

## PUBLIC REPORT TEMPLATE

### Controlling Corporation

Ramsay Health Care Limited

### Period to which this report relates

Start 1 September 2008

End 30 June 2009

### Part 1 – 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**

Ramsay Health Care recognises that protecting the environment is a critical issue and a key responsibility of the business and corporate community. The benefits of environmental protection for current and future generations are clear, but Ramsay Health Care also acknowledges that reducing unnecessary waste and minimizing consumption of scarce resources is consistent with ongoing financial sustainability in terms of meeting the expectations of our customers, reducing costs and minimizing risks.

Ramsay Health Care has invested significant resources into this area and takes its obligations under the Energy Efficiency Opportunities Act (Cth) 2006 very seriously. An Environmental & Sustainable Working Party meets every second month to evaluate progress and initiatives towards resource savings and the minutes and actions of this Working Party are reported through to Operational Risk Committees of the Board. A National Environment Manager has been appointed to assist with this progress.

Ramsay Health Care has carried out assessments within the period of this report covering a further 8 sites to complement the 8 sites reported in the previous period. This has extended the assessments to cover 48% (up from 38%) of the total Energy Consumption of the facilities controlled by Ramsay Health Care. The sites were chosen on the basis of their size, as typical of a type, and as sites with apparent greater usage, known age or other probable efficiency issues. Nine of the audits have been carried out with external assessors. Two of the sites are now working with the NSW Department of Environment, Climate Change and Water.

Information of successful implementations and ideas is being disseminated to all sites through newsletters, minutes of the environment working party and a special intranet site set up specifically for sharing environmental initiatives between sites. In addition, the National Environment Manager is able to share ideas between sites during his assessments. It is proposed to begin some more formal presentations and e-learning packages for managers and staff at sites in 2010.

**Table 1.2 – Energy use assessed**

Group member and/or business unit and/or key activity	Period over which assessment was	Energy use per annum in GJ <sup>2</sup> in
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and/or site that has had an assessment completed by the end of this reporting period.	undertaken <sup>1</sup>	the current reporting year Jul 08 – Jun 09
<b>PREVIOUS REPORTING PERIOD</b>		
Greenslopes Private Hospital (Brisbane)	19/06/2008	109,437
John Flynn Private Hospital (Gold Coast)	02/07/2008	53,875
Westmead Private Hospital (Sydney)	08/07/2008	30,190
St George Private Hospital (Sydney)	09/07/2008	57,853
Albury Wodonga Private Hospital (Albury)	30/07/2008	10,952
Wangaratta Private Hospital	31/07/2008	7,614
North Shore Private Hospital (Sydney)	06/08/2008	40,852
Hillcrest Private Hospital (Rockhampton)	14/08/2008	8,497
<b>CURRENT REPORTING PERIOD</b>		
Murray Valley Private Hospital	31/07/2008	12,344
Hunters Hill Private Hospital	07/07/2008	2,668
Berkeley Vale Private Hospital	22/10/2008	4,348
Sydney and Central Coast Linen Service (Gosford)	23/10/2008	27,442
St Andrews Ipswich Hospital	20/08/2008	10,185
Albert Road Clinic	03-04/03/2009	10,309
The Avenue Hospital	04/03/2009	14,017
Caboolture Hospital	26/05/2009	4,167
<b>Total energy assessed</b>		<b>404,750</b>
<b>Total energy use of the group in the current reporting year</b>		<b>843,292</b>
<b>Total energy assessed expressed as a percentage of total current energy use</b>		<b>48%</b>

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.

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

Table 1.3 – Accuracy of energy use data		
Entity	% achieved	Reasons for not achieving data accuracy to within $\pm 5\%$
All sites	Better than +/- 5%	Good confirmatory checking of data through NGER process, electronic metering compared to invoices, and from quarter to quarter.

