

Queensland Health
Strategic **Energy**
Management
Plan

for ClimateSmart Buildings
March 2009



Foreword

The Queensland Government has committed to playing its part in meeting a national greenhouse gas emission reduction target of 60 percent by 2050 through the announcement of its ClimateSmart 2050 initiative – *Queensland Climate Change Strategy 2007: A Low Carbon Future*.

The *Strategic Energy Management Plan* will assist our workforce in integrating sustainable practices into our day-to-day ethos and support our existing sustainability progress.

The Department will be better positioned to report on energy performance and at the same time determine how we can most effectively adopt minimum energy performance measures to meet the individual needs and the revised portfolio energy intensity targets.

Queensland Health currently plays a leading role within Government in the reduction of electricity usage and resultant carbon emission reduction through the introduction of the Energy Efficiency Program, across our building portfolio.

It is our aim to improve energy efficiency, and consequently reduce whole of life cost and environmental impact of Queensland Health operations, and by doing so lead the community by example.

It is our corporate and social responsibility to endeavour to make a change for a low carbon future.

I encourage you to support this initiative as together we can make a difference.

Mick Reid
Director-General
Queensland Health

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Queensland Health Strategic Energy Management Plan

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Carbon Management Unit
Health Services Purchasing and Logistics Branch
Queensland Health
GPO Box 48
BRISBANE Q 4001

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Overview

The Vision

As the social and political agenda moves toward issues such as climate change and environmental sustainability, the Queensland Government has put in place policies and expectations that all departments and agencies will work toward reducing their environmental impact.

Queensland Health has embraced these requirements. Our values include the ongoing commitment to the community and caring for our environment. The Carbon Management Unit (CMU) was established in 2004 and is responsible for increasing environmental awareness in Queensland Health through development and implementation of an environmental program to build environmental standards into our management and business practices.

In this short period, Queensland Health has improved environmental performance beyond Queensland Governments expectations, and in doing so, has achieved national recognition.

Queensland Health is proud of its achievements towards sustainable operations and is fully committed to raising the bar and striving for continual improvement in environmental management practices.

The Principles

Queensland Health adapts and extends sustainable development practices in its culture, strategy and practice. The practices are reinforced throughout by high-level involvement and the principles of sustainability and improved performance. The principles extend toward issues of the social and political agenda and the expectations that the Department will work towards reducing their environmental impact.

Queensland Health has developed its strategic position for the Energy Management Plan aimed at ensuring that the Department consumes the minimum amount of energy necessary whilst maintaining the capability to provide quality health care and lead by example.

The Policy

The *Strategic Energy Management Plan* gives an overarching account of how Queensland Health will meet the requirements of the Queensland State Government initiative ClimateSmart 2050 (*Queensland climate change strategy 2007: a low-carbon future*), and the foci of the ClimateSmart Buildings policy *Strategic Energy Efficiency Policy for Queensland Government Buildings* (January 2008), and being mindful that it must be pro-active in establishing responsibility within the *Strategic Energy Management Plan for the Climate Smart Buildings policy Carbon Reduction, Strategy* (December 2007).

Under the ClimateSmart Buildings policy, Queensland Health is required to report annually on energy management performance and demonstrate the steps taken to consume energy more efficiently under the obligations of the Government's *Strategic Energy Efficiency Policy for ClimateSmart Buildings* as prepared by the Queensland Department of Public Works. Reports are to be available through the Built Environment Materials Information Register (a web-enabled database and application hosted by the Department of Public Works).

The *Strategic Energy Efficiency Policy* applies to all Queensland Health facilities and includes the development of a range of performance indicators on the progress against mandated consumption targets of 5 percent reduction by 2010, and 20 percent reduction by 2015 – using 2005/06 as the baseline.

Energy Performance Framework

While energy is essential to the processes and activities of Queensland Health, the environmental impact from energy use is the effect requiring the energy management plan.

Energy performance requires measures (energy indicators) and the table below illustrates:

Table 1: Energy indicators	
Descriptor	Units
Direct Energy Use	Multiples of Joules (MJ)
Indirect Energy Use	Multiples of Joules (MJ)
Initiatives to use Renewable Energy	Not applicable
Initiatives for a Demand Response	Not applicable
Initiatives for increase in Energy Efficiency	Not applicable

* Note: A Joule for electricity measure is 1kWh = 3.6MJ

As environmental impacts are closely linked to energy use, greenhouse indicators form part of the strategy for energy management and the scope for this plan refers to emissions that are direct emissions from sources that are owned or controlled by Queensland Health. The greenhouse indicators are illustrated in the table below:

Table 2: Greenhouse indicators	
Descriptor	Units
Total greenhouse gas emissions	Tonnes of CO ₂ equivalent
Initiatives aimed at reducing greenhouse emissions	Not applicable

* Note: CO₂ equivalent is a range of those greenhouse gases of relative abundance that includes: water vapour, carbon dioxide, methane, nitrous oxide and ozone.

