

## NATIONAL SOLAR WATER-HEATING PROGRAMME

### INTRODUCTION

Water-heating accounts for a third to half of the energy consumption in the average household. In South Africa, this derives mainly from electricity, being the most common energy-carrier employed. Removing this expenditure could lead to significant improvements in the disposable incomes of the lower-income sector.

The equivalent of a large coal-fired power station (2 000MW+) is used to provide hot water on tap to the domestic sector alone. Since the inception of the accelerated domestic electrification programme through grid extension, a major distortion of the national load curve has emerged, with the early evening load peak growing significantly.

Modelling indicates that the introduction of solar water-heating can ameliorate the situation substantially. Switching from electrical to solar water-heating can, therefore, have significant economic and environmental benefits.

There are economic benefits for home owners in reducing their energy bills. Expensive generation capacity to address load peaks will be obviated, and the introduction of new base-load capacity will be postponed. Benefits for the country include reducing greenhouse gas (GHG) emissions, and the release of scarce capital for other pressing needs.

A roll-out programme of solar heaters has commenced, with the focus on middle- to high-income households in Gauteng, the Western Cape and KwaZulu-Natal. The initiative is spearheaded by the [Central Energy Fund \(CEF\)](#).

The DME is investigating the use of solar water heaters as part of the government's plan to increase the use of renewable energy within the current generation mix, and Eskom's Demand Side Management (DSM) - the process whereby an electricity supplier influences the way electricity is used by customers - strategy.

Solar water heaters have many benefits both for the customer and for South Africa. The customer benefits by having a reduced electricity bill and the country benefits because less power has to be generated by Eskom and so less pollution is generated.

A solar water heater normally has a panel with a tank mounted on the roof and sometimes an element too, ensuring that hot water is available whenever needed. Solar water heaters can be used both at residential and commercial/industrial buildings.

The DME has embarked on a project run by the CEF to:

- Produce national standards for solar water heaters;
- Write a code of practice;
- Market awareness to determine savings when using a solar water heater;
- Buy a test rig to allow the [South African Bureau of Standards \(SABS\)](#) to certify the systems; and
- Determine models for financial aid in helping this industry in South Africa.

To date, the South African National Standards (SANS) are now available (SANS 1307) and the code of practise has been finalised at SABS (SANS 10106). The project will see in total 500 SABS certified systems installed in Cape Town, Durban and Johannesburg. The systems will be monitored for one year and thereafter the DME will determine which financial aid model to adopt.

### SOLAR WATER HEATING BY-LAWS

The City of Cape Town is busy drafting of by-laws to support the drive for solar water heating. According to these by-laws, the City will enforce the installation of these solar heaters to all newly built houses to help manage peak demand on the national [Eskom](#) grid. The by-law should be enforced later in 2006.

