



SOLAR ENERGY SYSTEM and ENERGY EFFICIENCY MEASURES

AT THE SUSANNE GRAU RETIREMENT HOME IN WINDHOEK

REQUEST FOR SPONSORSHIP



Request for Sponsorship for the Installation of a Solar Photovoltaic & Solar Water Heating System

*In today's economic climate of rising energy prices and looming power shortages, the Susanne Grau Heim (SGH) plans to invest in sustainable, safe and renewable energy and energy efficiency measures. Within this context, the SGH is considering the purchase and installation of a roof-mounted solar photovoltaic electricity generation plant, the installation of solar water heaters and related energy efficiency measures such as timer switches. This investment is part of the SGH's approach to ensure the prudent use of resources and long-term financial viability. **The SGH would like to raise a total of N\$ 1.9 million through sponsorships. This amount would cover the estimated costs for the installation of the new solar system.** This fund raising proposal was created to inform potential sponsors about the type of investment required, the benefits of investing in solar energy technologies and a motivation why it is worth sponsoring this cause.*

1.) The Need to Invest in Solar Energy

The SGH initiative for the installation of solar energy systems is in line with the Government's White Paper on Energy Policy of 1998 that recognizes *"...the importance of renewable energy and energy efficiency as providing 'sustainability' and 'security of supply' by virtue of diversification and the use of locally available resources"*.

Apart from the fact that electricity prices will continue to rise significantly in the coming years, various analysts forecast a shortage of electrical power in Namibia, up to a point where power cuts are considered likely, i.e. by mid-2016 at the latest. This will have grave consequences for Namibia, and especially for institutions like the Susanne Grau Heim that take care of the elderly.

In winter, older people tend to use more space heating as they are often more susceptible to the cold than younger people. Here, electrical heating is the preferred choice, as it is less of a fire hazard than gas heating. Consequently, in winter, the power demand of the SGH (and the electrical bill) rises to some N\$ 65 000 per month. On the other hand, the summer electricity bill amounts to approx. N\$ 25,000 per month, illustrating the significant effect that higher winter tariffs and the increased use of electricity have.

As a main consumer of electrical energy, replacing electric water heaters by solar water heaters is a financially prudent decision, and is also justifiable in terms of the associated economic and environmental benefits. Refitting the SGH with solar water heaters saves electricity while providing warm water on sunny days, even in case of power cuts, which is an added advantage and contributes to the well-being of the residents of the SGH.

The Susanne Grau Heim (SGH) is a retirement home in Windhoek, which has been in existence since 1931. The SGH is registered as a Welfare Organisation (Reg. No WO2). It can accommodate up to 96 residents, which have to be older than 55 years. The SGH offers a large variety of services, including medical help, assisted living and different leisure activities. The SGH is run by a team consisting of a manager, a secretary and a head nurse, under the auspices of the German Women's Association, with a management board of ten members and one chairperson.

2.) Costs and Savings of Investment

The purchase and installation of a solar photovoltaic system as well as solar water heaters would cost approx. N\$ 1.9 million*. A PV system can reach payback in between 4 and 6 years, after which it generates real savings for the remainder of some twenty years. The refurbishment of the SGH could be undertaken within 3 months. Today, the total electricity consumption of the SGH amounts to some 280 000 kWh per year. A roof-mounted PV system of the given size would generate some 162 000 kWh per year, which implies that almost 60% of the total electricity consumption could be saved every year. With the installation of such a solar PV system, the SGH's electricity bill could be reduced by more than half. Additionally, the solar water heaters would save some 24 000 kWh per year, which implies a combined electricity reduction of more than 65%.

In summary:

- With the installation of a solar PV system and solar water heating, the SGH gains more independence from the current electrical supply.
- A solar PV system can deliver up to two thirds of the SGH's electricity demand, allowing for a significant reduction of the electricity bill.
- Solar powered water heaters do not generally use electricity to generate hot water. Additionally, they still generate hot water even when electrical power is down for longer periods of time.

3.) Environmental Benefits

Investments in photovoltaic energy systems reduce CO₂ emissions and thus contribute to the global efforts to combat climate change. Besides reducing the municipal electricity bills, the renewable energy system would also diminish the carbon footprint of the SGH. As a matter of fact, neither photovoltaic cells nor solar water heating produce any greenhouse gasses at all. The CO₂ emissions avoided by the PV system alone would amount to approx. 86 800 kg per year (values provided by NEC), reducing the impact on the environment quite significantly. Additionally, the power saved through reduced demand would now be free to be used by other consumers in the country.

Moreover, the investment in solar energy would position the SGH as one of the **role model institutions in Namibia**.

4.) Benefits of Sponsorships

If the total cost of N\$ 1.9 million could be raised through sponsorships, SGH would be able to reap the benefits of the PV power supply and solar water heating directly and immediately. Financing by donations would mean that the funds saved by the project would be available, **decreasing the general running costs of the SGH**. The funding of this particular project by sponsors would be a once-off undertaking only, as it will become self-sustainable once it is completed. After that, the running costs for maintenance would be very low for the SGH.

Sponsoring this investment can be seen as part of a charitable drive, as it supports older and vulnerable people, **fitting well into the portfolio of any socially and environmentally conscious company or organization**. Donors for this project will be regarded positively by government, their stakeholders, clients, the media and the general public.

5.) Conclusion

With this lighthouse project, SGH takes a pro-active approach in tackling problems with energy supply which might arise in the near future. SGH will thus be part of the forefront of this development, leading the way on a path which similar institutions in the country might follow. The SGH is known for its conscientious, transparent and accountable handling of sponsorships. Currently, the SGH is supported by the reputable Hermann Ohlthaver Trust and the Wilfrid Metje Foundation.