

Smart Energy Savings Program Guide



Driving Energy Savings

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Glossary

Audit	<p>In relation to participating business, an audit is as described under section 15 of the <i>Clean Energy Act 2008</i>, which is currently a level 2 energy audit (at a minimum) under <i>Australian/New Zealand Standard AS/NZS 3598:2000</i>.</p> <p>With regards to the Regulator, an audit means a check of information gathered by the business, including the level 2 energy audit.</p>
Cycle	<p>The Smart Energy Savings Program operates over five-year periods, referred to in this document as 'cycles'. The cycle commences at the end of the verification year. The first verification year is 2009-2010 (Level One) and therefore, the first possible cycle is July 2010 to June 2015.</p>
Energy	<p>The definition of energy used to determine participation in the program is as contained in section 5 of the <i>Electricity Act 1994 (Qld)</i> for electricity and section 11 of the <i>Gas Supply Act 2003 (Qld)</i> for processed natural gas. See also part 5.1.</p> <p>Other forms of energy may require auditing for a level 2 energy audit under the <i>AS/NZS 3598:2000</i> standard.</p>
Energy conservation	<p>Using less energy. For example:</p> <ul style="list-style-type: none"> ▪ turning off stand-by power of electronic equipment ▪ turning machinery off when not in use ▪ setting air-conditioning according to season.
Energy efficiency	<p>Gaining the same or a higher level of useful output by using less energy input. For example:</p> <ul style="list-style-type: none"> ▪ installing new technology to make a process more efficient ▪ replacing old equipment with new, more efficient equipment including light bulbs, fridges, air-conditioning etc ▪ changing feedstock/components to improve efficiency of process.
Energy management	<p>Activities undertaken by a business that contribute to improving energy conservation and efficiency. For example:</p> <ul style="list-style-type: none"> ▪ reviewing the timing/length of processes to reduce energy use ▪ managing energy performance in senior management roles and responsibilities ▪ updating procurement contracts to improve energy purchases.
Energy savings measure	<p>Any measure that, if implemented, contributes to energy conservation, efficiency and/or management.</p>
Energy Savings Plan	<p>A document that details the energy savings measures that a business intends to implement, including timeframes and cost for their implementation.</p>
Energy threshold	<p>The total amount of energy used by the registered site in a financial year, above which it is required to participate. See also definition of 'registered site'.</p>
Joule (J)	<p>The standard form of measuring energy, which will be adopted as the measurement used in the program. A terajoule (TJ) is 10^{12} joules.</p>

Levels	<p>A level refers to the energy threshold, which will be progressively lowered to require more businesses to participate. The levels will be introduced with the following start date:</p> <ul style="list-style-type: none"> ▪ Level one (100 - 500 TJ): 1 July 2010 ▪ Level two (30 - 100 TJ): 1 July 2011 ▪ Level three (10 - 30 TJ): 1 July 2015
Participating business	<p>As defined in section 6 of the <i>Clean Energy Act 2008</i>, a participating business is a <i>person</i> who operates a business or other activity at a site that uses 10 terajoules or more of energy, but not more than 500 terajoules of energy, in the most recently completed financial year. See also definition of 'energy threshold' and 'site'.</p>
Publish	<p>To prepare and issue printed material for public viewing that is legible, in English, easily accessible and remains in the public domain for the duration of the cycle. See also section 19 of the <i>Clean Energy Act 2008</i>.</p>
Registration	<p>The mandatory process under section 11 of the <i>Clean Energy Act 2008</i>, by which businesses notify the Regulator that they are required to participate in the Smart Energy Savings Program, and the process by which the Regulator registers such businesses.</p>
Registered site	<p>A site which is registered to participate in the Smart Energy Savings Program. See also definitions of 'registration' and 'site'. A registered site is a 'participating business' as defined in section 6 of the <i>Clean Energy Act 2008</i>. See also definition of 'participating business'.</p>
Regulator	<p>The Chief Executive Officer (Director-General) of the department administering the legislation, which is currently the Department of Employment, Economic Development and Innovation. The Regulator is an official who is responsible for control and supervision of the legislation under section 5 of the <i>Clean Energy Act 2008</i>.</p>
Site	<p>The Regulator identifies a site by the total consumption of energy identified at a 'site address'. This information is available to the Regulator under section 8 of the <i>Clean Energy Act 2008</i>.</p>
Verification of energy use	<p>The total energy consumption of a site calculated using data collected over the 12-month period prior to commencement of the five-year cycle. This is to be used by businesses to determine whether the site uses enough energy to require registration for the program.</p>
Verification year	<p>The year in which the business must calculate the energy use of its operations in each site to determine if the site meets or exceeds the energy threshold. If it does, the participating business must register the site, unless an exemption applies.</p>

1 Overview

Queensland's Smart Energy Savings Program was legislated under the *Clean Energy Act 2008*. The program aims to improve the use of energy by Queensland businesses with medium-to-large energy consumption. Businesses participating in the program will be required to review their energy use, identify energy savings measures, develop an Energy Savings Plan and publicly report on the measure or measures they are implementing through the plan. Energy savings measures are those which improve energy efficiency, energy conservation and energy management.

The program is implemented in levels, beginning with businesses which have sites that consume between 100 terajoules (TJ) and 500 TJ in a financial year (referred to as 'participating businesses' under section 6 of the *Clean Energy Act 2008*). The threshold will be reduced to capture smaller energy users, above 10 TJ in later levels. Businesses registered in the Commonwealth Government's Energy Efficiency Opportunities program are not required to participate in the Smart Energy Savings Program.

