

cadbury energy efficiency opportunities public report 2010

CADBURY AUSTRALIA LIMITED

Period to which this report relates

Start: 1 July 2006

End: 30 June 2010

part I – Information on assessments completed to date

Table 1.1 – Description of the way in which the Corporate Group (or part of it) has carried out its assessments

Cadbury has continued to undertake planned 'Energy Efficiency Opportunities' assessments over the reporting period. The assessment of our Scoresby site was completed in 2010 and results are reported in Part 2A of this report. The assessment team's previous experience at Ringwood in (2008) enabled a more efficient implemented at Scoresby this year; resulting in a number of improvement opportunities.

Our Claremont site has made progress on the assessment of opportunities identified in the previous reporting period and the outcomes are reported in Part 2B of this report. Particularly significant are two ongoing projects, which will provide around 8% reduction in energy use at this site, which is our largest energy user.

Energy efficiency measures implemented at Ringwood, assessed in the first reporting period (2008), has meant that steam demand has been greatly reduced, and last year the boiler was replaced with a smaller boiler, to more efficiently meet the reduced steam demand.

Progress on the implementation of Cadbury's assessments is now reviewed annually by the Executive Leadership Team and the Australian Board of Directors

During the last 12 months Cadbury ceased production at Notting Hill, in addition, the Assessment & Reporting Schedule was revised following the sale of Schweppes; as a result no assessments were undertaken at these sites. A restructuring of Cadbury Operations during the reporting period added complexity to the task of assessing the factories during large scale structural change, but we feel we have timed the assessments to minimise the impacts of these changes on the assessments.

Conversely, changing commodity prices in the form of increasing coal costs enabled the single largest energy saving opportunity in the group, converting our existing coal boiler at Claremont to run on natural gas.

Part 1 – Information on assessments completed to date (continued)

Table 1.2 – Energy use assessed

| Group member and/or business unit and/or key activity and/or site (or part thereof) that has had an assessment completed by 30 June 2010 (Include all assessments completed to date for the current 5 year cycle). | Period over which assessment was undertaken¹ | Energy use for the period 1.7.2009 to 30 June 2010 of the assessed entity (or part thereof) expressed in GJ² |
|---|--|--|
| Ringwood | Dec 2007 – Sept 2008 | 184,608 |
| Claremont | March – November 2009 | 315,918 |
| Scoresby | March – October 2010 | 183,766 |
| Total energy use of assessed entities (or part thereof) | | 684,302 |
| Total energy use of the whole corporate group in the period 1.7.2009 to 30 June 2010 | | 779,711 |
| Total energy use of assessed entities (or part thereof) for the period 1.7.2009 to 30.6.2010 expressed as a percentage of total energy use for the period 1.7.2009 to 30.6.2010 | | 88% |

1. This should be the start and finish date (month and year) for the assessment (planned assessment dates were nominated in Table 3.1 of the approved ARS).

2. Energy Bandwidth may only be used if approved in the Assessment and Reporting Schedule.

All sites were assessed to a data accuracy of within 5%.

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2A - New assessments completed or not reported since your last Public Report

Name of Group member or business unit or key activity or site: Scoresby

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

183,766

GJ

Table 2.1 – Opportunities assessed to an accuracy of better than or equal to (\leq) $\pm 30\%$

| Status of opportunities identified | | Total Number of opportunities | Estimated energy savings per annum by payback period (GJ) | | | | | | Total estimated energy savings per annum (GJ) |
|------------------------------------|--------------------------|-------------------------------|---|------|---------------|------|------------|------|---|
| | | | 0 – < 2 years | | 2 – ≤ 4 years | | > 4 years | | |
| | | | No of Opps | GJ | No of Opps | GJ | No of Opps | GJ | |
| Business Response | Under Investigation | 6 | 0 | 0 | 2 | 1175 | 4 | 3479 | 4654 |
| | To be Implemented | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Implementation Commenced | 3 | 1 | 3000 | 0 | 0 | 2 | 2130 | 5130 |
| | Implemented | 2 | 2 | 4279 | 0 | 0 | 0 | 0 | 4279 |
| | Not to be Implemented | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Outcomes of assessment | Total Identified | 11 | 3 | 7279 | 2 | 1175 | 6 | 5609 | 14063 |

