

ENERGY MANAGEMENT



CAPABILITY STATEMENT



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CAPABILITY STATEMENT *Energy Management Services*

Introduction

VRT Systems is primarily a systems integration business that has provided services to government, commerce, industry and the resources sector, in the areas of 'Energy Management' (for over 20 years) and (more recently) 'Greenhouse Gas' reporting.

Our role is essentially to design and implement systems that improve our customer's energy efficiency and compliance with a plethora of legislation and government initiatives including:

- Green Star
- NABERS
- EEO
- EEGO
- NGER
- Mandatory Disclosure of Energy Efficiency

and to do this by absorbing the hassles from related contracting parties in this increasingly complex area (technically and legislatively). To manage this process effectively, we have developed our own methodology: "The NO HASSLES Approach", appended at the end of this Capability Statement.

The question many organizations are now asking themselves is "What can sustainability initiatives do for my business?"

VRT can help to deliver on the answers: *Measure, Manage, Minimize and Profit*

1 Audits: Energy Efficiency, Carbon Footprint

VRT conducts audits in the above areas, bringing in specialist technical and domain resources where required. Deliverables from the audits include a Business Case and Implementation Plan. We have in-house expertise in applied finance to ensure the ROI calculations and business case are robust.

Our experience has shown that many of the energy efficiency projects have payback periods of 1 to 3 years.

2 EMS (Energy Management System)

As systems integrators for over 20 years, we have considerable expertise in the design and implementation of metering and monitoring systems to provide a complete energy management solution for your facility. These solutions cover the entire WAGES (Water, Air, Gas, Electricity and Steam) space. The software monitoring systems can be local or hosted remotely.

We often partner with other companies to provide these solutions. VRT has been a distributor of the SATEC range of power analyzers and meters for the past 15 years. We have a multi-faceted relationship with Schneider and employ an ION Certified Engineer. Recently VRT has formed an on going relationship with CET, manufactured by China's leading energy systems integration organisation, and can now offer a product warranty of up to 5 years as part of our commitment to excellence. VRT has traditionally drawn on existing products where they meet customer requirements, but in cases where vendor supplied products have been absent or inadequate, VRT has developed its own, e.g. the RUMS energy monitoring and GHG reporting system for Defence, the WAGES Hub™, an energy forecasting system for Xstrata, etc. The WAGES Hub™, is ideally suited to collecting data from a mix of pulse and memoryless power meters, cable and wireless connections, on multi-site and campus types of facilities.

3 NCS (Network Control System)

This covers the management of the performance and integrity of the electrical supply system, as well as interfaces to related systems, e.g. generator control system, other co-gen and tri-gen systems, BMS, EMS, fire, security, etc. Our relationship with Schneider, particularly our Citect Integration Partner relationship, enables us to implement highly integrated solutions incorporating Schneider products: PowerLogic SCADA, automation (PLC), power protection, power quality, intelligent switchgear, etc.

4 EAS (Emissions Accounting System)

VRT can deliver systems built to account for all of the 6 greenhouse gases and deliver reports meeting the NGER standard. It includes interfaces to EMS, plant historians and ERP systems, as well as facilities for importing spreadsheets and manually collected data.

5 BIM (Building Information Modeling) and ecoEducation Systems

The BIM concept is based on a single, through life 3D model and associated database. It covers: concept, design, construction, operations and maintenance. VRT has the technology to take this into the operations and maintenance phases of a building's life by connecting real-time data sources to the 3D models: EMS, NCS, BMS, etc. We can also integrate CCTV and documents linked to equipment in the model. Business applications are now being delivered based on 4D games technology and the latest Microsoft Windows Presentation Foundation software. This integrated suite of technologies enables the creation of advanced HMI displays, visualisation, and immersive 3D environments, across a range of desktop, web and mobile devices. We can use this to deliver foyer displays and other highly realistic forms of ecoEducation.

Testimonials

Xstrata PLC in Australia has been involved from the beginning of the Energy Efficiency Opportunities program (EEO) and sees the energy efficiency pathway as the most cost effective way and perhaps the only way to achieve any early gains in greenhouse gas reductions. Involvement in EEO has highlighted the low quality of data and information available about plant energy demand and consumption and particularly our ability to meet one of the requirements of the EEO process which is an energy mass balance.

In total, over the 18 month period of the installation of the energy management system, the interval meters and the required communications channels, Xstrata expended approximately \$500K. In the first year, accurate measurement of the various site power demands and energy consumption has helped justify several projects, the first two of which have resulted in annual savings of approx \$300k in energy consumption alone. The accumulated benefits over the coming years will far outweigh the cost of the system.

Quote – Greg Will, Energy Management Superintendent - Xstrata Copper. 14 December 2007

The “REGIONAL UTILITIES MANAGEMENT SYSTEM” (RUMS)

The RUMS is a state of the art metering and monitoring system that provides real time submetering capability at Gallipoli Barrack. It provides accurate and comprehensive electricity consumption data for all units located within the Barracks. The RUMS is allowing Defence to implement an ongoing Energy Management strategy within South Queensland, which will help us to improve energy efficiency and reduce greenhouse gas emissions.

The RUMS also has the capability to control electrical plant and equipment, once the necessary hardware is installed. This capability is programmable and flexible and will only be implemented were it can be effective and always after consultation and agreement with users. All equipment which may be switched off by RUMS, will be provided with manual override switches which will enable occupants of any affected area to override RUMS and switch such equipment back on. Through RUMS a number of projects have already been identified. For example, electricity consumption at 2HSB has been reduced by around 30% by initiatives that introduced improved water heating technology.

Kevin Bridge, Regional Energy and Sustainability Manager - Australian Department of Defence.
Energy and Sustainability Management Bulletin No.1

John Paul College (EMS)

John Paul College (JPC) is an early adopter of Energy Management Systems (EMS) provided by VRT. When commissioning JPC's EMS, it was found that one building was using significantly more power than expected, especially as it was during school holidays. Further investigations led to the discovery that the air conditioning systems had been set incorrectly and were running at full capacity every 15 minutes whilst no one was occupying the building. JPC claim energy savings of 30%, equating to \$120K pa.

JPC started their EMS with a water management system. The initial expectation was that they would be able to save 30% of the water used on site. By actively monitoring their water usage and introducing water saving programs, JPC was able to reduce water usage by 60%. This represents a saving of \$180K pa.

Most schools can save between 10-15% on energy costs through better energy management. If they invest in energy efficient technology, savings of up to 40% are achievable. Savings are both financial and environmental.

The “No Hassles” Approach

- Define metering and integration scope
- Manage relationships between all parties
 - Managing contractor
 - Electrical contractor
 - Board builder
 - Mechanical services contractor
 - Hydraulics contractor, etc.
 - Design review – simplify, reduce cost, maintainability
- Develop meter and monitoring software
 - Reports/ billing
 - Emissions Accounting System
- Staging and Factory Acceptance Test
 - Implement the system on site
 - Commissioning
 - Test sheets
 - Documentation
- Site Acceptance Test
- Risk Transfer
 - Compliance Documentation
 - Greenstar
 - NABERS
 - NGER
 - System Guarantee – 12 months (Defects Liability)
 - RPEQ Qualification
 - Support Agreement (through life support)