The Commitment

Queensland Health is committed to:

- minimising energy consumption, its carbon footprint and energy demand.
- achieving enduring cultural change in carbon reduction management across the entire organisation.
- meeting obligations under the Strategic Energy Efficiency Policy.
- the continual improvement in energy performance against appropriate targets and benchmarks for carbon management.

The Queensland Health Strategic Energy Management Plan has three key processes for success, which are represented in the figure below:



The Carbon Management Unit is the interface to maintain those tools to ensure the necessary awareness and training sessions interact effectively with a minimum disruption to the core business of Queensland Health. All participants are held responsible for their actions in the use of the strategy and the interaction of those accountable will form the quality cycle.

Ongoing actions are designed for effectiveness, and many of the actions are linked to directly improving the quality of energy meter data and the roll-out of smart meter technology will be assumed to enhance the capability to feed into a monitoring and reporting system that will better inform for ongoing action. Queensland Health fully appreciates awareness and training activities to provide staff with the skills and understanding to create a culture of enduring energy management and carbon management within the Department.

The Accountability

The development of the strategic responsibility rests with the Senior Director, Health Services Purchasing and Logistics and the formulation of the measures; implementation and management rests with the Carbon Management Unit of Health Services Purchasing and Logistics. The Carbon Management Unit, previously known as the Eco Efficiency Unit, is recognised for excellence in achieving sustainable environment and received the *2006 Premier's Awards for Excellence in the Public Sector*.

Each Health District CEO is responsible for balancing the need for energy efficiency against capability, comfort, amenity and maintenance requirements of the facilities in their District. It is their responsibility to deliver on the measures in the Energy Management Plan for the District.

Queensland Health requires performance be in accordance with the policy and the Energy Management Plan. As part of the Carbon Management Unit's responsibilities, it will engage with Health District staff and coordinate the overall district awareness and training needs.

Under the authority of the Director-General, reporting under the Energy Management Plan is managed by the Carbon Management Unit, and Districts report to them under the direction of the Deputy Director-General, Corporate Services.

The office of the Director-General is responsible for the Secretariat in promoting the reporting to the Parliament on the progress against the Energy Management Plan.



The Strategy

Better Energy Management Practice

ClimateSmart Buildings – a sustainable future



water conservation

Water conservation, capture and reuse is saving over 600 thousand kilolitres annually. This equates to saving approximately 192 Olympic swimming pools.



carbon reduction

The guaranteed reduction of CO₂ emissions is over 46 thousand tonnes a year. That's equivalent to approximately 10 thousand motor vehicles off Queensland roads annually.



energy usage reduction

The introduction of energy conservation measures in lighting, heat ventilation and air conditioning will reduce usage by over 50 million kilowatt hours annually and contributes to a lower carbon footprint.



renewable energy

A number of hospital carpark roofs have been covered in solar panels to generate hot water and has a significant impact on the amount of CO₂ being emitted.

Introduction

Increasingly the community, the state, national and international governments are addressing the issues of climate change and the need to reduce our carbon footprint.

As part of Queensland's response to these concerns, the Government released its initiative *ClimateSmart 2050 (Queensland Climate Change Strategy 2007: A Low Carbon Future)*, the policies for the *ClimateSmart Buildings Carbon Reduction Strategy* (December 2007) and the *Strategic Energy Efficiency Policy for Queensland Government Buildings* (December 2007).

Queensland Health has established its electricity usage baseline for 2005/06 and is committed to reduce that usage by 5 percent by 2010 and 20 percent by 2015. Five very important considerations need clarification for this commitment and these are:

1. Increasing demand for health services.
2. The necessary growth in health care facilities.
3. Facilities vary according to age, location and climate region.
4. The actions of courts, regulators and Government impact on the deliverables.
5. The principles that align with the social and political agenda for reducing the environmental impact of Queensland Health business.

The synergy of the Queensland Health *Strategic Energy Management Plan* is contingent on awareness and commitment to three strong performance areas, namely:

- The Essential Business Systems and Processes
- Mandated Energy Efficiency Performance
- Monitoring and Reporting.

