Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

1.000 Solar Roofs for Brazil

Initial situation

In Brazil, it is common to heat up water using electricity or natural gas. Especially the widespread use of electricity for showers leads to demand peaks in the power sector. The energy required to meet this demand is usually generated from fossil fuels. Brazil has excellent solar irradiation conditions and is facing rising gas and electricity prices. Nevertheless, solar thermal is not yet widely used.

1000 Roofs Programme

In 2009, based on the vast potential for solar water heating (SWH) in Brazil, the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) commissioned Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to develop the "1,000 Roofs Programme". As part of BMUB's International Climate Initiative (IKI), the project aimed to foster the use of SWH systems in Brazil as a sustainable alternative to conventional water heating technologies in different regions as well as in different sectors.

To reach this goal, the project promoted the introduction of SWH systems in the context of ongoing Brazilian initiatives, for instance, in the social housing sector. Furthermore, the programme supported the introduction of national quality standards and of training of technicians for planning, installation and maintenance of solar heaters. It moreover fostered partnerships with the private sector in order to introduce innovative products and solutions.

Last but not least, the project provided support to the Brazilian National Environmental Ministry (Ministério do Meio Ambiente) in the process of creating and coordinating a working group on SWH systems. The group, whose members represented several other ministries and major stakeholders, aimed to draft and implement a national strategic plan for the deployment of SWH systems.

Results

The 1000 Roofs Project was concluded in June 2013.

During the course of the project, Mangueira was the first social housing complex in Brazil to be equipped with SWH systems. It has since served as a reference in the Brazilian social housing sector.

Due to the positive results, the federal government decided to make SWH mandatory for all social housing units within the Minha Casa Minha Vida Programme (My House My Life). The programme, which is coordinated by the National Ministry of Cities and implemented by Caixa Economica Federal (CAIXA), is now one of the largest social housing programmes in the world, aiming to construct over 6 million housing units by 2018. To date, more than 230,000 units have been equipped with SWH, contributing to a reduction of about 7,000t of CO_2 / year. Considering a subsidy of 1,600 BRL per SWH unit (ca. USD 410), Minha Casa Minha Vida invested over USD 94 million in the deployment of SWH systems.

Although the MCMV Programme has yet to undergo a comprehensive monitoring process, a survey by CAIXA based on the first results of the program indicated that families were able to reduce their electricity bills by up to 40%.

Furthermore, Mangueira serves as a model for the city of Rio´s own social housing programme: The city of Rio has introduced solar heaters as a permanent requirement for projects within the Morar Carioca Programme which aims to implement infrastructure measures in low-income neighbourhoods.

The technical assistance provided by the IKI project to the National Energy Efficiency Programme PROCEL has resulted in the creation of a permanent working group. Its task it the assessment of issues regarding quality standards and training of technical personnel, in close cooperation with the national quality and standards institute INMETRO. The working group developed a strategic plan for the deployment of solar heaters in Brazil which envisages to double the SWH installed surface area in Brazil to approximately 15 million sqm of solar collectors by the end of 2015.

According to a REN21 Report, Brazil has doubled its production capacity since 2009, making it the fastest growing SWH market after China and Turkey.

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