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

### Part 2A - New Assessments completed during the reporting period

Name of Group member or business unit or key activity or site: Murray Valley Private Hospital

Energy use of the entity during the current reporting period

12,344

GJ

**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1	100			100
Business Response*	Implementation Commenced	Lighting upgrades	100			100

**Table 2.2 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified	5	(500)	1000	500	1500
Business Response	Under Investigation	Create dead band in heating-cooling		500		500
		Shutdown of heating and cooling when not required	500 (test alternative to above)			(500)
		Reuse of heat		500		500



		Solar Pool Heating			300	300
		Passive shading			200	200

NOTE: - Murray Valley Private Hospital is an interesting anomaly in that the facility was built as a trade union facility, with the intent of showing off tradesman skills, and at a time that energy was cheap and efficiency a low priority. As a consequence there are many features such as exposed pipe-work, uninsulated high and glazed northern faces, that met the aim of architectural splendour but are intractable problems to remedy to achieve efficiency. This facility's energy efficiency is the worst in the group, consuming 3 times the average per patient day.

Name of Group member or business unit or key activity or site: Sydney and Central Coast Linen Service

Energy use of the entity during the current reporting period

27,440	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	8	3,282	2,200	1,325	6,807
Business Response*	Under Investigation	Boiler tune	1,150			1,150
	Under Investigation	Blowdown recovery			420	420
	Under Investigation	Flash Steam		2,200		2,200
	Implementation Commenced	Steam distribution maintenance	310			310
	Under Investigation	Heat pump HW	980			980
	Under Investigation	Compressed air leaks	42			42
	Implementation Commenced	Monitoring and targeting	800			800
	Not to be Implemented	Boiler exhaust recovery			905	905



**Table 2.2 - Opportunities assessed to an accuracy of worse than ±30%**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified	1				?
Business Response	Under Investigation	Higher temp in tunnel	Awaiting analysis			?

Name of Group member or business unit or key activity or site: Hunter's Hill Private Hospital

Energy use of the entity during the current reporting period

2,668	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				
Business Response*	Under Investigation					

**Table 2.2 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified	2	50			50
Business Response	Under Investigation	Replacement and relocation of chillers	Awaiting analysis			?
	Under Investigation	Downlights	50			50

Name of Group member or business unit or key activity or site: Berkeley Vale Private Hospital

Energy use of the entity during the current reporting period 

4348	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				
Business Response*	Under Investigation					

**Table 2.2 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified	1	50			50
Business Response	Under Investigation	Downlights	50			50

No substantial projects identified

Name of Group member or business unit or key activity or site: St Andrew's Ipswich Private Hospital

Energy use of the entity during the current reporting period

10,185	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1	150			150
Business Response*	Under Investigation	downlights	150			150

**Table 2.2 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified					
Business Response	Under Investigation	Steriliser cooling	Mainly water savings			

This facility in particular has a large number of incandescent down-lights in patient rooms. As this constitutes a clinical observation area, we need to comply with AS1680.2.5:1997 (Interior lighting – hospital and medical tasks). At this time, we are unable to perform such testing ourselves, and none of the suppliers we have spoken to have been able to provide spectrum data or certification to confirm adequacy of LEDs against this standard. We have chosen to await confirmation of safety for purpose before extending replacement to such clinical applications.

Name of Group member or business unit or key activity or site: Albert Road Clinic

Energy use of the entity during the current reporting period

10,309	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				
Business Response*	Under Investigation					

**Table 2.2 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified	2	100			100
Business Response	Under Investigation	Chiller replacement			Awaiting analysis	?
		Downlights	100			100

This site is in need of an overhaul of existing chiller plant. We will put ensure that efficiency is added to the primary requirements for effectiveness and reliability.

