SOLAR ENERGY
Promotion campaign

BERLIN
Germany

Despite greatly enhanced equipment quality and improved system efficiencies, neither solar thermal nor photovoltaics have yet succeeded in capturing appreciable market shares in Europe. However, thanks to political engagement on site, there are a number of good examples at local level. With its Solar Campaign, Berlin has set itself the goal of triggering a demand-side impetus for solar energy and thus helping this technology to achieve a breakthrough.

THE CITY

Berlin, capital city of the Federal Republic of Germany and at the same time one of Germany's federal states, has some 3.5 million inhabitants. Today the city, which is still in the throes of restructuring, is viewed as a symbol of how East and West can grow together successfully. Berlin is the seat of numerous federal authorities and industrial companies (notably in electrical engineering). However, Berlin, located on the Havel and Spree rivers, is characterized just as strongly by its numerous museums, galleries, theatres, its Philharmonic Hall, opera and universities, or the botanical and zoological gardens.

Climatic data:

Yearly hours of sunshine:	1,700
Solar radiation:	1,050 kWh/m²a

CONTEXT

As a member of the Climate Alliance of European Cities, Berlin has committed itself to reduce the CO_2 emissions of the city by 25% by the year 2010, from a 1990 baseline. There have been a number of important milestones on that path over the last 8 years: In 1994, the Berlin Senate adopted the Energy Action Plan “Berlin spart Energie”. In 1997, the Senate and the Berlin business community negotiated a voluntary agreement on CO_2 reduction and the intensified use of solar energy. Under this agreement, 75% of all new buildings constructed in any given year are to include solar thermal technologies in their design. Berlin has been taking part in the ‘100,000 photovoltaic (PV) roofs programme’ promoted by the German federal government since 1999. In May 2000, the 2000–2003 energy programme of the Berlin regional state government was adopted. Finally, in the summer of the same year, the Senate Administration for Urban Development launched the Berlin Solar Campaign 2000–2002 together with four further implementing agencies.

In addition to the rising prices for conventional energy sources, a number of policy activities at federal government level have created favourable framework conditions for the installation of solar facilities in Berlin: These activities have included the Renewable Energy Act, a market incentive programme for the use of renewables adopted in September 1999 that was endowed with Euro 153.4 million in 2001, and, finally, the 100,000 PV-roofs programme.

EXPERIENCE IN BERLIN

One goal of the Berlin Solar Campaign launched by the Senate Administration for Urban Development in July 2000 was to improve public awareness of the issue of solar energy and thus to boost investment in solar installations. While other regional states in Germany have experienced strong growth rates, the number of installations receiving support had even dropped in recent years in Berlin. Now, by the year 2003, at least 4% of the owner-occupiers of houses in Berlin are to meet a part of their electricity and domestic hot water requirement from solar sources.

The Solar Campaign was launched on 24.07.00 by Berlin Senator Peter Strieder. The public awareness-raising effort revolves around the Solar-Service-Center, the Solar-Info-Mobile and targeted information and press activities. These include the publication of a free information brochure on solar energy use (August 2001), prize draws and a solar festival. Moreover, the Berlin contractor that installs the largest number of solar installations is crowned as 'solar king'. Training and the exchange of experience are promoted by the Berlin Solar School, by the SolarEnergy trade fair for renewables, and by lectures, seminars, courses and international conferences.

Besides the Senate, the following institutions implement the Solar Campaign:

- the solar industry federation Unternehmensvereinigung Solarwirtschaft (UVS),
- the German Solar Energy Society (Deutsche Gesellschaft für Sonnenenergie, DGS),
- Friends of the Earth Germany (Bund für Umwelt und Naturschutz Deutschland, BUND) and
- the energy consumers' association Bund der Energieverbraucher (BdE)

DGS is preparing a complete survey of all solar thermal and grid-connected PV installations in Berlin, and completed a brochure on thermal solar installations in Berlin in August 2001. A quality label awarded by DGS for PV installations gives system operators an enhanced assurance of the functionality and output of the system. This has been awarded five times up to now.