The Smart Energy Savings Program operates on a five-yearly cycle, within which the business will be required to undertake an energy audit and develop an Energy Savings Plan for each site that is within the threshold. To complete the Smart Energy Savings Program process, participating businesses will be required to:

- confirm participation by verifying energy use
- register for the program
- decide which of the measures to implement
- produce an Energy Savings Plan
- publish a public commitment on the actions to be taken
- annually update the public commitment
- undertake an audit and collect baseline data for the next cycle.

The Smart Energy Savings Program is a legislated program and the legislated elements of the program, whilst necessary, are minimal to allow businesses the flexibility to approach the program in the most efficient way for their particular circumstances.

The Regulator is responsible for overseeing the program and will take necessary steps to ensure participating businesses comply with legislative requirements. The Regulator is the Chief Executive Officer of the Department of Employment, Economic Development and Innovation.

This guide outlines the main elements of the program.

2 Objectives of Smart Energy Savings Program

The program has been developed to improve the efficiency and management of the use of energy, and the conservation of energy, by participating businesses.

The broader objectives of the Smart Energy Savings Program are to:

- increase the adoption of energy efficient technologies and practices
- drive organisational behaviour change towards positive energy management practices
- reduce growth in Queensland's electricity demand
- improve business competitiveness by reducing energy costs
- reduce greenhouse gas emissions from Queensland's commercial and industrial sectors.

Identifying energy savings measures has demonstrable benefits for businesses and can significantly contribute to reduced operating costs, improved production efficiency, and, in some cases, improved product yield. The experience of previous and existing energy efficiency programs suggest that many businesses could save 10 to 30 per cent on their energy costs without reducing productivity¹.

The program is designed to improve business competitiveness and position Queensland's industries for a carbon constrained future. This is particularly important to industry facing the introduction of a proposed national Carbon Pollution Reduction Scheme in 2011. The Carbon Pollution Reduction Scheme is predicted to increase energy costs significantly. Early action by business to reduce energy use and greenhouse gas emissions will be further rewarded once a carbon price is imposed.

Consistency with other programs

The Smart Energy Savings Program complements the Commonwealth Government's Energy Efficiency Opportunities program, which targets corporate groups consuming more than 500 TJ of energy a year. By targeting Queensland's medium-to-large energy using businesses, the Smart Energy Savings Program extends the range of businesses captured by mandatory energy efficiency programs without overlapping with the Commonwealth program. That is, the Smart Energy Savings Program excludes Queensland businesses which are part of corporate groups registered for the Commonwealth program, ensuring that businesses are not required to participate in multiple processes. In addition, the methodologies for both programs are broadly consistent, with five-year program cycles, energy assessments and public reporting.

The Smart Energy Savings Program also complements ecoBiz, the Queensland Government's voluntary business efficiency program administered by the Queensland Department of Environment and Resource Management and has also been developed with a view of promoting synergies with the Water Efficiency Management Plans program administered by the Queensland Department of Environment and Resource Management.

To ensure consistency, the Smart Energy Savings Program has been aligned as closely as practicable with requirements under the Commonwealth Government's *National Greenhouse Gas and Energy Reporting Act 2007* (NGER Act). Synergies between the NGER Act and the Smart Energy Savings Program are clearly outlined throughout the body of this document. The Queensland and Commonwealth Governments are working together to ensure reporting requirements align as closely as possible to minimise the reporting burden for participating businesses.

¹ The Parliament of the Commonwealth of Australia (2005) *Energy Efficiency Opportunities Bill 2005: Explanatory Memorandum*, Canberra

What is a site?

The Regulator will identify a site by the total consumption of energy identified at a site address, as outlined in section 8 of the *Clean Energy Act 2008*.

What is 'energy'?

Energy, as used to determine participation in the program, is **limited to electricity and processed natural gas** as defined in section 5 of the *Electricity Act 1994* (Qld) (the Electricity Act) and section 11 of the *Gas Supply Act 2003* (Qld) (the Gas Supply Act).

Section 5 of the Electricity Act defines electricity to include electric current, electrical energy and like or related physical qualities. Section 11 of the Gas Supply Act defines processed natural gas as a substance that:

- is in a gaseous state at standard temperature and pressure
- consists of naturally occurring hydrocarbons and other substances
- is more than half methane
- has been processed to be suitable for consumption.

Renewable and cogeneration energy sources that are used to generate electricity should be included in this definition of energy as there is still potentially room for improved efficiency in electricity generation by these sources. Transport energy is currently excluded as an energy source under the program as the intent of the program is to legislate within Queensland borders only. The Queensland Government may however, upon review, amend the program to include other sources of energy in the future.

Energy generators are also required to participate in the program, but total energy consumption will only include energy used on-site for general business operations of the plant (e.g. lighting, conveyor belts, HVAC), as opposed to energy generation.

Note that energy audits (discussed in part 6.2) will include an assessment of a wider range of energy sources than electricity and processed natural gas, to ensure that businesses have a holistic view of potential energy savings on their site.

3 Regulator

The Regulator is the official who is responsible for control and supervision of the legislation. The Regulator is the Chief Executive Officer (Director-General) of the Department of Employment, Economic Development and Innovation as defined in section 5 of the *Clean Energy Act 2008*.

The Regulator will be responsible for registering businesses for the Smart Energy Savings Program, maintaining compliance with legislative requirements, and investigating and enforcing compliance with the program.

Businesses may contact the Regulator by writing to:

The Regulator for the Smart Energy Savings Program
Director-General
Department of Employment, Economic Development and Innovation
PO Box 15216
CITY EAST QUEENSLAND 4002

or by sending a fax to the Regulator for the Smart Energy Savings Program ,
Director-General, Department of Employment, Economic Development and Innovation on fax
number (07) 3222 2730.

