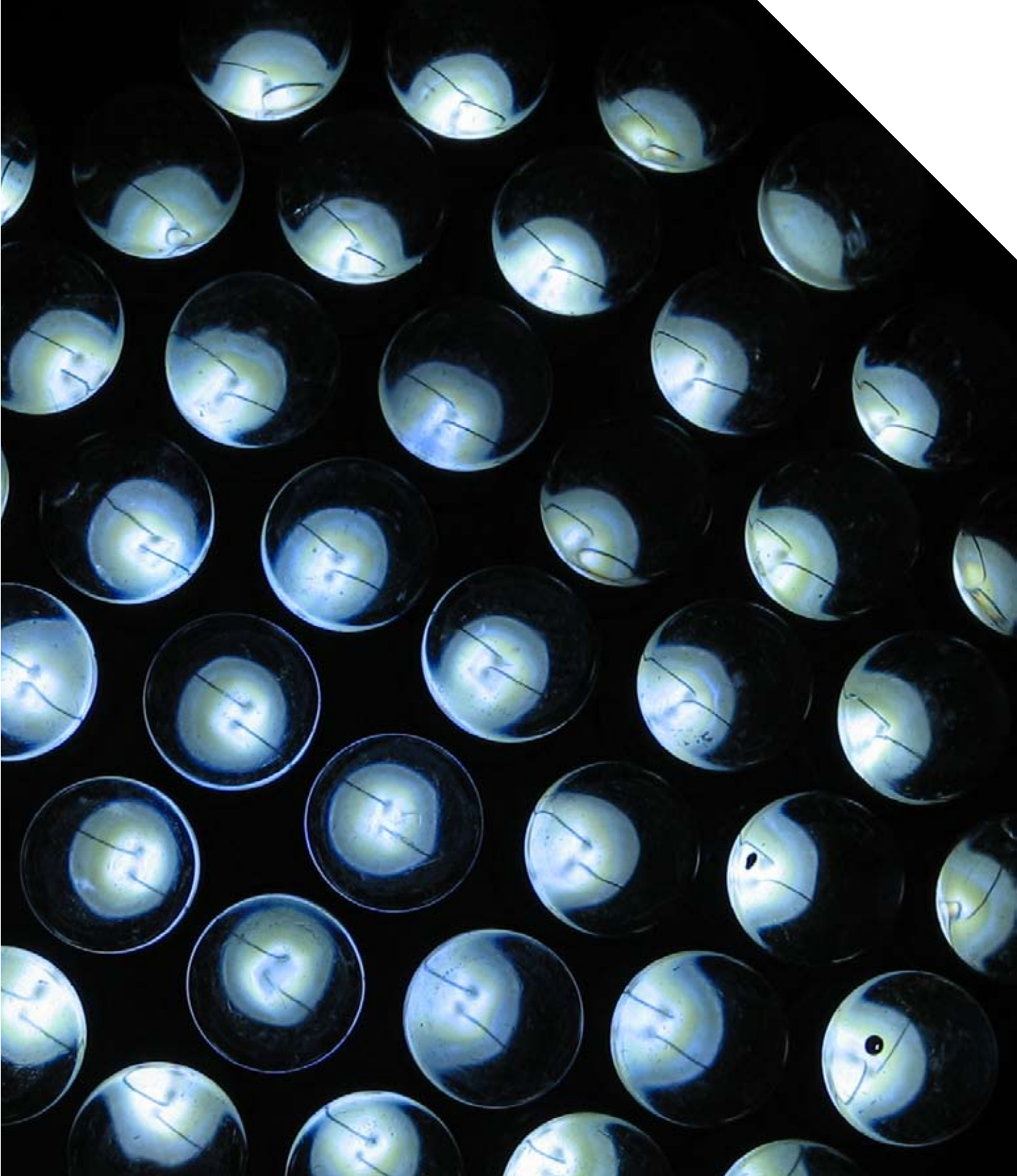


Leighton Contractors
Energy Efficiency
Opportunities Report 2008



Leighton Contractors Pty Limited

Leighton Contractors Pty Limited is a leading contractor and services provider to clients throughout Australia and New Zealand.