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2A - New assessments completed during the reporting period (continued)

Name of Group member or business unit or key activity or site: Scoresby

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

183,766

GJ

Table 2.2 – Opportunities assessed to an accuracy of worse than (>) $\pm 30\%$

| Status of opportunities identified | | Total Number of opportunities | Estimated energy savings per annum by payback period (GJ) | | | | | | Total estimated energy savings per annum (GJ) |
|------------------------------------|--------------------------|-------------------------------|---|------|---------------|-----|------------|---------|---|
| | | | 0 – < 2 years | | 2 – ≤ 4 years | | > 4 years | | |
| | | | No of Opps | GJ | No of Opps | GJ | No of Opps | GJ | |
| Business Response | Under Investigation | 79 | 2 | 1945 | 3 | 568 | 74 | 10131 | 12644 |
| | To be Implemented | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Implementation Commenced | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Implemented | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Not to be Implemented | 31 | 0 | 0 | 0 | 0 | 31 | unknown | unknown |
| Outcomes of assessment | Total Identified | 110 | 2 | 1945 | 3 | 568 | 74 | unknown | unknown |

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2B - Update of assessments reported in previous Public Reports

Name of Group member or business unit or key activity or site: Ringwood

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

184,608

GJ

Table 2.3 – Opportunities assessed to an accuracy of better than or equal to (\leq) $\pm 30\%$

| Status of opportunities identified | | Total Number of opportunities | Estimated energy savings per annum by payback period (GJ) | | | | | | Total estimated energy savings per annum (GJ) |
|------------------------------------|--------------------------|-------------------------------|---|-----------|--------------------|-----------------|------------|--------------------|---|
| | | | 0 – < 2 years | | 2 – \leq 4 years | | > 4 years | | |
| | | | No of Opps | GJ | No of Opps | GJ | No of Opps | GJ | |
| Business Response | Under Investigation | 6 (20) | 0 (0) | 0 (0) | 3 (NA) | 4051 (1950) | 3 (NA) | 42 (722) | 4093 (2,672) |
| | To be Implemented | 1 (2) | 0 (NA) | 0 (0) | 0 (NA) | 0 (4,050) | 1 (NA) | 0 (0) | 0 (4,050) |
| | Implementation Commenced | 0 (0) | 0 (NA) | 0 (0) | 0 (NA) | 0 (0) | 0 (NA) | 0 (0) | 0 (0) |
| | Implemented | 26 (23) | 1 (NA) | 68 (0) | 13 (NA) | 1,424 (1424) | 12 (NA) | 6,258 (6258) | 7,750 (7,682) |
| | Not to be Implemented | 14 (14) | 0 (NA) | 0 (0) | 0 (NA) | 0 (0) | 14 (NA) | 4,814 (4,134) | 4874 (4134) |
| Outcomes of assessment | Total Identified | 47 (49) | 1 (0) | 68 (0) | 16 (NA) | 5,475 (7424) | 30 (NA) | 11,114 (11,114) | 16657 (18538) |

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2B - Update of assessments originally reported in previous Public Reports (continued)