Name of Group member or business unit or key activity or site: The Avenue Hospital

Energy use of the entity during the current reporting period

14,017	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified					
Business Response*	Under Investigation					

**Table 2.2 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified	1	150			150
Business Response	Under Investigation	Downlights	150			150

No substantial projects identified

Name of Group member or business unit or key activity or site: Caboolture Private Hospital

Energy use of the entity during the current reporting period

4,167	GJ
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**Table 2.1 – Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				

**Table 2.2 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment	Total Identified	2	2			?
Business Response	Under Investigation	AHU to chilled water			Awaiting analysis	
	Under Investigation	Roof over AHUs (at time of replacement)	Difficult to estimate			

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

### Part 2B - Update of assessments originally reported in previous reporting periods

Name of Group member or business unit or key activity or site: Greenslopes Private Hospital

Energy use of the entity during the current reporting period

109,437	GJ
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**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2	310	140		450
Business Response	Implementation Commenced	Downlights		140		140
	Implementation Commenced	Patient Fridges (300)	310			310

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2	500		600	1100
Business Response*	Under Investigation Design work commissioned	Centralisation of Cooling Towers			600	600
	Implementation partially complete New since previous report	Theatre humidification as per Westmead	500			500

Name of Group member or business unit or key activity or site: John Flynn Gold Coast Private Hospital

Energy use of the entity during the current reporting period

53,875

GJ

**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2		1772		1772
Business Response*	Under Investigation	AC VSDs		1700		1700
	To be Implemented	Downlights		72		72

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	0				0
Business Response*						

Name of Group member or business unit or key activity or site: Westmead Private Hospital

Energy use of the entity during the current reporting period

30,190

GJ

**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	3	240	870	0	1110
Business Response*	Under Investigation	NG boilers		0		0
	Under Investigation	Theatre waste heat		870		870
	Implemented New since previous report	Theatre Dehumidification	240			240

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1				?
Business Response*	Under Investigation	Passive Insulation				Difficult to estimate

Name of Group member or business unit or key activity or site: St George Private Hospital

Energy use of the entity during the current reporting period

57,853	GJ
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**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	3	280	1200	0	1480
Business Response*	Under Investigation	Tune Boilers		230		230
	Under Investigation	Theatre waste heat		970		970
	Implemented	Steriliser waste heat	280			280

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2	200	4380		4580
Business Response*	To be Implemented	Protect room controls	200			200
	Under Investigation	CoGen		4380		4380

Name of Group member or business unit or key activity or site: Albury Wodonga Private Hospital

Energy use of the entity during the current reporting period

10,952	GJ
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**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	4	100	10,400		10,500
Business Response*	Under Investigation	NG boilers		0		0
	Under Investigation	CoGen		10,000		10,000
	Under Investigation	Theatre waste heat		400		400
	Implemented	Lighting upgrades	100			100

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1				?
Business Response*	Under Investigation	Passive Insulation			Difficult to estimate	

Name of Group member or business unit or key activity or site: Wangaratta Private Hospital

Energy use of the entity during the current reporting period

7,614	GJ
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**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	4		1000		1000
Business Response*	Under Investigation	Chiller waste heat		780		780
	Under Investigation	Theatre waste heat		80		80
	Under Investigation	Boiler replacement		0		0
	To be Implemented	pt fridges		140		140

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2				?
Business Response*	Under Investigation	Control tuning		Difficult to estimate		
	Under Investigation	Insulation		Difficult to estimate		

Name of Group member or business unit or key activity or site: North Shore Private Hospital

Energy use of the entity during the current reporting period

40,852	GJ
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**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2	850	630		1480
Business Response*	Under Investigation	Chiller waste heat	850			850
	To be Implemented	Theatre waste heat		630		630

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1				250
Business Response*	Implementation commenced New since last report	Theatre Humidification as per Westmead	250			250

This site recently sustained a plant room fire that has required replacement of Air Conditioning Control Systems. More efficient algorithms, similar to the trial at Westmead, have been agreed as part of the refurbishment.

