Promotion of developing countries

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Energy and the Environment

- Growing energy needs worldwide are jeopardizing the environment

The future increase in global energy consumption will result mainly from demand by developing countries. According to estimates by the International Energy Agency, their total energy consumption will more than double by 2020. On the local, regional and global level this will cause great harm to the environment if we do not act soon. Therefore, promoting environmentally friendly, sustainable energy supply plays a particularly important role in German Development Cooperation (DC).

- Measures for sustainable energy supply

The goal is to make energy available at minimal costs while at the same time ensuring the ecological viability of the energy supply system. Key areas to focus on in order to achieve the goal are: stronger support for the rational use of energy (improved energy efficiency, energy conservation), fuel substitution (use of low-emission fuels as much as possible) and the application of environmentally sound energy technologies. In this connection the promotion of renewable energies is especially important.

- The fundamental problem: distorted energy prices

A central steering element for achieving rational decisions is the price of goods and services. It sends a clear signal for consumer behaviour. In developing countries consumers often pay much less for electricity than it costs to make it available. This leads to excessive demand and, in consequence, to avoidable emissions. If energy costs little there is no point in expecting consumers to use energy more rationally. In this situation ecologists and economists concur: pricing that covers costs must be introduced and subsidies that distort the markets must be reduced. This will create incentives for responsible and gentle use of energy and, indirectly, of the environment.

Wind converters can generate additional income from the sale of CO₂ reduction certificates. Photo: KfW)
• Bringing ecology and economics in harmony by improving efficiency

Enhancing efficiency makes it possible to generate the same energy output (such as heating, electricity, etc.) with less energy input. In many developing countries it is possible to achieve considerable potential with relatively little effort: for instance by modernizing older thermal power plants or rehabilitating transmission lines and distribution networks. Investments in these areas usually also lead to a substantial and, in many cases, very cost-effective reductions in harmful emissions. Frequently retail consumers in the areas of industry, trade, commerce and private households also have great potential to save energy, e.g. through improved technologies of application and consumption control measures (“demand side management”).

• “New” renewable energies: cost is the deciding factor

A very decisive factor for the breakthrough of renewable energies is their cost in comparison to fossil fuels. When hydropower and geothermal heat are used, already today the cost is often lower than for conventional power generation via fossil fuels, even leaving aside the positive effects on the climate. Possible negative impacts on the environment and the population can be counteracted through careful planning and corresponding protective measures.

Wind energy in network operation is approaching profitability. In addition, the use of solar thermal technologies is likely to play an important role as a cost-efficient alternative source of energy in the medium term. Photovoltaics are currently an interesting option for decentralized applications, particularly in niche areas.

The further expansion of this technology depends mainly on the future decline in marginal unit costs, an increase in efficiency and the selection of appropriate expansion and financing models.

• Producing energy with biomass has exploitable potential

The most important renewable energy source available to developing countries is often overlooked: biomass (especially wood and plant residue) is in many places still the most important energy source which poor people in rural and urban areas use to meet their primary energy needs for cooking and heating. Electricity is not a realistic alternative for the poorer groups of the population because it is too expensive. Subsidising the consumption of electricity for the poor would not be financeable. Therefore, a better option is to spread the use of stoves that use wood more efficiently, or biogas plants. Flanking measures for protecting resources and afforestation are also important.

The Nepalese government has been promoting the construction of biogas plants since 1975. (photo: KfW)

• KfW’s contribution

Under Financial Cooperation (FC) KfW can draw on many years of experience in cooperation with developing countries in the energy sector. This applies not only to the promotion of conventional energy but also to renewable energies. A crucial requirement is that the projects must be embedded in a sound sector strategy. Promoting renewable energies is an integral part of the cooperation strategy, but not at any price. Development Cooperation must use the scarce funds as effectively as possible. This is why DC tries to produce as many positive environmental effects as possible with each Euro it invests. The specific costs of avoiding one ton of CO₂ are used to measure its success. As long as these costs are within an acceptable range, projects that promote the use of renewable energies can be financed even when they do not represent the most cost-effective solution.
In the area of renewable energies KfW promotes not only the use of hydropower but also and especially the spread and further development of wind energy (Morocco, India, China, Egypt). In India KfW is working together with the World Bank and the Global Environment Facility (GEF) on the world’s first solar thermal power plant in a developing country. Additionally, it offers supports the expansion of geothermal power plants (Kenya), biogas plants (Turkey, Nepal) and photovoltaic installations (Morocco, South Africa).

The promotion of renewable energies will play an increasingly greater role in FC – and include the private sector. Private investors will become more and more involved in the financing of traditional energy projects.

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Selected articles on this topic:

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- BMZ, Erneuerbare Energie für nachhaltige Entwicklung und Klimaschutz (Renewable energy for sustainable development and climate protection), BMZ Material No. 100, October 1999
- Wolfgang Kroh, Use of Hydropower in Developing Countries – Economic, Ecological and Social Aspects, speech at the International Congress on “Water” in the Forum of the Kunst- und Ausstellungshalle der Bundesrepublik Deutschland in Bonn, Oct. 23, 1998