Name of Group member or business unit or key activity or site: Ringwood

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

184,608

GJ

Table 2.4 – Opportunities assessed to an accuracy of worse than (>) $\pm 30\%$

| Status of opportunities identified | | Total Number of opportunities | Estimated energy savings per annum by payback period (GJ) | | | | | | Total estimated energy savings per annum (GJ) |
|------------------------------------|--------------------------|-------------------------------|---|----------|---------------|-------------|-------------|----------------------|---|
| | | | 0 – < 2 years | | 2 – ≤ 4 years | | > 4 years | | |
| | | | No of Opps | GJ | No of Opps | GJ | No of Opps | GJ | |
| Business Response | Under Investigation | 4 (0) | 0 (0) | 0 (0) | 1 (0) | 1950 (0) | 3 (0) | unknown (0) | unknown (0) |
| | To be Implemented | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| | Implementation Commenced | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| | Implemented | 1 (0) | 0 (0) | 0 (0) | 1 (0) | 36 (0) | 0 (0) | 0 (0) | 36 (0) |
| | Not to be Implemented | 97 (97) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 97 (NA) | unknown (unknown) | unknown (unknown) |
| Outcomes of assessment | Total Identified | 102 (97) | 0 (0) | 0 (0) | 2 (0) | 1986 (0) | 100 (NA) | Unknown (unknown) | unknown (unknown) |

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Name of Group member or business unit or key activity or site: Claremont

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

315,918

GJ

Table 2.3 – Opportunities assessed to an accuracy of better than or equal to (\leq) $\pm 30\%$

| Status of opportunities identified | | Total Number of opportunities | Estimated energy savings per annum by payback period (GJ) | | | | | | Total estimated energy savings per annum (GJ) |
|------------------------------------|--------------------------|-------------------------------|---|----------------|---------------|-----------------|------------|--------------|---|
| | | | 0 – < 2 years | | 2 – ≤ 4 years | | > 4 years | | |
| | | | No of Opps | GJ | No of Opps | GJ | No of Opps | GJ | |
| Business Response | Under Investigation | 8 (5) | 0 (NA) | 0 (3688) | 8 (NA) | 9428 (1184) | 0 (0) | 0 (0) | 9428 (4,872) |
| | To be Implemented | 2 (12) | 1 (NA) | 1213 (1917) | 1 (NA) | 4185 (8357) | 0 (0) | 0 (0) | 5398 (10334) |
| | Implementation Commenced | 2 (0) | 1 (0) | 5500 (0) | 1 (0) | 20000 (0) | 0 (0) | 0 (0) | 25500 (0) |
| | Implemented | 5 (1) | 2 (1) | 523 (406) | 2 (0) | 1037 (0) | 1 (0) | 0 (0) | 1560 (0) |
| | Not to be Implemented | 3 (5) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 3 (NA) | 430 (656) | 430 (656) |
| Outcomes of assessment | Total Identified | 20 (23) | 4 (NA) | 7236 (6070) | 12 (NA) | 34650 (9540) | 4 (NA) | 430 (656) | 42,316 (16,266) |

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2B - Update of assessments originally reported in previous Public Reports (continued)

Name of Group member or business unit or key activity or site: Claremont

Total energy use for the period 1.7.2009 to 30.6.2010 of the assessed entity (or part thereof) from which the opportunities identified below were generated (and is reported in Table 1.2).

315,918

GJ

Table 2.4 – Opportunities assessed to an accuracy of worse than (>) $\pm 30\%$

| Status of opportunities identified | | Total Number of opportunities | Estimated energy savings per annum by payback period (GJ) | | | | | | Total estimated energy savings per annum (GJ) |
|------------------------------------|--------------------------|-------------------------------|---|----------|---------------|------------------|------------|----------------------|---|
| | | | 0 – < 2 years | | 2 – ≤ 4 years | | > 4 years | | |
| | | | No of Opps | GJ | No of Opps | GJ | No of Opps | GJ | |
| Business Response | Under Investigation | 29 (29) | 0 (0) | 0 (0) | 22 (NA) | 34226 (38178) | 7 (NA) | unknown (unknown) | unknown (unknown) |
| | To be Implemented | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| | Implementation Commenced | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| | Implemented | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| | Not to be Implemented | 41 (37) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 41 (37) | unknown (unknown) | unknown (unknown) |
| Outcomes of assessment | Total Identified | 70 (66) | 0 (0) | 0 (0) | 22 (0) | 34226 (38178) | 48 (NA) | unknown (unknown) | unknown (unknown) |