4 Smart Energy Savings Program cycle

Following the verification year and registration, registered sites will be required to undertake the following steps to complete the Smart Energy Savings Program process:

Step 1: undertake energy audit and identify energy savings measures

Step 2: determine **total** energy use for the business, including sources other than electricity and gas (baseline)

Step 3: decide which of the measures to implement

Step 4: produce and submit an Energy Savings Plan (submitted to the Regulator in year one and reviewed in year three)

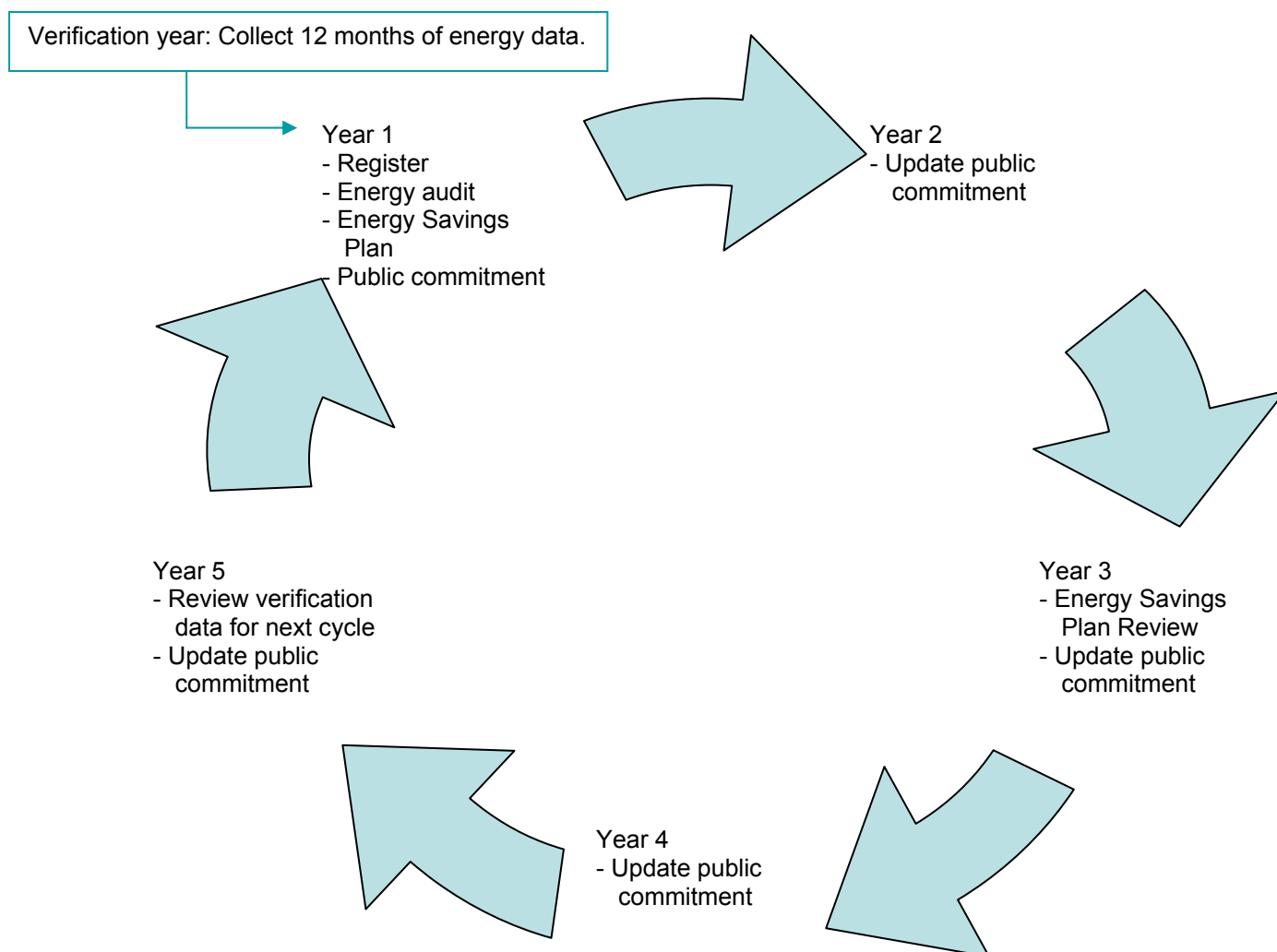
Step 5: publish a public commitment on the actions to be taken

Step 6: update the public commitment annually

Step 7: review savings against year one baseline and collect baseline data for the next cycle.

These steps are broken down by years within the five-year cycle.

Figure 1



5 Registration

5.1 Determine participation

Medium-to-large energy consuming businesses will be required to participate in the program if the energy consumed by any of their sites exceeds the energy threshold in a financial year.

The Regulator will send a notice to businesses prior to the start of a financial year (e.g. by 30 June 2009 for the 2009-10 financial year) identifying the sites which may be required to register for the program. To do this, the Regulator has the authority under section 8 of the *Clean Energy Act 2008*, to access energy consumption data from the energy providers. Energy providers include:

- the holder of a distribution authority or retail authority under the *Electricity Act 1994*
- a special approval holder under the *Electricity Act 1994*
- the holder of a distribution authority or retail authority, or the holder of a transmission pipeline licence, under the *Gas Supply Act 2003* and the *Petroleum and Gas (Production and Safety) Act 2004*.

The business is responsible for confirming its obligation to participate by calculating energy use for each sites' operations over a period of a financial year (the "verification year"), to determine if a site exceeds the energy threshold for that cycle. Sites that exceed the energy threshold must be registered with the Regulator (unless an exemption applies) and are required to participate in the Smart Energy Savings Program. Penalties apply under section 11 of the *Clean Energy Act 2008* to businesses which have sites that meet the threshold but that fail to register.