The Carbon Management Unit has determined that the ClimateSmart initiative directs that all energy units shall be converted into joules (expressed as mega-joule – MJ) and the formulae for this comparison is 1 kWh = 3.6MJ. In this way a common indicator is possible for the measure of heat, electricity and mechanical work. All greenhouse emissions units are expressed as tonnes of CO₂ equivalent and this is consistent with common policies and can indicate water vapour, carbon dioxide, methane, nitrous oxide and ozone.

Actions and behaviours of the end-users are the key to energy use and carbon reduction. The challenge is to devise the strategy and manage the end use behaviour of people within the scope of the *Strategic Energy Management Plan*. The following principles underpin the *Strategic Energy Management Plan*:

- **Relevant and timely information** to allow staff to take action and demonstrate results
- **The capacity and understanding** within the Department to drive action
- **Efficient and effective sources of energy** to meet the requirement. For example this may require changes to the method of procurement of energy to include internal generation and external renewable inventories
- **A participation requirement** to reduce energy waste by only energising equipment when it is needed, for example, turning off the lights and air conditioning in an empty room
- **Optimising the facilities end-use** to use minimum energy while meeting amenity and functional requirements
- **Selecting energy efficient technologies and committed partners** when acquiring new, replacing or retrofitting equipment.

The strategic work area for the *Strategic Energy Management Plan* is structured into the following five sections:

1. **Roles and Responsibilities** – which identifies the key areas in Queensland Health with responsibilities for *Strategic Energy Management Plan* implementation
2. **Energy Performance** – which describes the process of capturing, interpreting and tracking energy usage information so that the effect of energy practices and management initiatives can be quantified
3. **Monitoring and Reporting** – which defines how energy information will be made available to those with energy management and reporting responsibilities
4. **Training and Awareness** – which focuses on motivating and empowering appropriate Queensland Health personnel to play their role in the *Strategic Energy Management Plan* implementation
5. **Business Systems and Processes** – which centres on making energy efficiency part of the way Queensland Health does business, with a view to achieving enduring cultural change.

The Strategy is modelled to achieve the objectives of the detailed performance requirement and environmental targets consistent with those set out in the ISO 14001 standards.

In reference to the terms sustainable development, sustainability, and improved performance; Queensland Health describes:

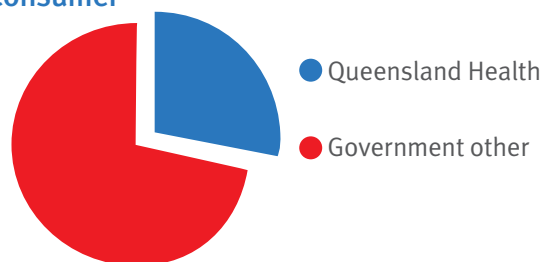
- **Sustainable Development** – meeting the needs of the present and the future without compromise for the ability to service some future need
- **Sustainability** – a balance of economic, environment and society in need
- **Improved Performance** – enhancing the continual improvement of the process of energy and carbon footprint management systems consistent with government policy
- **Procurement** – process of the business to acquire goods or services and to provide a methodology to achieve supply chain carbon neutrality by 2010.

Corporately Queensland Health has statewide responsibility for policy development, population health, system wide planning, performance monitoring, high level resource management and provision of Ministerial support and advice.

Districts have the responsibility for the delivery of health services across the State. The effectiveness of these services is managed locally through appropriate planning, resourcing, networking, monitoring, community consultation and clinical decision making to ensure that services meet community needs. Achieving the delivery of quality health services involves the development, management and monitoring of a complex set of activities and services in the areas of acute hospital services, community and population health services as well as services for specific need groups.

Queensland Health is the largest consumer of energy among all state occupied facilities (30 percent, according to 2005/06 baseline year consumption figures), and thus has significant responsibility to show leadership in how it can reduce energy use and set the path to carbon reduction.

Consumer



Queensland Health, as are all other state agencies, is committed to the mandate of consumption targets of 5 percent reduction by 2010, and 20 percent reduction by 2015. The target baselines are set using 2005–06 for the measurement.

This *Strategic Energy Management Plan* aims to give direction and authority for Queensland Health to build and develop the necessary systems and quality to approach energy management as an ongoing carbon reduction program and part of day-to-day operations, rather than being approached as a discrete program over a limited time span.

