



SUSTAINABLE ENERGY EXPO: LAERSKOOL GANSBAAI, GANSBAAI ACADEMIA AND GANSBAAI PRIMËR MAY 2016

During May Whale Coast Conservation presented its Expo on Sustainable Energy to the three Gansbaai Schools. About 120 learners at Gansbaai Primêr, 250 learners at Gansbaai Academia and 60 learners at Laerskool Gansbaai 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?



Sheraine van Wyk explained how electricity is generated using a model of a turbine and generator. She showed how the movement of a copper wire relative to an electromagnetic field creates an electric current. Turning a turbine is a common feature in most methods of electrical generation, whether by coal, gas, geothermal or nuclear reaction (all heating water to form steam), hydro power or wind.



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



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.



Christoff Longland 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. Christoff 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.



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



Anina Lee involved the learners in an experiment to test the relative efficiency of various cooking appliances. Controlling variables such as power settings, amount and temperature of water, the learners timed how long the water took to boil. They also discussed the operation of the induction cooker, 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 were able to calculate the cost of the electricity needed to boil the water.

The participation of the three Gansbaai schools in the Whale Coast Conservation Youth Environment Programme (YEP) is generously sponsored by the Anglo Vaal Industries (AVI) Community Trust.

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