The Smart Energy Savings Program will be introduced progressively, with additional energy thresholds introduced over time to require more businesses to participate in the program. The amount of energy consumption that will trigger participation in any given year will depend on the energy threshold for that level of the program. These energy thresholds are outlined in section 7 of the *Clean Energy Act 2008* and are set out in Table 1 below.

Table 1

Level	Energy threshold (energy consumption per annum)	Verification year
1	100 - 500 TJ (27.8 GWh – 138.8 GWh)	2009-2010
2	30 - 100 TJ (8.3 GWh – 27.8 GWh)	2010-2011
3	10 - 30 TJ (2.8 GWh – 8.3 GWh)	2014-2015

Sites using 100 to 500 TJ have been selected for Level 1 as they are already required to report on greenhouse and energy activities under the NGER Act. It is likely that if the site is required to report under the NGER Act they will also be captured by the Smart Energy Savings Program.

Only the sites that meet or exceed the threshold will undergo the Smart Energy Savings Program process outlined in part 6. Businesses that have sites that are not captured by the Smart Energy Savings Program can voluntarily nominate to register for the program.

Businesses that are part of a corporate group that uses more than 500 TJ of energy a year will be captured by the Commonwealth's Energy Efficiency Opportunities program, and therefore are not required to register their sites to participate in the Smart Energy Savings Program.

Verification year

Energy use must be calculated in the year prior to the beginning of the cycle (e.g. the period 1 July 2009 – 30 June 2010 for the first round of Level 1 participants) so that businesses may determine which of their sites will be required to register for the Smart Energy Savings Program.

Businesses will be required to collect energy data in the financial year prior to commencing the Smart Energy Savings Program process (the “verification year”). For the first intake of Level 1 participants, this period is the financial year 2009–10. As the NGER Act will require data collection by sites using over 100TJ of energy from July 2008, this data should already be available to businesses participating in Level 1. This verification data will be collected **only one time** prior to each five-year cycle.

The data used to determine participation for a site is the total energy from all gas and electricity sources used at the site expressed in the common unit of TJ.

X MWh electricity = X TJ

X kilolitres of natural gas = X TJ

Energy that is on-sold or exported off-site will be excluded from this calculation. That is, the verification process measures net energy use.

5.2 Registering and deregistering

A business will be required to ensure that their sites register with the Regulator by 30 September in the financial year immediately following verification (e.g. by 30 September 2010 for Level 1 participants) if the business has at least one site that uses the amount of energy specified by the energy threshold in the verification year (e.g. 2009-10 for Level 1). If the business has more than one site above the threshold, **each site must be registered separately as a participating business**. Businesses are only required to undertake the Smart Energy Savings Program process for the sites which are registered (the “registered sites”). Penalties apply under section 11 of the *Clean Energy Act 2008* to businesses which have sites that meet the threshold but that fail to register (see part 8).

Sites are to register by sending a written notice to the Regulator with the following information:

- the name of the site
- the address of the principal place of business
- the corporation/business address
- the energy use of the site in the most recent verification year.

Sites will be able to apply to deregister from the Smart Energy Savings Program under section 13 of the *Clean Energy Act 2008* if the site is unlikely to consume the amount of energy specified in the energy threshold in the current financial year and the following two financial years. For instance, where the business disposes of or closes a site that is registered, the site may apply to deregister.

The business must ensure that sufficient information is provided to prove that its site or sites are eligible to deregister, including evidence that the site is unlikely to use the amount of energy specified in the energy threshold in the current financial year and the following two financial years.

The business may deregister all of its sites where it can show that it is registered as part of a corporate group in the Commonwealth Government's Energy Efficiency Opportunities program.

Example 1A – Registering

After collecting data in 2009-10 (Level 1 verification year), Alexander's Gidgits Manufacturing Company (Toowoomba) realises that its site consumes 157 TJ of energy. Alexander's Gidgits (Toowoomba) registers with the Regulator before 30 September 2010.

On the other hand, Alexander's Gidgits Manufacturing Company (Ipswich) uses 95 TJ of energy in the 2009-10 financial year (Level 1 verification year) and does not need to register by 30 September 2010 for the program.

Example 1B – Deregistering

Woods' Grommet Manufacturer is not an Energy Efficiency Opportunities participant and has several sites in Queensland which manufacture grommets. Three of these sites each trigger the threshold for Level 1 and each applies for registration. Three years later, the Townsville manufacturing site is decommissioned and is used as a head office. The energy use of the site is significantly reduced to below the threshold.

Woods' Grommet Manufacturer (Townsville) applies to the Regulator to deregister, providing proof of the change of operations at the site.

The application to deregister can be made at any time after registration. Applications for registration and deregistration must be addressed to the Regulator (see part 3).

5.3 Amending registration

Where there are changes to the information submitted to the Smart Energy Savings Register (see part 5.2) the site must give the Regulator written notice of the change within 14 days of the change, under section 14 of the *Clean Energy Act 2008*. Applications for amending registration must be addressed to the Regulator (see part 3).

Failure to amend the register will attract penalties (see part 8).

Example 1C – Amending the Register

Woods' Grommet Manufacturer (Greenslopes) is renamed to WG Manufacturer on 1 August 2010. The site writes to the Regulator on 9 August 2010 to inform Regulator of the change and provide the new information for the register.

5.4 Exemptions to registration

All exemptions for the Smart Energy Savings Program are legislated under section 12 of the *Clean Energy Act 2008*.