Energy Management

– Instruction and Policy

Instruction and Policy

Managing energy efficiently in Queensland Health is a key requirement of the ClimateSmart initiative and the framework for the practice is strengthened through the commitment and endorsement of executive management to the *Strategic Energy Efficiency Policy*.

Adjunct to the *Strategic Energy Management Plan*, a Director-General Instruction is issued to commit the agency to improve its practices.

The development is to manage:

- significant energy use aspects and risk
- statutory and legal obligations
- promotion and support for the ClimateSmart policies
- the Energy Management objectives, benchmarks and targets.

Energy Policy and Procurement Guidelines

The *Strategic Energy Management Plan* is descriptive in that where procurement processes engage suppliers and/or products those processes require:

- meeting standards suitable under a ISO 14001 audit provision
- ability to be independently assessed for labelling standards under ISO 14024
- compliance with self-declaration labelling standards under ISO 14021.

The procurement guidelines include supply and/or products as:

- refurbishments and relocations
- equipment
- other as required.

1

Roles and responsibilities

Objective

To establish energy management, its support, and its implementation as an accountability measure.

Overview

Within Queensland Health, the energy management roles and responsibilities are defined at three levels: Corporate, District and facility level.

The energy management plan is assigned to be the most effective whilst maintaining what is essential, incorporating what is required and reporting on the portfolio performance.

The assigned roles and responsibilities are:

Corporate:

- The Director-General accepts the directives of mandatory energy performance and the commitment to *ClimateSmart Policy and Directions* and provides the *Annual Energy Management Plan Progress Report* to the Department of Public Works.
- The Carbon Management Unit is authorised to manage the strategic objectives and responsibilities of the energy management plan and under the direction of the Deputy Director-General, Corporate Services, drive the monitoring and reporting awareness, training requirements and compliance reporting.

Health Districts:

- The District CEO accepts strategic requirements and provides the directive to give to the operational areas a clear direction to meet the indicators. And provide the input to effectively report on the Annual Health District Energy Management Plan and Performance Reporting.

Facilities:

- The Facilities Managers have the responsibility for improving the standard in terms of technical optimisation and maintenance, including the comprehensive maintenance service arrangements, the use of contractors or other party who will be responsible for balancing the need for energy efficiency against capability, comfort, amenity and maintenance requirements.

1.1. Health Executive responsibility

Leadership from Queensland Health Executives is critical to ensuring a coordinated message is promulgated across the organisation supporting the *Strategic Energy Management Plan* objectives.

Director-General, Queensland Health:

The Director-General has carriage for driving all aspects of *ClimateSmart 2050* initiative and the mandated responses to the *ClimateSmart Building Policy*.

The Director-General directs the Carbon Management Unit as the energy management team, and undertakes to annually review and produce an improved *Strategic Energy Management Plan*, as well as meeting other external reporting requirements such as annual submission of the whole-of-government Built Environment Materials Information Register (BEMIR).

1.2. Health District energy management responsibility

Each District is required to develop an Energy Management Plan and performance report channel, and this to be submitted to the Carbon Management Unit for review on an annual basis. This plan should communicate to all responsible, the rollout of the planned energy efficiency initiatives to be undertaken in the upcoming year and should also contain a review of regional energy performance and progress against mandated consumption reduction targets.

Whilst each District is structured slightly differently, there are common key roles and responsibilities for energy management.

Key roles in the energy management plan implementation are at District level.

The District CEO is responsible for day-to-day energy and environmental management in their District. This responsibility extends to:

- Determining the number of staff dedicated to energy management
- Promulgating the *Strategic Energy Management Plan* through to the Facility Manager and ensuring that the progress of the Energy Management Plan objectives is regularly assessed and discussed at appropriate District meetings.

1.3. Facility Managers

The designated Facility Manager is responsible for:

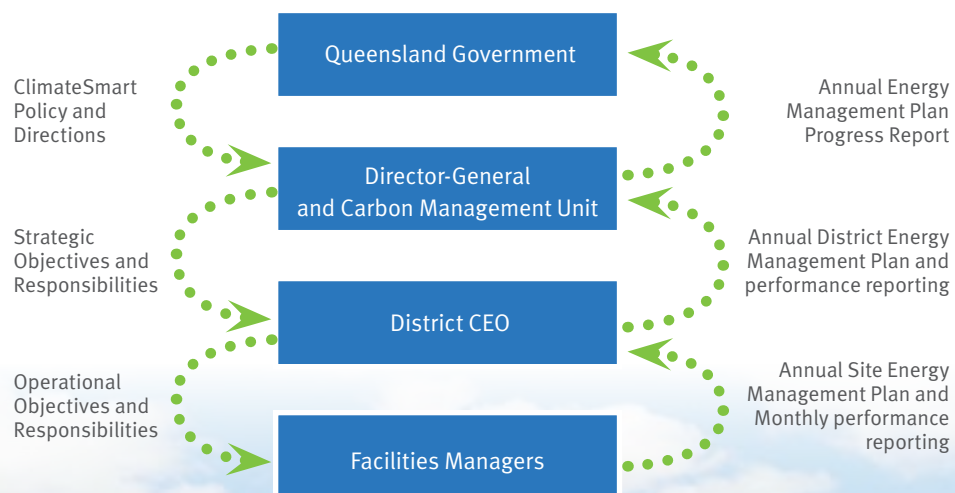
- daily coordination and implementation of energy initiatives in the districts
- analysis and trending; identification of opportunities and outliers
- coordination of the implementation of technical projects; implementation and coordination of district awareness and training activities
- reviewing the annual Energy Management Plan
- developing the annual District Energy Management Plan and site by site periodic performance reports.

The appointee is also responsible for ensuring adequate communication channels exist to facilitate implementation progress and energy performance.

Each site Facility Manager is responsible for balancing the need for energy efficiency against capability, comfort, amenity and maintenance requirements. The management responsibilities that are summarised below:

- Incorporate energy and demand management practices into operating procedures
- Consider and implement, where appropriate, energy and demand management implications in maintenance, facility and spatial planning
- Prepare progress reports outlining energy consumption in comparison to historical usage (baselines) and/or targets
- Provide progress analysis explaining variations/exceptions to baseline and/or energy targets
- Demonstrate that all sub-contractors adopt energy efficient operations and maintenance practices.

The following diagram illustrates the responsibility framework of Queensland Health:



2

Energy performance

Objective

To establish performance baselines and targets and better influence energy use throughout the Queensland Health building portfolio.

Overview

The Carbon Management Unit in consultation with each District CEO will:

- Gather activity and energy consumption information (electricity) for Queensland Health facilities and analyse this data from a period of 12–24 months
- Establish energy consumption baselines and set energy performance targets
- Enable effective monitoring and management of energy such as the identification of outliers, problem areas and quantification of actual improvement against aspiration.

2.1. Identifying and installing sub-metering

To understand and ultimately improve energy performance, detailed information is required. The detail on energy bills provide very limited amounts of information on what is behind end-use consumption, such as which facilities and what equipment uses most energy, when, and under what usage conditions.

Tracking sub-metering data at a detailed facility level will provide valuable additional information so that Queensland Health can begin a program to establish a primary focus on energy performance by facility type. This will allow Queensland Health to fully understand and evaluate usage patterns and identify potential energy savings.

Some facilities have extensive sub-metering already in place, or a program underway, however the number and types of sub-metering installed, communications and front-end systems are highly variable from site to site.

Increased coverage and improved access to sub-metering information will enable Queensland Health to:

- Conduct analysis of data to increase understanding of consumption patterns
- Establish baselines and conduct exception reporting
- Identify outliers and improve performance
- Assess actual performance resulting from energy conservation measures
- Report comprehensively on energy performance to satisfy responsibilities.

The Carbon Management Unit, in consultation with District CEO, will be responsible for reviewing existing sub-metering and identifying any additional sub-metering requirements.

Where sub-meter data is being gathered it is easier to identify the activities that influence energy use.

2.2. Establishing performance baselines

Analysis of energy data in relation to identified parameters will enable energy performance baselines to be established.

Energy performance requires measures (energy indicators) and the table below illustrates:

Table 3: Energy Indicators		
Descriptor	Units	Comments
Direct Energy Use	Multiples of Joules (MJ)	Direct energy use by core use sources
Indirect Energy Use	Multiples of Joules (MJ)	Indirect energy use
Initiatives to use Renewable Energy	Not applicable	Initiatives to use renewable energy sources
Initiatives for a Demand Response	Not applicable	Initiatives to use resources more effectively and encourage cultural change
Initiatives for increase in Energy Efficiency	Not applicable	Initiatives to increase energy efficiency and to continually improve

* Note: A Joule for electricity measure is $1kWh = 3.6MJ$

As environmental impacts are closely linked to energy use, greenhouse indicators form part of the strategy for energy management and the scope for this plan refers to emissions that are direct emissions from sources that are owned or controlled by the Districts. The greenhouse indicators are illustrated in the table below:

Table 4: Greenhouse gas indicators		
Descriptor	Units	Comments
Total Greenhouse Gas Emissions	Tonnes of CO ₂ equivalent	Emissions due to direct energy use by core use sources
Initiatives aimed at reducing greenhouse emissions	Not applicable	An assumption that the carbon footprint will have a initiative based on a carbon trading market. This view is supported by the ClimateSmart policy.

