

Antarctica New Zealand

Energy Management in Antarctica

Case Study





Antarctic Challenges

- Constrained logistics capability
- Base population ranges from 10 - 100 personnel over a year
- Temperature ranges between -57°C and +7°C
- Full base personnel turnover each year
- Ross Island Wind Energy Network between NZ and US
- Limited data transfer ability



Energy Management Pre-structured Approach

Engineering Systems

- Building Management System
- Monitored usage meters for energy, water and fuel
- Energy efficiency systems –
 - HVAC intake controlled via base CO² levels
 - Diesel generator heat recovery
- Optimised electricity network with McMurdo Station

Management Systems

- Enviro-Mark® Diamond certified Environmental Management System
- CEMARS® certified for greenhouse gas emissions measurement and reductions



Selection of Framework

Energy-Mark programme



Mentored development of custom plan to manage energy use and increase efficiency and performance.

Energy Management Structured Approach



Scope your energy management system, including your energy baseline and current performance; develop policy and indicators



Set, monitor and analyse energy objectives and target, training, awareness and communication

Ongoing Challenges

- Science complexity increasing
- Scott Base Redevelopment project underway
- Energy Management System (EMS) resourcing
- Auditing Requirements
- Targets for 'Antarctic Factor' variables
- Energy-Mark Gold accreditation



Questions