Name of Group member or business unit or key activity or site: Hillcrest Rockhampton Private Hospital

Energy use of the entity during the current reporting period

8,497

GJ

**Table 2.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	2		737		737
Business Response*	Under Investigation	solar HW supply		280		280
	Under Investigation	waste heat recovery		457		457

**Table 2.4 - Opportunities assessed to an accuracy of worse than  $\pm 30\%$**

Status of opportunities identified		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	
Outcomes of assessment*	Total Identified	1				?
Business Response*	Under Investigation	Passive Insulation			Difficult to estimate	

## 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**

At most sites the single greatest sector of energy consumption is in providing air-conditioning. Replacing equipment with more efficient types is expensive, but where equipment is nearing end-of-life, efficiency has been raised to a higher criterion, and as a prompt to early replacement. An example is the cooling tower project at Greenslopes. Currently the site has two separate chilled water systems. The intention is to combine these systems and delete the redundant chillers and cooling towers, so that the entire site runs off the more efficient main plant. The efficiency will be further enhanced by economy of scale – at all times the most effective, but minimum, numbers of cooling towers and chillers can be automatically selected to meet the whole load, rather than two approximations separately. In general the larger chillers tend to be more efficient when fully loaded, and with the greater combined load, this will be justified more often. There will also be gains in redundancy. Another critical element is optimisation of the control of the systems, so that the best equipment is used, only to the extent required to meet the essential requirements, and no more. Good examples are the control of air-conditioning to theatres at Westmead, and the extension of the lessons learnt to other sites. Theatres require precise but energy intensive control of fresh air, temperature, humidity and pressure. To make it “easy”, bringing in a constant, large quantity of outside air, cooling it to a low temperature, reheating it to remove humidity, then adding the right amount of humidity back in, certainly works, but considerable energy can be saved by better algorithms, to assess the current inside and outside conditions, and change them only as much as is required to achieve the required conditions.

It is difficult to quantify the savings from these changes accurately because the energy cannot be directly measured, and estimates are complicated by the continuously changing and wide range of conditions that the controls operate over. However it is clearly a benefit, and Greenslopes hospital has followed Westmead’s example and modified the algorithms in their similarly programmed theatres. The providers of a upcoming new control system at North Shore Hospital have also been instructed to incorporate the philosophy into the system.

**Opportunity 2**

Staff involvement has been very effective at identifying problems, and optimising the human part of the control system. Certainly turning off unnecessary equipment works, but we are also conscious of the need to avoid confusing them with inadequately user-friendly controls or instructions. The better choice of automating systems to provide what they staff need without the fallibility of remembering routines. An example is the temperature controls in patient rooms at St George, which through misleading users, cause over-heating, over-cooling, wasted energy and annoyed customers. We are trialing disabling these controls in favour of maintenance-only adjustment.

Some of our sites have established Environmental and Waste Management Committees or specifically “green” committees. Two of our sites (Westmead and St George Private Hospitals) have moved on from this to intensive “Go Green” campaigns to engage all staff in the hospitals in confronting the issues. These campaigns have been presented to Ramsay Health Care’s Environment & Sustainable Development Working Party. The lessons learned at these sites will be shared with other hospitals in an effort to have hospital-wide green campaigns with a focus on resource efficiency active in all our hospitals.

**Opportunity 3**

One of the most significant opportunities for saving water at our sites has been to ensure that waste water from sterilisers is reused. Each steriliser uses water as a coolant, which in original designs was mains water that exited to drain. At many of our sites this system has been modified to recycle the water through heat exchanges to the chilled water system, or outside cooling. We are now introducing reuse of the water for other purposes, preferably to boiler header tanks where the energy contained in the water is also reused. A second significant opportunity is in reuse of reject water from reverse osmosis plant.

**Opportunity 4**

At a number of sites we are investigating replacing electrically fired heating systems for hot water and steam with Natural Gas systems. The intent is more for the significantly reduced Greenhouse Gas Emissions and cost than for reducing Energy Consumption. Through the Environment & Sustainable Development Working Party, Ramsay is raising the awareness of the significance of avoidable emissions of refrigerants and anaesthetic agents. The removal of patient fridges from rooms in some hospitals is an example of reducing energy as well as refrigerant gas emissions. We monitor but are not required to report (under NGER) emissions of these substances, which are highly active Greenhouse and Ozone Depleting agents.