With capabilities spanning construction, resources, telecommunications, industrial engineering, services and facilities management, infrastructure development and investment, we are committed to building a sustainable company; one that is long-lasting, consistently profitable and corporately responsible.

The company's commitment to sustainability is built around its values; it is about doing business in a way that contributes to the longevity of the business, its individual projects, the environment and the communities in which it operates.

Leighton Contractors has a four-stream strategy to embed sustainability throughout its diverse range of businesses underpinned by the following:

- Living by values that underscore our performance, relationships and responsibilities
- Ensuring sustainability is a key consideration in strategic and operational decision making
- Driving breakthrough thinking for innovation and business improvement, delivering better solutions for clients and creating more diverse opportunities for its' people; and
- Engaging with stakeholders to improve the way business is conducted.

A fundamental aspect of Leighton Contractors' sustainability strategy is the identification of opportunities for business efficiency and effectiveness. This approach is being integrated with our business processes and systems, in the way we manage our projects, and in our people's everyday decision making and behaviours.

Energy efficiency, including Leighton Contractors' involvement in the Energy Efficiency Opportunities Program, forms part of the company's wider approach to environmental sustainability. Using the Energy Efficiency Opportunity framework, we have developed, and will continue to refine, an effective energy

management and reporting system that identifies innovative actions to reduce the intensity of the company's energy footprint. Learnings from this initiative can then be distributed across the business and projects, ensuring a process for continued business improvement.

Energy Efficiency Opportunities (EEO)

In November 2006, Leighton Holdings Limited and its relevant subsidiaries, including Leighton Contractors, were officially registered under the Energy Efficiency and Opportunities Act 2006. Leighton Contractors responded by forming an Energy Efficiency working party to develop a systematic approach to identify and assess opportunities to improve the efficiency of its operations and simultaneously work in collaboration with clients and stakeholders to commence the process of improvement.

Leighton Contractors' vision is to create within the organisation a culture that recognises and values energy efficiency as an enduring facet of business management. Working closely with industry regulators, clients and other stakeholders, this approach to energy efficiency will continue to evolve and mature over time.



The program

The EEO Program is a deliverable of Leighton Contractors' four-stream sustainability strategy and has the primary objective requiring the integration of efficient energy use principles into all aspects of the business. The key elements of the company's program are:

- Identifying, sharing and promoting new opportunities for energy efficiency
- Supporting the collation and acquisition of data from sites
- Ensuring energy efficiency is a key consideration in our equipment and services purchasing
- Embedding energy efficiency within all areas of the business, including design, engineering and project management; and
- Continually driving energy efficiency as a core part of our approach to business improvement.

This approach has assisted the organisation in classifying opportunities as short, medium or long term initiatives, and set priorities for reducing energy usage that will create improvement in energy efficiency.

As a large contractor and services provider, a significant percentage of Leighton Contractors' energy use is associated with diesel consumption. While a number of key initiatives to improve energy efficiency across the company have been identified, energy usage within the resources sector has required a specific focus to be applied to the load and haul processes and operations of the mobile plant mining fleet.

A key challenge in the collation and reporting of energy efficiency data from the mobile mining fleet is the ability to accurately verify actual improvements. This is due to the large number of associated variables, such as haulage distance, elevation, product type, volume and density.

To meet the company's long term objectives for energy efficiency, a significant investment during this reporting period has been on the development of mathematical models that provide integrity in the collection, collation and interpretation processes used to measure energy usage on sites. Once a full analysis of this data is complete, it will form a critical component of further identification of energy efficiency opportunities.

In addition, a number of other opportunities that contribute to improving energy efficiency were identified. These initiatives work to reduce the company's carbon footprint in the immediate term and form the focus of Leighton Contractors' initial assessment and business response.

This report describes the foundation steps of the Leighton Contractors EEO Program as well as providing an insight into the future of the company's EEO strategies.

Our assessment and response

The initial EEO assessments were conducted between November 2007 and June 2008, with ongoing assessment, identification and implementation of energy efficiency opportunities conducted beyond this period.

