

Off-Grid Energy Solutions for Developing Countries

More than 2.4 billion people burn biomass and fossil fuels for cooking, heating and lighting. Further to this, approximately 1.6 billion people live without access to grid electricity. Inefficient combustion of biomass and fossil fuels result in CO₂ emissions, respiratory illnesses, deforestation and large transfers of resources from poorer to richer countries.

The RESTOR research group, headed by Dr. Tony Robinson in the Department of Mechanical and Manufacturing Engineering, develop off-grid energy solutions for developing countries, including efficient and affordable biomass cook stoves that can generate electricity for night time illumination, mobile phone charging and running other low power applications and appliances.

Last month Tony, along with colleagues Wayne O'Connell and Chloe Kinsella, travelled to Malawi, Africa with Christina Lynam, Chief Executive of Cara Malawi. The group visited the villages of Kaphuka and Dzandi in order to meet with locals, document living conditions and take measurements.

Whilst there, the group met with government officials including His Excellency Liam MacGabhann, the Irish Ambassador to Malawi, and Dr Vincent O'Neill the Director of Regional Strategy for Irish Aid in Southern Africa to discuss how technology developed by the School of Engineering in Trinity can improve the lives of Malawians.

In September 2010 they plan to implement a pilot project in Dzandi to provide 3 villages with innovative cook stove and electrical generators which will be field tested over the ensuing months.



(Pictures from top to bottom: Wayne & Chloe taking solar measurements in Kaphuka; Indoor cooking conditions on a 3 stone open fire; Tony taking thermal measurements in Dzandi; Wayne, Christina, Liam & Chloe at the Ambassador's residence)