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Part 2C - Details of at least three significant opportunities found through EEO assessments

Table 2.5 – Description of 3 significant opportunities

Opportunity 1

Our Claremont Factory primarily produces blocks of chocolate. The site has a boiler to produce heat for the process, for cleaning and for space heating. The boiler has historically run on coal, which has been an easily available and inexpensive fuel source in Tasmania. Recent increases in coal price, along with the recent availability of gas in Tasmania meant that this year the boiler was able to be converted from coal to gas. The project is due for completion in December 2010, with the projected environmental benefits including:

- an energy efficiency improvement of around 5% for the entire site, or around 20,000 GJ (coal dust builds up on the internals of the boiler, reducing efficiency)

- a reduction in carbon emissions of 38% for the entire site or around 7900 tonnes of CO₂ (gas burns with less carbon emission than coal)
- a reduction in solid waste from the site of 2000 tonnes per year (previously the burnt coal ash was trucked away)
- a reduction in air emissions, especially particulates (coal dust and ash)
- a reduction in water use of around 10,000 Litres per day (previously used to cool the coal ash)

The project had a simple payback of 3.5 years.

Opportunity 2

Our Claremont factory includes a milk drying process, using steam from our boiler. The steam used to heat the milk enters our site as cold water from the tap, is heated in our boiler, and then heats the process (in this case drying milk). As the heat transfers from the steam, it turns the steam back into hot water also known as condensate. At this point in the milk drying process, the steam was considered 'used' and discharged. During the EEO assessment we identified the opportunity to return this hot condensate to our boiler,

thereby recovering the heat that was still present in the condensate, but is not in the mains water that is otherwise used to 'make up' the water for the boiler. This project is due for completion in December 2010. The projected energy saving is:

- around 5,500GJ per annum of saved energy
- around 15 million Litres of water per annum is saved as we return it to the boiler for reuse.

The project had a simple payback of 2 years.

Part 2 - Energy Efficiency Opportunities that have been identified and evaluated

Opportunity 3

Our Scoresby site makes lollies such as jelly snakes. The site has recently undergone a major expansion, and we noticed that our compressed air supply was at capacity. We conducted an audit of our compressed air distribution system during our EEO assessment and found approximately 50% of the compressed air being produced at the site was supplying leaks.

We conducted two separate major maintenance initiatives on the distribution system during the year, and have included it on our regular scheduled maintenance programme. This initiative saved approximately 3600GJ per year, the payback was approximately 4 months.

Opportunity 4

Our Scoresby site has recently undergone expansion. The factory has economy cycles on its air conditioning and some product cooling. The economy cycle works by determining when the air outside the factory is at a suitable temperature to use for cooling the factory, and bringing it in, rather than recycling air from within the factory and continually cooling it. During the EEO assessment we noted that the economy cycle was not operating correctly on our air conditioning system and some of our process heating and cooling, and that some parts of the factory did not have an economy cycle.

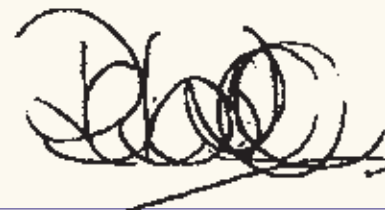
We implemented a project to improve the sensors and programme controls on our economy cycles, and install new ductwork to enable economy cycles where required. This project is due for completion in December, and is projected to save:

- 2900 GJ of energy
 - 1100 tonnes of Carbon Dioxide emissions
- The project had a simple payback of 2 years.

Declaration

Declaration of accuracy and compliance (mandatory information)

The information included in this report has been reviewed and noted by the board of directors and is to the best of my knowledge, correct and in accordance with the **Energy Efficiency Opportunities Act 2006** and **Energy Efficiency Opportunities Regulations 2006**.



Rebecca Dee-Bradbury, Director, Cadbury Australia Limited.

Date: 22.12.10