* Note: CO₂ equivalent is a range of those greenhouse gases of relative abundance that includes; water vapour, carbon dioxide, methane, nitrous oxide and ozone.

In the initial 12 months of the design of the energy management plan, energy intensity (performance) baselines for facilities (providing there is no large variation to normal operations during this period) are to be recognised and as more data is gathered, additional indicators may be identified and included in the ongoing analysis and baseline development process.

This process has already begun and will continue over the duration of the plan. Adequate historical consumption and activity information is already available for some sites and facilities to allow for the setting up of performance baselines. There are other facilities for which available information has not been gathered or stored in the past, but it can begin to be captured and stored immediately upon request. In other cases, sub-metering will need to be installed before the data collection process can begin.

The Carbon Management Unit and the District CEO's will progressively report on performance against these new performance indicators in the BEMIR.

2.3. Establishing performance targets

Setting performance targets will allow Queensland Health to demonstrate to internal and external organisations how energy is being used and to better understand variation in consumption.

Energy consumption may grow for many reasons even if energy efficiency measures are being implemented (e.g. service growth, new buildings, increased personnel and operational changes).

3 Monitoring and reporting

Objective

To provide current and easily accessible energy performance information to all relevant Queensland Health personnel and contractors as required.

Overview

The Carbon Management Unit in consultation with Districts will:

- Co-ordinate the setting up and maintenance of a data collection and reporting system so that relevant energy performance data is available to site, District and corporate level management
- Co-ordinate access to electronic sub-metering data for all major sites (using existing site front-end systems or external service providers as appropriate).

3.1. Monitoring and reporting system

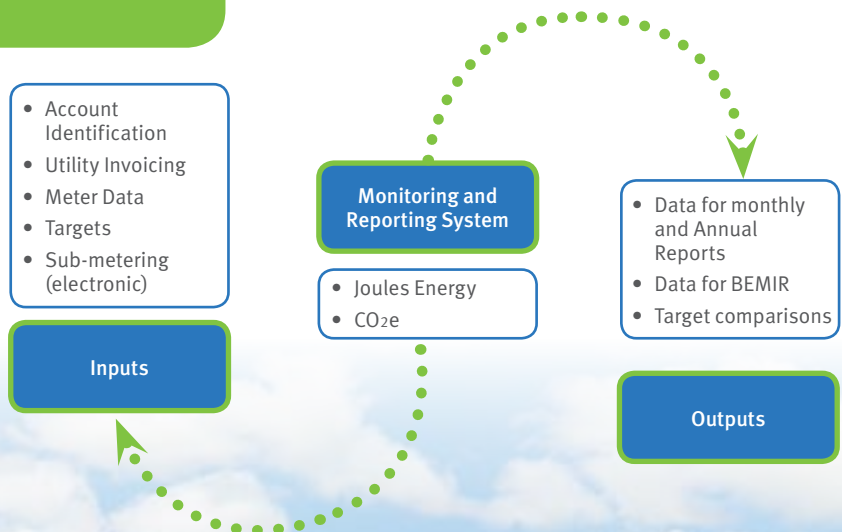
The many sources of data across Queensland Health, will be collected, collated and displayed for the purpose of energy management and the information includes utility invoice data, sub-meter data (manually read and electronically captured) and asset data.

Existing mechanical or spinning disk meters are not capable of transferring data electronically. Where this is the case, the appropriate Facility Manager or contractor will report on available sub-meter consumption information (manually read and/or electronic) on a progressive report basis.

To date, utility invoice data (including energy consumption data) obtained from energy retailers is not stored centrally, and information on the appropriate time, energy use, energy audit management system will be collected and centralised within the developed energy services database. The database will be used to validate consumption information to support the annual whole of government reporting requirements (into BEMIR).

There are various levels of energy management across Queensland Health with different information requirements. Performance data will be used by energy management personnel across various levels of Queensland Health to assist in making investment decisions, providing feedback on achievement as well as poor performance, identifying outliers and problem areas, satisfying Government reporting requirements and demonstrating continual improvement in energy performance to responsibilities.

