Doug Banks
Renewable Energy
Vision

Chantelle Janse van Vuuren
DBREV Scholar 2018-2019

Incorporating Wind & Sun - Energy for the long run

My Masters research focuses on solar PV and wind energy, with specific interest in the time of use scheduling and optimal geo-location of these farms. This benefits local and rural communities as it creates incentives to develop these renewable plants in their surrounding areas.

Chantelle is currently an Electrical and Electronic Engineering Masters student at Stellenbosch University, with a passion for learning.

Throughout her university career she has been an engineering intern at The Unique Group: Subsea, Offshore and Life Support Solutions and she does part time work for AURORA POWER SOLUTIONS (PTY) LTD.

Undergraduate Project (BEng):

She obtained 85% for her final year engineering project in the development and implementation of a distributed temperature measurement system, for modelling a hot water cylinder's internal heat distribution. The internal temperature distribution of a hot water storage system is an important consideration in designing such a system to minimise heat losses. This temperature distribution is also highly dynamic during the heating and draw-off phases. This project involves the development and testing of a cost-effective temperature monitoring system with distributed sensors to map the dynamic temperature distribution inside a domestic hot water storage system. The internal mapping allowed for real world conclusions to be drawn on the best usage methodologies for these systems to avoid bacteria growth, as well as optimise system efficiency.

Postgraduate Project (MEng):

Her Masters topic focuses on the development of a time of use regional feed-in tariff design methodology to optimise grid support from Renewable Energy Sources. More so, this project aims to incentivise independent renewable power producers to spread energy plants to all areas of the 8 renewable energy development zones. This is achieved with an in-depth solar PV and wind energy production yield analysis throughout South Africa. In turn, this will allow for increased grid support as well as rural community development, while creating equal wealth generation opportunity with regards to renewable energy throughout the country.