Summary of assessments

To ensure sustainable change across the organisation, Leighton Contractors approach has mandated the application of robust systems, tools and processes to deliver predictable, scalable, real time energy usage data. The company has taken critical steps over the reporting period towards achieving significant improvement in collection and analysis of this data.

During the assessment phase, a wide range of opportunities for energy improvement were identified. Ten specific opportunities were chosen for representative assessment with a further rationalisation to four, forming our initial business response. The outcomes of these assessments are contained in the next section of this report. Two of these opportunities are in the process of business-wide implementation, while the remaining two are still in the investigation stage.

As part of the process to expand the horizons of the program, a series of co-facilitated assessment workshops were conducted with a key client, BHP Billiton. These workshops identified over 42 potential opportunities where substantial energy savings may be achieved and these opportunities will form part of the next phase of the company's EEO program.

Assessment results

Key activity energy use 2007/ 2008

Key activities that have been assessed	Energy use (GJ) per annum
1. Wheel Loader Bucket modification assessment	288,730 GJ
2. Fuel Efficient Wheel Loaders assessment	319,300 GJ
3. Site and Branch Office Lighting efficiency assessment	3,050 GJ
4. LED Lighting efficiency in mining camp assessment	5,920 GJ
Total	617,000 GJ

Our energy data accuracy meets the EEOA \pm 5% requirements.

EEO Assessment outcome

Status of Opportunities		Opportunities	Estimated energy savings per annum by payback period (GJ)		Total estimated energy savings per annum (GJ)	*Accuracy range (%)
			0 – < 2 years	2 – ≤ 4 years		
Outcomes of assessment	Identified (accuracy ≤ ±30%)					
	Identified (accuracy > ±30%)	1. Wheel Loader Bucket modification	✓		5,600 GJ	Accuracy > ±10%
		2. Fuel Efficient Wheel Loaders	✓		5,420 GJ	Accuracy > ±10%
		3. Site and Branch Office Lighting efficiency		✓	485 GJ	Accuracy > ±10%
		4. LED Lighting efficiency in mining camp		✓	621 GJ	Accuracy > ±10%
	**Total Identified			12,126 GJ		
Business Response	Under Investigation	Site and Branch Office Lighting efficiency Note: Like opportunities to apply these savings exist elsewhere in the business (52% of construction sites yet to be assessed).		*	1,007 GJ	Accuracy > ±10%
	To be Implemented	LED Lighting Efficiency in Mining Camp Note: Like opportunities to apply these savings exist elsewhere in the business (8 additional sites).		*	4,973 GJ	Accuracy > ±10%
	Implementation Commenced	Wheel Loader Bucket Modification Note: Six additional opportunities exist across the business.		*	29,866GJ	Accuracy > ±10%
		Fuel Efficient Wheel Loaders Note: Seven additional like opportunities exist across the business.		*	42,480GJ	Accuracy > ±10%

* Annual saving target if applied more broadly within the business.

The initiatives

Leighton Contractors is committed to implementing practical solutions and programs that forecast real energy savings across approximately eight per cent of our energy footprint assessed to date.

Wheel Loader Bucket modification assessment

The loading and haulage of bulk materials was identified as a substantial area of energy usage and opportunity for improvement. The modification initiative involved increasing the efficiency in the loading process by re-designing and modifying loader buckets.

In consultation with manufacturers and suppliers, Leighton Contractors engineers have modified existing loader bucket design by reducing the bucket's weight by up to 20 per cent, while continuing to meet the appropriate design standards. A smoother and lighter bucket provides increased capacity and therefore reduces the fuel consumed for each bank cubic meter (bcm) loaded.

This representative assessment was performed on two buckets, and, given the positive outcomes, it is expected the modification works to be applied to another six loader buckets within the next two to three years.

In the short term this modification will deliver annual energy savings of 5,600 GJ. In the longer term annual energy savings may be as high as 29,866 GJ or 2,080 t CO₂e- when applied across all eight loader buckets in operation.

Fuel Efficient Wheel Loaders assessment

The fuel efficient wheel loader initiative involved analysing and upgrading existing wheel loader equipment. Through a pilot upgrade program, significant improvement in engine efficiency, primarily in terms of lower fuel consumption, were achieved. Initial assessment indicates that the new wheel loader model consistently consumes ten per cent less fuel compared with the estimated average consumption of the superseded model under assessment.

