

## ***ARESSA THEME IV: Engineering a sustainable presence in Antarctica***

### **The South African Antarctic research base, SANAE IV: micro-climate and wind resource analyses**

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This paper presents the site-specific wind resource assessment and micro-climate study performed on Vesleskarvet, a rocky outcrop on which the South African Antarctic Research Base, SANAE IV, is located. The assessment, partly inline with British and International Energy Council standards, is based on long term hourly and five-minute averaged wind data from a standard automatic weather station. Vesleskarvet's micro-climate is classified as a cold climate; hence, the wind resource assessment concentrates on the ambient temperature and wind conditions. Climatological factors such as the topography, orography etc. which alter the spatial flow distribution were numerically investigated with computational fluid dynamic (CFD) techniques.