


**POLAR SCIENCE
FOR PLANET EARTH**

ENERGY & SUSTAINABILITY AT BAS




British Antarctic Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

ENERGY USE AND CARBON MANAGEMENT TARGETS

BAS Energy Policy

- 20% cut, or greater, in emissions (from 2006 levels) from BAS Cambridge and Antarctic research stations by 2012.
- 5% cut, or greater, in emissions (from 2006 levels) from BAS ships by 2012.




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ACTIONS TO DATE

- Appointed Sustainability Engineer
- Installed measuring and recording devices
- Delivered on quick wins



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CAMBRIDGE

Completed

- Site energy use monitoring
- Solar Collectors – boost hot water system
- Lighting controls in offices and corridors
- Sava Watt systems on refrigerated systems
- Radiator reflectors
- Roof-space insulation

To Action

- Central cooled water system
- Biomass boilers
- Photovoltaic panels
- Improve cavity wall insulation
- Power Perfector



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ROTHERA

Completed

- Electrical power use monitoring.
- Solar thermal on buildings
- Replace high demand buildings
- Sava Watt Systems

To Action

- New buildings
- Wind turbines – space constraints
- New generators - CHP

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ISLANDS

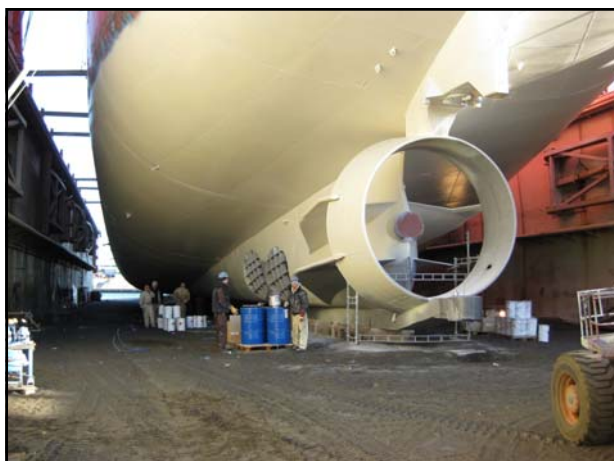
<p>SIGNY</p> <p>Completed</p> <ul style="list-style-type: none"> • Smaller generators and boilers <p>To Action</p> <ul style="list-style-type: none"> • Wind turbines <p>BIRD ISLAND</p> <p>Completed</p> <ul style="list-style-type: none"> • New buildings <p>To Action</p> <ul style="list-style-type: none"> • Bulk fuel and 24 hour power • Wave power 	<p>SOUTH GEORGIA</p> <p>Completed</p> <ul style="list-style-type: none"> • Hydro-electric scheme • 6 K Watt turbine • Solar collectors <p>To Action</p> <ul style="list-style-type: none"> • Replace boilers
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HALLEY VI

- Built for but not with turbines and solar collectors
- Modular CHP generators
- Energy use of Halley VI < Halley V in terms of surface area.

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ENERGY USE

- **KEP.** Reduce fuel demand from 12cum to 1.5 cum/month.
- **Signy.** Reduce fuel demand from 5.7 cum to 3.5 cum/month.
- **Rothera** electrical power 40% reduction. Fuel use has not reduced.
- Convert from 2 stroke to 4 stroke skiddoos – 65% fuel savings
- Coat hull of Ernest Shackleton in Ecospeed. Excellent finish and reduce fuel use.

SUMMARY

- Reducing energy demand has been successful in some areas – less so in others.
- Increased operational activity leads to greater energy use.
- A greater push is needed to achieve energy use targets

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