## Part 3 - Voluntary Contextual Information

**Table 3.1 – Contextual Information**

Ramsay Health Care consists of 70 distinct facilities, with some of significant size and of considerable age, but the majority quite small. Clearly both for Ramsay and the community, the smaller sites are not significant consumers of energy or emitters of pollutants, but administratively it is easier to fully document all sites rather than amalgamate the smaller ones. We do however concentrate on the significant sites as the most likely place to find significant opportunities but extend any discoveries to all sites to maximise the end result.

We have established reporting of energy consumption on a per patient day and per square metre of floor space, to enable comparisons between sites. Sites are also categorised by type to facilitate peer comparison.

In the last financial year, we have implemented much more rigorous and complete collection of data, partly to meet the requirements of NGERs. This does make comparisons with the year before deceptive as the better methodology discovered more energy consumption, thus a misleading conclusion that more energy is consumed in spite of the initiatives introduced. Data from this year forward, and with KPIs based on productivity, will be more effectively comparable and reliable.

### **Hospitals – A Special Case**

As detailed in last year's public report, it is Ramsay Health Care's view that hospitals generally will encounter a degree of conflict in their endeavours to achieve significant energy reduction targets with the obligation of hospitals to meet a raft of existing standards, and to ensure we provide safe and quality care for patients. Hospitals generally have some novel constraints for example:

- Operating Theatres – there are obligatory minimum rates of fresh air exchange, very tightly acceptable temperature and humidity variability, pressure and filtering that are not only required by standards but based on good science. There are a number of other specialised facilities in hospitals also with strict requirements.
- Sterile Stock areas, waste disposal, as well as food handling and other commercial areas have maximum acceptable temperatures. Air conditioning in such areas are required 24 hrs per day, irrespective of whether the area is occupied.
- Infection control – general and specialised patient areas have more limited acceptable ranges of air handling for infection control reasons.
- Lighting – Clinical observation areas (which can be interpreted as any area a patient may be) require a specific spectrum and intensity of light to allow clinicians to correctly interpret cyanosis. Most new lighting sources are not proven against this standard. As a 24 hour operation, much more lighting is required than most other commercial facilities of similar size.

- Most private hospitals operate on a 24 hour/7 days per week basis, with high occupancy and a considerable and unique equipment base, and therefore a somewhat unusual load profile, creating both novel problems, and opportunities.

This being said, Ramsay Health Care is committed and has dedicated resources to investigating and implementing identified energy savings opportunities.

**Table 3.2 – Energy use expressed in Greenhouse Gas emissions and as an energy use indicator**

**Period of energy use 1 July 2008 to 30 June 2009**

Name of group member/ business unit/ key activity/site	Energy use pa (GJ)	Energy use pa (tonne CO <sub>2</sub> e)	Energy use as an indicator* (GJ per patient day and per sqm per quarter)
<b>1/ Group1 M/S with ICU</b>			Analysed but not for public disclosure
Greenslopes Private Hospital	109,439	20,152	
Hollywood Private Hospital	56,804	9,399	
John Flynn Gold Coast Private Hospital	53,875	13,514	
Joondalup Health Campus	46,514	8,039	
North Shore Private Hospital	40,852	6,663	
Pindara Gold Coast Private Hospital	14,569	3,433	
St George Private Hospital	57,853	9,074	
<b>2/ Group2 M/S with ICU</b>			
Lake Macquarie Private Hospital	17,722	3,366	
Mildura Base Hospital	30,384	5,775	
Strathfield Private Hospital	8,506	1,826	
Warringal Private Hospital	11,368	3,133	
Westmead Private Hospital	30,190	5,541	
<b>3/ M/S 100-150 beds</b>			
Albury Wodonga Private Hospital	10,952	2,191	
The Avenue Hospital	14,017	3,740	
Beleura Private Hospital	9,819	2,149	
Cairns Private Hospital	17,979	4,341	
Figtree Private Hospital	11,189	2,097	
Glengarry Private Hospital	8,701	1,366	
Kareena Private Hospital	9,696	2,057	