Corporate groups with a total consumption greater than 500 TJ of energy per annum will be captured by the Commonwealth Government's Energy Efficiency Opportunities program legislated under the *Energy Efficiency Opportunities Act 2006* (Cth) and therefore will not be required to participate in the Smart Energy Savings Program. This includes Queensland sites that fall within the Smart Energy Savings Program thresholds but are part of the corporate group already participating in the Energy Efficiency Opportunities program.

The Smart Energy Savings Program also excludes government entities as defined in section 5 of the *Government Owned Corporations Act 1993* (Qld) (GOC Act), except Government-owned electricity generators. This exclusion covers government companies, government departments, Government-owned Corporations (established under the GOC Act or another statute), state instrumentalities, government agencies (e.g. Department of Environment and Resource Management) and government authorities (e.g. Queensland Competition Authority).

Other situations may occur where a business' site may apply for exemption, such as if it considers that its site only triggered the energy threshold before registration due to an anomaly rather than normal business practices and it is unlikely that the business will meet the threshold in the coming years. The site can apply to the Regulator for an exemption from registering for the Smart Energy Savings Program.

To apply for an exemption, the business must ensure that their site supplies the Regulator with information, in writing, that it is eligible for an exemption, including evidence to support its claim and demonstrate that it is unlikely to meet the energy threshold in the current year and the following two financial years. This application must be made within three months of the end of the verification year (i.e. 30 September 2010 for Level 1 participants).

Example 2 – Exemption from registration

Wright's Whirligig Importers (Rockhampton) specialises in importing whirligigs for sale in Australia. In the verification year, Wright's Whirligig Importers (Rockhampton) takes over its neighbouring competitors manufacturing plant. The manufacturing site is joined as part of the one site address and, together with the importing section of the site, triggers the energy threshold for Level 1. Unfortunately, Wright's Whirligig Importers (Rockhampton) fails as a manufacturer and decides to go back to importing, selling the manufacturing plant. Wright's Whirligig Importers (Rockhampton) apply to the Regulator for an exemption from the Smart Energy Savings Program as it is unlikely they will continue to meet the energy threshold without their manufacturing plant.

6 Smart Energy Savings Program process

The Smart Energy Savings Program process consists of several steps intended to help the business identify and implement cost effective energy savings measures to improve energy efficiency, energy conservation and energy management. Implementing these measures may also have the added environmental benefit of providing greenhouse gas savings. With the proposed introduction of emissions trading in 2011, energy and greenhouse gas savings will further enhance the cost effectiveness of measures implemented under the Smart Energy Savings Program as well as promote an environmentally responsible corporate image.

Only sites that are registered due to exceeding an energy threshold (the registered sites) are required to undertake the Smart Energy Savings Program process.

In the first five-year cycle, each of the business' registered sites will undertake seven steps to complete the Smart Energy Savings Program process. These steps are broken down by year in Table 2 below to illustrate how the cycle is to be completed over the five years.

Table 2

Year 0	Collect verification data to confirm participation.
Year 1	<ul style="list-style-type: none"> • Register • Undertake an energy audit and identify energy savings measures (part 6.1) • Set a baseline for the cycle (part 6.2) • Go through the decision-making process (part 6.3) • Produce an Energy Savings Plan (part 6.4) • Send a signed copy of the Energy Savings Plan to the Regulator • Publish a public commitment (part 6.5) based on the Energy Savings Plan
Year 2	Publish an annual update (part 6.6) showing progress since previous annual update. Collect data for the year 3 annual update.
Year 3	Publish an annual update, showing progress since previous annual update, submit signed review/progress report on the Energy Savings Plan to the Regulator, and collect data for the year 4 annual update.
Year 4	Publish annual update showing progress since previous annual update and collect data for the year 5 annual update.
Year 5	Undertake an energy audit, set a baseline for the next cycle, review progress against previous baseline and identify energy savings measures (part 6.1). Publish annual update showing progress since previous annual update.

6.1 Step 1: Energy Audit Report

To identify energy savings measures, businesses are to ensure that each of their registered sites undertake an energy audit under section 15 of the *Clean Energy Act 2008*. Currently, this audit is, **at a minimum**, a **level 2** energy audit under the Australian/New Zealand Standard *AS/NZS 3598:2000* (the Audit Standards). A level 2 audit identifies sources of energy at a site, the amount of energy supplied and what the energy is used for. Businesses are encouraged to consider undertaking a level 3 audit and/or any additional auditing practices that may assist in the process. Failure to undertake a minimum level 2 audit according to Audit Standards will attract penalties under section 15 of the *Clean Energy Act 2008* (see part 8).

This audit will also identify and recommend energy savings measures (called 'opportunity identification' by the Audit Standards) and both the audit and identification process will be outlined in a report produced by the auditor. The audit report will form part of the Energy Savings Plan (see part 6.4).

Energy audit and energy savings measures

A level 2 audit will include an analysis of the site's energy use, identifying sources of energy, the amount of energy supplied, and detailing what the energy is used for. Further details about the audit can be found in the Audit Standards (<http://www.standards.org.au>).

The data collected through the audit should be analysed to determine energy savings measures. These measures can be classified in three categories - energy efficiency, energy conservation and energy management. Under the Smart Energy Savings Program, businesses must identify a measure or measures **in each category** to be implemented in the Energy Savings Plan (see part 6.4).

Energy efficiency measures aim to reduce energy consumption while at the same time maintaining or increasing the level of useful output or outcome delivered. This could be achieved by, for example:

- installing new technology to make a process more efficient
- replacing old equipment with new, more efficient equipment including light bulbs, fridges, air-conditioning, etc
- changing feedstock/components to improve efficiency of process.