The monitoring and reporting system concept is presented in diagram below:



3.2. Site energy management

Accessible energy consumption and performance data will enable site/regional personnel to identify problem areas and track performance at a higher level. This information should be supplemented by up to date interval data, which is useful for day-to-day energy management such as identifying opportunities for improvement in a facility at a particular site.

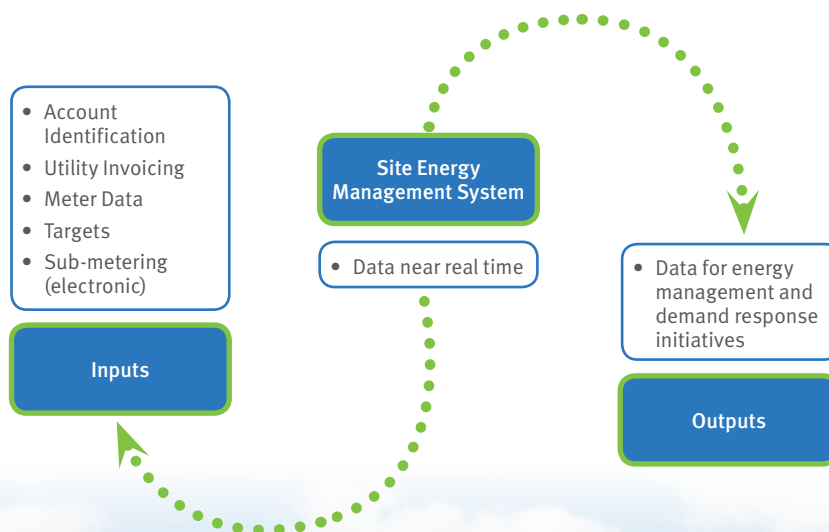
A number of facilities have access to front-end systems, which display interval data, aggregated monthly/quarterly/annual consumption and demand data, where electronic data is available from sub-meters. However, the majority of existing systems are often limited to one or two computer terminals at a set location, which prevents access to data for many personnel with an energy management role.

The Facility Management contracts will require that available data is reviewed and monitored regularly so that facilities are more effectively managed. Specifically so that:

- high consuming facilities are closely monitored
- demand peaks are identified and reduced where possible through load shifting, load scheduling or load shedding
- overnight loads are scrutinised and minimised where possible
- consumption is reduced where activity levels are low
- poor performing facilities are identified and action is taken to improve performance.

Where contractual engagement of the comprehensive maintenance service contractor is not an option in the short term (*refer to Roles and Responsibilities Section 1.3*), and sub-metering information is available, the Carbon Management Unit in partnership with the specific District, will assign the Facility Manager or Facility Contractor or any other party to provide progressive exception reporting.

A typical Site Energy Management System is illustrated in the diagram below:



4

Awareness and training

Objective

To provide a comprehensive and targeted training and awareness program across the organisation to recruit support for Queensland Health’s energy management objectives, and to equip staff with appropriate skills to reduce consumption within their realm of control.

Overview

The Carbon Management Unit will:

- Conduct a responsibility needs analysis, specific to implementation of the *Strategic Energy Management Plan*, to identify requirements for both training and awareness and to develop a program for each
- Coordinate delivery of the training and awareness programs across the organisation with a view to winning support, providing motivation and the necessary skill sets to achieve successful Energy Management Plan delivery. (In the inaugural year the training will focus on effective communication and the required information systems and reporting.)

A key feature of Energy Management Plans is raising environmental awareness among staff, contractors and suppliers.

4.1 Development and delivery of a training program

Each responsibility group has different training requirements according to the level of control they have over energy use, and the responsibility they have in relation to Energy Management Plan implementation. Training will be tailored to each responsibility group to achieve an optimum level of engagement across the organisation. Responsibility groups include:

- Queensland Health Executives as outlined in Section 1.1
- District staff and their sub-contractors as outlined in Section 1.2
- Health Services Procurement and Logistics, and Queensland Health contractors
- General staff (facility personnel, third party contractors and their sub-contractors).

Training programs will be developed for those responsibilities with direct accountabilities for the Energy Management Plan implementation and will need to cover a range of technical areas, with the level of detail depending on the target group/individual.