The assessment process involved rigorous research and benchmarking, numerous interviews and multiple site visits to the US and other locations. While the decision to trial a new wheel loader required significant financial investment, the outcomes to date have been positive. There are a further seven opportunities to purchase this specific model of wheel loader as the existing fleet come up for replacement.

In the short term, new loader will deliver annual energy savings of 5,420 GJ. In the long term, annual energy savings could be as high as 42,480 GJ or 2,960 t CO₂e-.



Left // The new fuel efficient Wheel Loader.

Site and Office Lighting efficiency assessment

As part of Leighton Contractors' Green Office Program, a number of lighting efficiency assessments were performed throughout sample operations within the business.

Lighting surveys and return on investment models have been applied against the various assessments involving branch, regional, site offices and depots with very positive results.

Key actions associated with this initiative will involve the replacement of existing florescent tubes with a more energy efficient florescent tube technology. This will deliver a likely 30 per cent reduction in energy consumption while maintaining equivalent light output.

Maximum leverage of this initiative can be achieved where project/office space is leased on a long-term basis and where maintenance/ operational costs associated with lighting are the company's primary responsibility as the prime tenant.

Assuming that replaced technology is installed in all branch, regional, site offices and depots, the annual energy savings could be as high as 1,007 GJ or 250 t CO₂e-.

LED Lighting Efficiency in mining camp

During 2008, investigations began into the efficiency gains of LED lighting technology at a mining camp in the Pilbara region of Western Australia. Return on investment modelling indicates short payback periods for the technology, primarily due to the significant decrease in energy demands. Reductions of 75 per cent energy use are forecast.

Once energy savings are verified, further investigations will commence to evaluate options to apply LED technology at other mine camp locations and alternative facilities across the company.

Assuming that replaced technology is installed more broadly at similar locations the annual energy savings are estimated to be as high as 4,973 GJ or 1,234 t CO₂e-.

Benefits

The combined benefits of the identified initiatives, following implementation on all relevant projects and sites, is estimated to be approximately 78,500 GJ of energy per annum, which represents a significant decrease against the energy footprint assessed.

While initial assessments have not fully accounted for the costs involved in the transition to more efficient energy practices, it is anticipated that by adopting these initiatives the net improvement will be substantial.

In addition to fuel and electricity savings, the EEO Program has also delivered a wide range of benefits to the business. These include:

- Improved operational efficiency
- Reduced maintenance costs
- Increased employee engagement in the area of climate change
- Increased sharing of information across our business: and
- Enthusiasm for continuous improvement in environmental management.



Our ongoing commitment

Leighton Contractors considers the assessment, identification, and implementation of energy efficiency opportunities as fundamental to the way we do business. As such the Australian Government's EEO program is welcomed and accepted as a catalyst for improving current approaches to identifying, assessing and implementing efficiency opportunities.

As part of the continuing focus on accurately measuring and comparing energy usage rates with best practice benchmarks, the mass movement equation will provide verifiable and accurate data, enabling direct efficiency comparisons between many different sites and scenarios.

The ability to make direct comparison will allow the testing of site specific energy improvement initiatives in real time and provide fast and accurate results as to the effectiveness of proposed efficiency initiatives. The equations will also allow comparison of various hauling operations, specifically identifying those operations/sites that are operating most efficiently. The most efficient sites will provide input for knowledge transfer and process improvement.

Over the next 12 months, Leighton Contractors will continue to investigate new ways to reduce our carbon footprint and improve the energy efficiency of its operations and looks forward to sharing further successes in 2008/09.

Declaration

The information included in this report is to the best of my knowledge correct and in accordance with the *Energy Efficiency Opportunities Act 2006 and Energy Efficiency Opportunities Regulations 2006*.



Peter McMorrow
Managing Director
Leighton Contractors Pty Limited

Controlling Corporation

Leighton Holdings Limited ABN 004 482 982



This report contains data on the Leighton Contractors energy use for the financial year 2007/08 and provides information on the outcome of our energy efficiency assessment conducted between November 2007 and June 2008.