Energy conservation measures aim to reduce the amount of energy used or 'consumed' by the business. This could be achieved by, for example:

- turning machinery off when not in use
- turning off stand-by power of electronic equipment
- adjusting the air-conditioning temperature according to season.

Energy management measures aim to improve the activities of the organisation's overall management functions that contribute to the achievement of improving energy performance of the business. This could be achieved by, for example:

- changing timing/length of processes to reduce energy use
- including the requirement of managing energy performance in senior management roles and responsibilities
- updating procurement contracts to improve energy purchases.

In identifying energy savings measures, there should be sufficient detail generated in the audit report to enable implementation decisions to be made by the business (see part 6.3).

The list of energy savings measures compiled must be classified into costs, timeframes, payback periods and estimated energy savings and will be listed in order of payback period. The Audit Standards provide further detail about what is to be included in the report for identifying energy savings measures. It is also recommended that businesses allocate responsible officers for each measure and any other relevant considerations.

It is further recommended that, in identifying measures, businesses should review economic and market information to gain a clear idea of available prospects and their costs to the business (e.g. new technologies on the market) to properly consider energy savings measures.

Example 3 – Identification of Energy Savings Measures

Browns Widget Manufacturers (Chermside)

After collecting energy data for three months through a level 2 audit, a number of energy savings measures are identified in the audit report. As required by the Audit Standards, the measures are listed by payback period (smallest to largest). The payback period is the cost of the measure divided by the potential energy savings per year. An extract of the report reads:

Equipment (energy conservation/efficiency)

Measure	Cost	Payback period	Timeframes (when, how long)	Expected Savings (TJ)	Responsibility/ other considerations
Where technically possible replace all light bulbs in office, staff canteen and in workshop with energy efficient alternatives	\$1200	2 years	Begin July 2011 3 months to complete	X TJ	Janitor and Workshop Facilitator Extra resources for workshop - hiring meeting room.
Replace oldest kiln	\$200,000 - \$400,000	3 – 5 years	October 2013	X TJ	Chief Engineer
Replace fridge and toaster in canteen with new energy efficient models	\$500	4 years	Begin August 2011 1 month to complete	X TJ	Site Manager
Replace 30-year old conveyor belt with new technology	\$50,000	4.5 years	September 2012	X TJ	Chief Engineer

Processes (energy management)

Measure	Cost	Payback period	Timeframes (when, how long)	Expected Savings (TJ)	Responsibility/ other considerations
Lights to be turned off in canteen outside of breaks	Nil	N/A	Immediate	X TJ	Canteen Staff
Staff to turn all processing equipment off if having a break of more than 15 minutes	Nil	N/A	Immediate	X TJ	All Staff
All windows to be shut when air-conditioners are on	Nil	N/A	Immediate	X TJ	Site Manger

Pre-audit preparation

The Audit Standards set out the type of information that should be collected and provided to the auditor or, alternatively, make the sourcing of the information within the auditor's scope of work. This information includes, for example, what level of audit will be required (i.e. level 2), meter readings and locations, and short and long-term plans for the site.

It is recommended that businesses put in place an Energy Management Program for, at a minimum, each of its registered sites before any audit is undertaken. This will include setting up the management structure of the program, formally appointing an energy manager, developing an energy management policy, involving all staff in the program and having a system to monitor energy bills.

Who does the energy audit and measure identification?

At least one person undertaking this process should have the skills to undertake a **level 2** audit according to the *Australian/New Zealand Standard AS/NZS 3598:2000*. The Audit Standards set out the process to be used if selecting a consultant.

In general, the person or persons undertaking this process should have appropriate skills to carry out the assessment for that type of site and should have an understanding of the industry sector of the organisation. They should also have relevant experience in conducting energy efficiency studies, the ability to identify energy efficiency and conservation measures, and an understanding of business management systems in relation to energy. It is also beneficial to have sound skills in communicating and negotiating with management teams and, in some cases, engineering skills. Alternatively, a small team of people that collectively possess these skills may also be appropriate.

The energy audit and energy savings measure identification process may be carried out by external or internal personnel.

6.2 Step 2: Set baseline

A baseline is to be set in year one of the cycle, based on the findings of the energy audit, and will form the basis against which the success of energy savings measures will be assessed. A baseline must be set for each registered site.

As part of the baseline, an energy efficiency indicator for the site's main business activity may be calculated. The energy efficiency indicator is a measure of energy saving performance that is independent of fluctuations in output or activity and scale changes such as adding or decommissioning a process or activity (i.e. energy per unit of output). A generic energy efficiency indicator is calculated as:

$$\text{Energy efficiency indicator} = \frac{\text{Energy use (TJ)}}{\text{Quantity of main business activity}}$$

6.3 Step 3: Decision-making

The business will make the final decision regarding which energy savings measures they will be including in the Energy Savings Plan and will approve timeframes and allocation of responsibilities.

This process will take place internally and documentation that arises from this step will not be required to be published (see parts 6.5 and 6.6 for further information on what information is required for publication).

How to communicate measures

For the business to make informed decisions, the person or persons that have identified the energy savings measures for each registered site (e.g. the energy auditor), should include all relevant information in their energy audit report.

6.4 Step 4: Energy Savings Plan

Following the process outlined above, at least one measure from each category of energy savings measures (i.e. efficiency, conservation and management) are chosen to be implemented. From this, the Energy Savings Plan is created for each registered site. This is the forward plan by which the business will implement energy savings measures.

The Energy Savings Plan must be completed and submitted to the Regulator by 30 June of year 1. However, the business may submit the plan prior to this time. Penalties apply where an Energy Savings Plan is not submitted by the required time, under section 16 of the *Clean Energy Act 2008* (see part 8). Once submitted to the Regulator, the business is required to publicly report on implementation of measures identified in the plan over the remainder of the five-year cycle.

