



Earth's physical resources: renewable energy.

The future of solar power

Narrator:

Under the baking heat of the Californian sun, solar energy is in abundant supply.

Compared to Northern Europe, more than twice the solar radiation falls on every hectare of land.

In the barren Mohave desert, parabolic mirrors focus the sun's rays onto a sealed tube carrying a heat transfer fluid.

The liquid gets hotter and hotter as it passes through the serried ranks of mirrors.

Heat exchangers transfer the heat from the fluid to raise steam for electricity generation.

The whole site produces over three hundred megawatts of electricity.

But even under the baking summer sun, solar energy is more expensive than electricity from California's conventional power stations.

In Northern Europe's much cloudier climate, it's unlikely that solar thermal electricity generation will be economically viable in the near future.

These panels use an entirely different technology.

Photovoltaic cells, PV for short, convert sunlight directly into electrical energy.

This means that panels of photovoltaic cells can be attached to the roofs or facades of buildings, where they can make electricity from any sunlight that falls on them.

In Germany the government has decided to encourage householders to install PV systems through a nation-wide scheme called the 100,000 roofs programme.

Gerhard Stryi-Hipp:

The 100,00 roofs programme is a programme that prompts photovoltaics in Germany. We want to install 300 mw of PV's modules in Germany, this is about 100,000 roofs. And it started in 1999 with low interest rates for Photovoltaic systems

Narrator:

But low interest loans weren't the only incentive. The Government also introduced a so-called 'feed-in law' under which high prices are paid for renewable electricity fed into the grid. .

Gerhard Stryi-Hipp:

In addition to that we saw that we wanted to have more of a push on the market so it needed an in addition programme so since 200- we have a feed in law

Narrator:

The price paid for PV power starts at a high level, but reduces by 5% every year

Gerhard Stryi-Hipp:

In the beginning it was 99 pfennig, which was 51 Euro cents per kW hour. A system that is installed in 2002 will get 20 years 48 cents, a system which is installed next year will get 5 % lower over 20 years. This is the concept behind that.

Narrator:

But there are EU laws that prevent Governments from subsidising electricity.

Gerhard Stryi-Hipp:

This is not really a subsidy programme because it is not financed by the budget of the Government. It is financed by the electricity buyers. And so in 1999 we had 12 MW installed in Germany, in 2000 it was about 40 MW and last year we had 80 MW installed.