Peninsula Private Hospital	13,626	3,450	
St Andrews Ipswich Private Hospital	10,185	2,538	
4/ M/S 50-100 beds Group1			
Berkeley Vale Private Hospital	4,348	826	
Frances Perry House	4,532	1,527	
Masada Private Hospital	8,375	1,697	
Mitcham Private Hospital	9,909	1,986	
Noosa Private Hospital	12,383	2,720	
NorthWest Private Hospital	10,475	2,359	
Nowra Private Hospital	5,064	952	
Southern Highlands Private Hospital	5,207	1,223	
Waverley Private Hospital	8,254	1,730	
5/ M/S 50-100 beds Group2			
Baringa Private Hospital	8,254	1,436	
Caloundra Private Hospital	6,280	1,426	
Dudley Private Hospital	7,005	1,073	
Hillcrest Rockhampton Private Hospital	8,497	2,114	
Hunters Hill Private Hospital	2,668	653	
Linacre Private Hospital	7,851	1,539	
Nambour Selangor Private Hospital	8,139	2,033	
Port Macquarie Private Hospital	8,030	1,276	
Shepparton Private Hospital	7,207	1,741	
Tamara Private Hospital	4,606	850	
6/ M/S <50 beds			
Armidale Private Hospital	1,394	345	
Attadale Private Hospital	4,607	668	
Caboolture Private Hospital	4,167	993	
Castlecrag Private Hospital	2,906	550	
Glenferrie Private Hospital	2,884	703	
Murray Valley Private Hospital	12,344	2,002	
Wangaratta Private Hospital	7,614	1,491	
Warners Bay Private Hospital	5,725	811	
7/ Psychiatric			



Adelaide Clinic		3,825	763	
Albert Rd Clinic		10,309	2,108	
Fullarton Private Hospital		1,105	206	
Kahlyn Day Centre		784	92	
New Farm Clinic		3,083	745	
Northside Clinic		4,737	973	
Northside Cremorne Clinic		1,199	226	
Northside West Clinic		3,093	568	
8/ Rehabilitation				
Donvale Rehabilitation Hospital		3,978	667	
Lawrence Hargrave Private Hospital		3,155	363	
Mt Wilga Private Hospital		6,605	1,131	
9/ No Peer Group				
Brisbane Office		83	21	
Cairns Day Surgery		2,809	710	
Coffs Harbour Day Surgery		447	97	
Coolenberg Day Surgery		158	39	
Hastings Day Surgery		102	25	
Head Office		619	153	
Melbourne Office		562	190	
Pindara Day Surgery		1,243	314	
Sydney and Central Coast Linen Service		27,442	1,981	
Short St Day Surgery		947	239	
Southern Highlands Specialist Centre		42	10	
<b>Total</b>	<b>70 facilities</b>	<b>839,292</b>	<b>162,190</b>	



**Table 3.3 - Opportunities assessed to an accuracy of  $\pm 30\%$  or better (\$ value)**

Status of opportunities identified		Number of opportunities	Estimated energy savings per annum by payback period (\$)			Total estimated energy savings per annum (\$)
			0 – < 2 years	2 – ≤ 4 years	> 4 years	
Outcomes of assessment*	Total Identified					
Business Response*	Under Investigation					
	To be Implemented					
	Implementation Commenced					
	Implemented					
	Not to be Implemented					

### Part 3 - Voluntary Contextual Information (continued)

<b>Table 3.4 – Changes in energy use as an indicator</b>			
<b>Name of group member/ business unit/ key activity/site</b>	<b>Current energy use as an indicator</b>	<b>Previous energy use as an indicator</b>	<b>Reasons for change</b>
<b>Total</b>			

### Part 4 - Declaration

<b>Table 4.1 - Declaration of accuracy and compliance (mandatory information)</b>	
<p>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 <i>Energy Efficiency Opportunities Act 2006</i> and <i>Energy Efficiency Opportunities Regulations 2006</i>.</p>	
	<b>Insert Title of Signatory here</b>