The non-commercial-in-confidence elements of the Energy Savings Plan will be the basis on which the business will publicly announce its progress (i.e. public commitment and annual updates, see parts 6.5 and 6.6).

The Energy Savings Plan is primarily an internal document, however businesses will be required to submit it to the Regulator in year one and provide a review and progress report on the Energy Savings Plan in year three. As the Energy Savings Plan may include internal documents and commercial-in-confidence information, only authorised officers will have access to this information (for further information see part 9). The Energy Savings Plan must be approved by the business.

What should an Energy Savings Plan include?

The Energy Savings Plan must, under section 16 of the *Clean Energy Act 2008*, include the audit report (see part 6.2) and outline the energy savings measures identified through the audit. It will also reflect the decision-making process by listing the measures that the business intends to implement. Note that the business must ensure that its registered sites identify at least one of each category of energy savings measures that it intends to implement, i.e. one energy efficiency, one energy conservation and one energy management measure.

The Energy Savings Plan will also include the baseline energy data (including the energy efficiency indicator) collected in year one, against which the success of all the measures can be measured. An indicative approved form for the Energy Savings Plan is available in Appendix 1. Additional supporting information may be included in the Energy Savings Plan at the business' discretion.

Example 4 - Energy Savings Plan

Following on from Example 3.

A formal Energy Savings Plan is prepared for Browns Widget Manufacturers registered Chermside site.

Its baseline is 120 TJ and its energy efficiency indicator is 50 kWh/widget produced. The business ensures that the completed energy audit report is attached to the sites Energy Savings Plan and outlines its decision to implement all the measures identified in the report (outlined in Example 3). It also sets out how it intends to implement each of the measures, including timelines and responsible officers.

The plan is then signed off by the business and sent to the Regulator.

Year three Energy Savings Plan review

The review and progress report will take place in year three of the cycle. Businesses will be required to ensure that each registered site reviews their Energy Savings Plan. The purpose of this process is to review and report on implementation and make changes to the forward timetable where appropriate. This provides an opportunity to reassess measures in light of changes to the economy, the business itself and the industry in which it operates. Some examples of these changes are outlined in the Audit Standards, and include substantial changes to energy costs and proposed changes to the site. Failure to submit a report to the Regulator that reviews the Energy Savings Plan is subject to criminal penalties as outlined in part 8).

The review and progress report will provide the business and the Queensland Government with information on the success of the program and, with permission from the business, may be disseminated in the wider community. Businesses may use this opportunity to promote an environmentally responsible corporate image by demonstrating its commitment and successes in implementing energy savings measures.

The review and progress report must be submitted to the Regulator by the end of the financial year (year 3). As the legislation contains penalties for the provision of false or misleading information and documents, it is recommended that adequate records/evidence be maintained by the business for verification purposes.

Amending the Energy Savings Plan

Businesses may apply to the Regulator at any time to change parts of the Energy Savings Plan, that is, changes to the measures that will be implemented and how they will be implemented. In doing so, businesses must state any significant changes in a written notice within 14 days of the change(s). Failure to amend an Energy Savings Plan to reflect changes to measures may attract penalties under section 17 of the *Clean Energy Act 2008* (see part 8).

6.5 Step 5: Public commitment

Businesses are required to ensure their registered sites publish non-commercially sensitive elements of the Energy Savings Plan in a public commitment within 28 days of the Energy Savings Plan being submitted to the Regulator, in accordance with section 19 of the *Clean Energy Act 2008*. This commitment is to be updated annually throughout the duration of the five year cycle (see part 6.6). The purpose of the public commitment is to encourage business to give careful consideration to energy use and energy savings measures.

The public commitment must include the measures intended to be implemented (at least one of each type of measure: energy efficiency, energy management and energy conservation).

The public commitment must be published in a way that is readily available to the market and community, that is, it must be easy to find and view (for example on a business' website). Within 28 days of publication the business must advise the Regulator by written notice that they have published the commitment and give proof of its publication (e.g. advising the Regulator of where to find the commitment).

It is not the intention of the program to require or compromise confidential information (for more detail, see part 9). Failure to publish non-commercial-in-confidence information in the commitment, and failure to notify the Regulator of its publication, is subject to penalties (see part 8).

6.6 Step 6: Annual updates

Within 28 days of the start of years two, three, four and five of the cycle, businesses will be required to ensure that their registered sites update the public commitment, outlining progress on the Energy Savings Plan. These annual updates will be required to include progress on implementation of each measure identified in the public commitment. Within 28 days of publication, the business must advise the Regulator by written notice that they have published the update and provide proof of its publication (e.g. advising the Regulator of where to find the update).

Example 5 – Public commitment and annual updates (timeframes)

Following on from Examples 3 and 4.

Browns Widget Manufacturers (Chermside) is a level 1 participant and collected verification data from 1 July 2009 to 30 June 2010. It must submit its Energy Savings Plan by 30 June 2011 but due to company practices and timeframes completes its Energy Savings Plan earlier and submits it on 1 October 2010. The business has 28 days to publish its public commitment. On 29 October 2010, it publishes its public commitment, choosing to do so on its website.

Browns Widget Manufacturer (Chermside) now has 28 days after publication to inform the Regulator of the publication of the public commitment, and to provide proof of publication. They send a letter to the Regulator on 7 November 2010, setting out the website address where the public commitment can be found.

The business now has 28 days from the beginning of every remaining financial year of the cycle to publish its annual updates, i.e. by 28 July of each year. The business undertakes its annual updates, going through the same process outlined above.