DGS, BdE and UVS are the implementing agencies of the Berlin Solar School, which was founded in 1996. The UVS homepage provides comprehensive information on the various grant schemes and advice concerning system installation and solar energy use. The new Solar-Service-Center provides competent expert advice on technical issues, gives personal advice on grant programmes and brokers contacts to solar crafts enterprises; a dedicated hotline and homepage (www.berlin-solar.de) have been set up. With its Solar-Info-Mobile, BUND carries out information tours through several Berlin districts, providing information on solar energy in pedestrian zones and in front of shopping centres. The Info-Mobile conducts 20 events of this kind each year – for many citizens of Berlin, these are the first contact with solar technology at all.

Until now, the Senate Administration for Urban Development has provided about a quarter million Euros for the Solar Campaign. In 2001, the implementation of the campaign by the above four partners was supported with a total of Euro 118,000. In addition, the organizations themselves allocated funds of their own amounting to some Euro 100,000.

In the year 2001, the investment bank IBB (Investitionsbank Berlin) commands over slightly more than Euro 2 million in grant funds within the context of the modernization and maintenance programme for housing construction support operated by the Berlin Senate. From these funds, support is provided for solar thermal installations in single-family and two-family houses with collector sizes of 4-10 m^2 up to Euro 1800 per housing unit. In multi-storey apartment construction, the property developer receives a grant of Euro 500 per housing unit – nowhere in Germany are higher grants awarded in this sector. For PV installations smaller than 5 kW_p grants up to 1,000 Euro/kW_p are awarded. Over a period of 20 years from completion of the system onwards, BEWAG, the energy supplier of Berlin, pays Euro 0.51 for every kilowatt-hour of photovoltaic electricity fed into the public grid. From 2002 onwards, this sum will be reduced annually by 5% for installations built from that time onwards.

EVALUATION AND OUTLOOK

The main barriers that the Solar Campaign seeks to remove are a lack of information and a low degree of willingness among both citizens and companies to invest in solar installations. Implementation of the campaign is hampered by the critical budget situation of the city of Berlin, as a result of which the Solar Campaign could only start on 24.07.2000 due to a budget freeze. Attempts are therefore under way to find a grant procedure that is more independent of the city budget.

In 1998, there were in Berlin 300 photovoltaic installations with an overall capacity of 1500 kW_p and some 2500 solar thermal installations (17,400 m^2), mainly on single-family and two-family houses. In August 2001, more than 3200 solar installations (30,000 m^2) were in operation, these including 2700 solar thermal and about 550 photovoltaic installations. Professional press activities (ten press releases) succeeded in the second half of 2000 in greatly enhancing the media profile of solar technology. This was reflected immediately in requests for advice directed to the Solar-Service-Center and the Senate Administration for Urban Development.

Installation Michelangelostrstrasse 63
(Photo: DGS LV Berlin-Brandenburg)

As a result, the grant funds of the IBB were exploited fully for the first time in 2000. A total of 293 solar installations were supported by the modernization and maintenance programme with a total grant volume of about Euro 2 million. These included 123 PV installations with an overall capacity 560 kW_p and 170 solar thermal installations totalling 1,300 m^2. Due to the full exploitation of grant funding in conjunction with a renewed budget freeze from 30.10.2000 onwards, a further 100 applications could no longer be granted. The market incentive programme of the German federal government supported a further 237 solar thermal installations in Berlin.

Nonetheless, the major housing associations have not been enthusiastic in installing solar facilities. There has been scarcely any demand as yet for the quality label for multi-storey apartment building construction introduced by the Solar Campaign in December 2000. Berlin,

however, is a city of tenants, and so the Solar Campaign will yet have to make vigorous efforts to get the ball rolling for this target group.

One impressive positive example of implementation of the solar idea by a housing association deserves mention. This is the facility installed by the Wohnungsbaugesellschaft Berlin-Marzahn housing association, Europe's largest PV system on a residential building. 460 modules amounting to 426 m^2, mounted on the 22-storey south facade, deliver a rated capacity of 48 kW_p. This building was a 'decentralized EXPO 2000 project'.

FURTHER INFORMATION

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