



## REPORT ON ENERGY EXPO FOR PRIVATE SCHOOLS 23 MAY 2016

About 40 learners from the Hermanus Private Pre and Primary School, 44 learners from Hermanus Waldorf and 5 learners from Pringle House were given practical insight into learning achieved in the classroom. The theme of the Expo was the high cost of electricity to both the environment and the end user. What are the alternatives? What other energy sources are available, what is their effect on the environment and how do they work? How can we save money by saving the amount of electricity we use?



Pat also emphasised the loss of electricity in transmission – as much as 75% between the power station and the end user in the Western Cape.



Dr Pat Miller, WCC Board Member, explained to Hermanus Waldorf learners how electricity is generated using a model of a turbine. She showed how the movement of a copper wire relative to an electromagnetic field creates an electric current. Turning a turbine connected to a generator is a common feature in most methods of electrical generation, whether by coal, gas, hydro power or wind.



Rob Fryer demonstrated how solar energy can be harnessed using a photovoltaic panel, storage batteries and an inverter to convert the stored direct current into the alternating current in our electrical circuits.

The batteries and inverter can also be used as back-up power during electrical outages.



Ingrid du Plessis demonstrated the relative efficiency of different light sources. The thermometers in light boxes showed how much energy is wasted as heat with conventional incandescent lights, compared to compact fluorescents and LED lights – the latter converting all the available energy to light.



Ingrid also demonstrated the amount of current drawn by different lighting options. Different light bulbs and strip lights were connected up to an amp meter which showed the amount of current drawn by each.



Shirley Mgoboza demonstrated the use of alternative energy sources. The parabolic solar cooker was a popular exhibit, as was the solar oven.



She also explained how wind turbines and solar panels harness the energy of the wind to convert it to electricity.



Anina Lee explained how an induction cooker works and how a moving magnet can heat a steel pot and how heat energy causes water to boil and turn to steam – the basis on which our power stations operate. The learners also looked at how much electricity we use to boil a cup of water and the cost of the electricity.

It was a pleasure and privilege to host these fine schools at our Energy Expo at the Green House.