Failure to publish annual updates or notify the Regulator of its publication is subject to criminal penalties (see part 8).

What should be included in the annual updates?

The annual updates should include original and updated information based on either the public commitment or the previous annual update report.

To adequately update the implementation of energy savings measures in annual reports, frequent collection of energy consumption data for each registered site should be collected. This is also recommended in the Audit Standards. This data collection will usually be at the same level of detail as the data collected for the baseline (see part 5.1) to identify overall savings; however businesses may choose to break down this data further to identify savings made by the implementation of individual savings measures (e.g. collect sub-metering data). This annual collection of data will provide businesses with information on the progress of energy conservation, energy efficiency and energy management measures.

Annual updates should provide additional information to that of the first public commitment, including overview of progress against public commitment including the outcomes gained from their implementation (e.g. total energy and cost savings realised).

Other information may be included in the annual update at the business' discretion.

As the legislation contains an offence provision for false or misleading information and documents in sections 20 and 21 of the *Clean Energy Act 2008*, it is recommended that adequate records/evidence be maintained by the business for verification purposes.

6.7 Step 7: Cycle review and preparation for new cycle

Towards the end of the five-year cycle the business should have ensured that each of its registered sites have identified measures for energy efficiency, energy conservation and energy management, and should have implemented at least some of the cost-effective measures for these registered sites.

Businesses can use the baseline data collected in year one to measure the success of any measures taken.

The fifth year of the cycle is also the verification year for the next cycle, so a business must ensure that all its sites that must participate in the next cycle are identified by the end of the fifth year (registering any that are not already registered by the required date) and set baselines for these sites.

7 Mandatory implementation

Initially, the Smart Energy Savings Program does not include any requirement for mandatory implementation of measures outlined in the Energy Savings Plan. This is in recognition of a process being undertaken under the Council of Australian Governments to establish a nationally consistent approach to industry energy efficiency.

8 Compliance

Businesses with sites participating in the Smart Energy Savings Program must ensure that each registered site complies with program requirements as set out in the *Clean Energy Act 2008*. Therefore, the Queensland Government has a responsibility to monitor participation and take necessary measures to enforce the program requirements. To this end, the Queensland Government will impose criminal penalties on businesses where program requirements are not met.

The legislation provides the Regulator with the necessary and appropriate authority to review documentation and check for non-compliance. It is anticipated that this power will be used in the event of poor performance of a business in undertaking the Program. To monitor compliance the Queensland Government will also undertake audits on a statistically relevant sample of businesses each cycle.

Record-keeping

As the legislation contains offences for the provision of false or misleading information and documents, it is recommended that adequate records/evidence be maintained by the business for verification purposes.

Penalties

Penalties are incurred for failure to undertake the following:

- collect energy use data for verification and provide information to the Regulator – 200 penalty unitsⁱⁱ
- register a site for the Smart Energy Savings Program when a threshold is exceeded – 100 penalty units
- undertake an energy audit and measure identification – 100 penalty units
- produce and submit the Energy Savings Plan – 200 penalty units
- produce and submit a review of the Energy Savings Plan – 100 penalty units
- publish a public commitment and annual updates – 20 penalty units
- inform Regulator of publications – 20 penalty units

Additional penalties are incurred for the following:

- failure to inform Regulator of changes required for the Smart Energy Savings Register within 14 days - 20 penalty units
- providing false or misleading information or documentation – 100 penalty units

These penalty amounts are set by legislation. The executive officers of a business must ensure the registered sites comply with the *Clean Energy Act 2008*.

ⁱⁱ Currently each penalty unit has the value of \$100 Australian dollars.

9 Confidentiality

The Department of Employment, Economic Development and Innovation is collecting information for the purpose of the Smart Energy Savings Program. This information is required by the *Clean Energy Act 2008*. Only authorised departmental officers have access to this information. The information supplied will not be disclosed to any other third party without your consent, unless required by law or for the purposes of Information Standard 42.

The information sought, as much as possible, has been designed to be consistent with similar programs in Australia, for example the Commonwealth Government's Energy Efficiency Opportunities program.

Appendix 1: Indicative approved form for the Energy Savings Plan

The Energy Savings Plan outlines the organisation's baseline energy data and includes a plan for implementing energy savings measures. This is intended to be an internal document. **The plan must be sighted and signed by the business.**

Participant			
Address:			
ACN/ABN:		ANZSIC classification:	
Description of business: (main business activity at the site to which this plan relates)			
Period covered by the plan:			
Overview of energy audit process: (e.g. objectives of energy audit, how process conducted)			
Sign-off of the plan: The information included in the Energy Savings Plan is, to the best of my knowledge, correct and in accordance with the requirement of the <i>Clean Energy Act 2008</i> . Signature: _____ Position: _____ Date: _____			

BASELINE ENERGY DATA				
Energy type	Baseline energy data		Timeframe (e.g. July 2009 - June 2010)	Energy efficiency indicator (e.g. x MWh of electricity / tonne of production)
Electricity	MWh	TJ		
Processed natural gas	GJ	TJ		

ENERGY AUDIT AND MEASURE IDENTIFICATION											
Total number of projects to be implemented:				Total potential energy savings:			TJ				
Projects to be implemented:											
Measure No.	Measure type (e.g. efficiency, conservation, management)	Description	Cost to implement	Energy Savings: (TJ)		Cost savings (\$)		Payback period	Planned start date	Planned completion date	Responsible officer
				Total	p.a.	Total	p.a.				
1											
2											
3											
Overview of internal communication of result of energy savings measure identification process (e.g. approved by the Board of Directors on X date, published in company newsletter):											