

## Background

In June 2006 the DRFN submitted a proposal for the construction of a playground item that produces electricity while children play, to run small electrical appliances. Funding was secured through Danida's Namibia Environment Fund and a prototype energy merry-go-round was completed by mid 2007 and installed at the Oprah Orphanage Home Kindergarten, Windhoek, in mid 2008.



## The Kindergarten

Oprah Orphanage Home Kindergarten is situated in the unelectrified suburb of Okuryangava, Windhoek. It is the primary care facility for close to 70 children aged 3 to 6. In addition, older school children also spend their afternoons at the kindergarten. The kindergarten comprises a class room building, a small caretaker residence and an open kitchen area. Energy services were restricted to a small petrol generator to power a TV and 3 lights and wood for cooking. The only playground items comprised a broken swing and a basketball hoop.



## The Energy merry-go-round

Locally manufactured, the energy merry-go-round was a conversion of an old steel merry-go-round commonly used in municipal play areas. Although quite heavy, it is also highly robust. The merry-go-round was fitted with an electric generator and gear box, which produces about 80 Watts electrical energy at a comfortable playing speed of 12 revolutions per minute. The merry-go-round is free-standing and does not require significant site preparation and installation. With the assistance of a crane, or 8 men carrying, it can be easily re-located.



## The Hybrid energy system

The electricity produced by the energy merry-go-round is complemented by a 400 Wp array of photovoltaic solar panels. Electricity is stored in a battery bank and converted by an inverter into alternating current. All buildings have been wired and contain lights, wall switches and plugs. The system now powers 10 lights, a freezer, television and other media technologies as well as sewing machines over weekends. Thermal energy needs have been accommodated through wood saving stoves and a solar box cooker.



## The Hybrid energy system

In addition to implementing a novel and reliable energy supply the Energy Kindergarten Project also investigates the concept of "climate-proofing" urban environments. This concept includes many elements and in the case of the kindergarten involved the planting of 20 fruit trees. This "greening" of the barren sandy yard for food production ensures a steady supply of fresh fruits for small children in their formative years. Responsibility for caring for the trees rests with the children, who have embraced the task with such enthusiasm that trees are now allocated to small groups to avoid over-watering and conflict as a result of over-protectiveness.



# Project Snapshots



This panoramic collage shows some of the external improvements done at the Oprah Orphanage Home Kindergarten.

Deputy Minister Petrina Haingura (Ministry of Health and Social Services) and Robert Schultz (DRFN Energy Desk Coordinator) planting a lemon tree during the inaugural ceremony.



The inauguration attracted media attention in newspapers, radio and television.



Inauguration ceremony held on 22 May 2008.



Dr von Oertzen (Executive Director DRFN) addressing invited guests, flanked by Dr Pape (Ambassador for the European Commissions) and Deputy Minister Petrina Haingura.

## THANK YOU

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