The range of areas to be covered by the training includes but is not limited to:

- Energy efficiency technologies
- Calculating energy savings (consumption, demand)
- Demand management/cost avoidance
- Optimisation of fixed plant and equipment
- Information systems (national monitoring and reporting systems)
- Interpreting load profiles
- Management of procurement practices (i.e. green purchasing).

4.2. Development and delivery of an awareness program

Motivated people are the basis for energy efficiency improvement. The purpose of developing an awareness program is to effectively engage those people who influence energy use across the organisation so that the *Strategic Energy Management Plan* goals and objectives are well understood and supported with a view to achieving wholesale change in attitudes towards energy management.

Awareness activities will be tailored to each responsibility group (as outlined in 4.1 above) to achieve an optimum level of engagement across the organisation. This will require detailed research and planning to develop an enduring and effective awareness campaign and will involve at a minimum:

- Assessment of the channels of communication and attributes that have been successful for raising awareness in Queensland Health through other business improvement programs
- Determination of how best to communicate the energy saving message to different staff. This will require an analysis of the impact of the Energy Management Plan implementation on the roles of various responsibility groups
- Determination of how best to regularly communicate the commitment from the Queensland Health Executive, which is key for gaining staff buy-in
- Establishing what information, and at what frequency, is required by general staff. The information must be practical and relevant to each responsibility group.

- Identifying cost-effective approaches for dissemination of information and practical integration of energy messages into existing communications mediums where effective such as:

Approaches	Mediums	Purpose
Information flows	News, Newsletters, Bulletin Boards, Intranet, Competitions, Posters and Promotions Material	Making aware
Integrating to work practices	Staffing Inductions, Annual Energy Management Forums, Face to Face Meetings	Cultural Change
Director-General's Award	Press Releases	Rewarding Cultural Change

Significant changes and new practices are proposed in the Energy Management Plan. To obtain acceptance and buy-in for responsibilities requires thought as to how to tailor and present the objectives in the most effective way and sequence.

5

Supporting business systems and processes

Objective

To ensure that supporting business systems and processes for energy management are appropriately documented, to provide a consistent directive for *Strategic Energy Management Plan* implementation and verification of procedure adherence across the organisation.

Overview

The Carbon Management Unit will:

- Integrate energy management into existing business systems and procedural documentation to provide consistency and authority to process, with a view to achieving enduring cultural change.

5.1. Integration of *Strategic Energy Management Plan*

Where Queensland Health has written procedures and documents that provide guidance to Queensland Health personnel on procedural doctrine. The Carbon Management Unit, in consultation with appropriate personnel, will integrate the Energy Management Plan objectives and procedures into all relevant existing and new procedures and documents, so that there is a widely endorsed and integrated approach to energy management across Queensland Health. These procedures and documents would typically be related to:

- **Infrastructure Management** – which details the procedural protocols to ensure that procurement, financial, statutory, regulatory and technical requirements are met
- **Appropriate Queensland Health Instructions** – which provide policy aspects and Queensland Health doctrine as they apply to the different parts of the organisation
- **The Business Definition of Energy Management** – including the procedures and information system requirements for the interface of business activity and Energy Management
- **Environmental Management System** – which assists the District domains in planning and prioritising environmental actions. Specifically the Environmental Information Management System, which will be a central environmental information and electronic business system that delivers to all Queensland Health users
- **Queensland Health Intranet** (Carbon Management Unit site).

5.2. Funding mechanism for energy projects

Implementation of discrete energy projects (technical solutions) is an important aspect of achieving energy savings.

The Carbon Management Unit adopts as a business process a low risk-based process when funding energy reduction projects.

Energy projects are to be judged on criteria of a good financial return on investment and achievement of the energy efficiency objectives, where they do not hinder or threaten capability, and can stand alone as financially sound.

5.3 Continuing improvement, better practice

The *Strategic Energy Management Plan* is a document of continual improvement. The discipline of better energy management practice is work in progress, and this document being the first under the Strategic Energy Efficiency Policy of the Queensland Government, will develop through co-operative endeavours of the Carbon Management Unit and those accountable within Queensland Health. Co-operative practices will encourage collaborative ownership for the implementation and continuation throughout the community of Queensland Health and ensure greater consistency for the process and practices across the Department. The Director-General's Instruction gives Queensland Health the governance structure and the Carbon Management Unit's planning processes will help guarantee a sustained level of improving practices into the future.

This document is not a bookshelf item, it is an example of how to focus resources on standardising energy managed practices at all Districts, whilst delivering significant carbon reduction and financial outcomes at any of its larger property sites.

