total output of thermal power plants in India.

Furthermore, 85 coal power plants have been equipped with modern operation and planning software and the power plant staff have been trained to optimise power production for maximum resource efficiency. This has resulted in an annual savings of 7 million tonnes of coal, to the benefit of both people as well as the environment.

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Published by

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices:
Bonn and Eschborn,
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As at March 2015

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