

INDUSTRIAL ENERGY EFFICIENCY

Summary of key findings from the ESI data analysis project
December 2012

In December 2012, the National Energy Savings Initiative (ESI) Secretariat published a detailed report based on Climateworks Australia's industrial energy efficiency data analysis project. This document provides a summary of the key findings:

- > The extensive analysis undertaken in developing the report has created a significantly more detailed picture of energy efficiency opportunities in the industrial sector than was previously available.
- > Significant potential to save energy exists in the industrial sector – 11% of total energy use – the majority of which offers a payback of less than 2 years.
- > However, not all energy savings identified will be implemented, as many barriers exist.
- > In fact, only 40% of identified energy savings are expected to be implemented under current policy settings, leaving significant potential untapped.

Download the full report at
www.climateworksaustralia.org/publications.html



EXTENSIVE ANALYSIS HAS CREATED A SIGNIFICANTLY MORE DETAILED PICTURE OF ENERGY EFFICIENCY OPPORTUNITIES IN THE INDUSTRIAL SECTOR THAN WAS PREVIOUSLY AVAILABLE

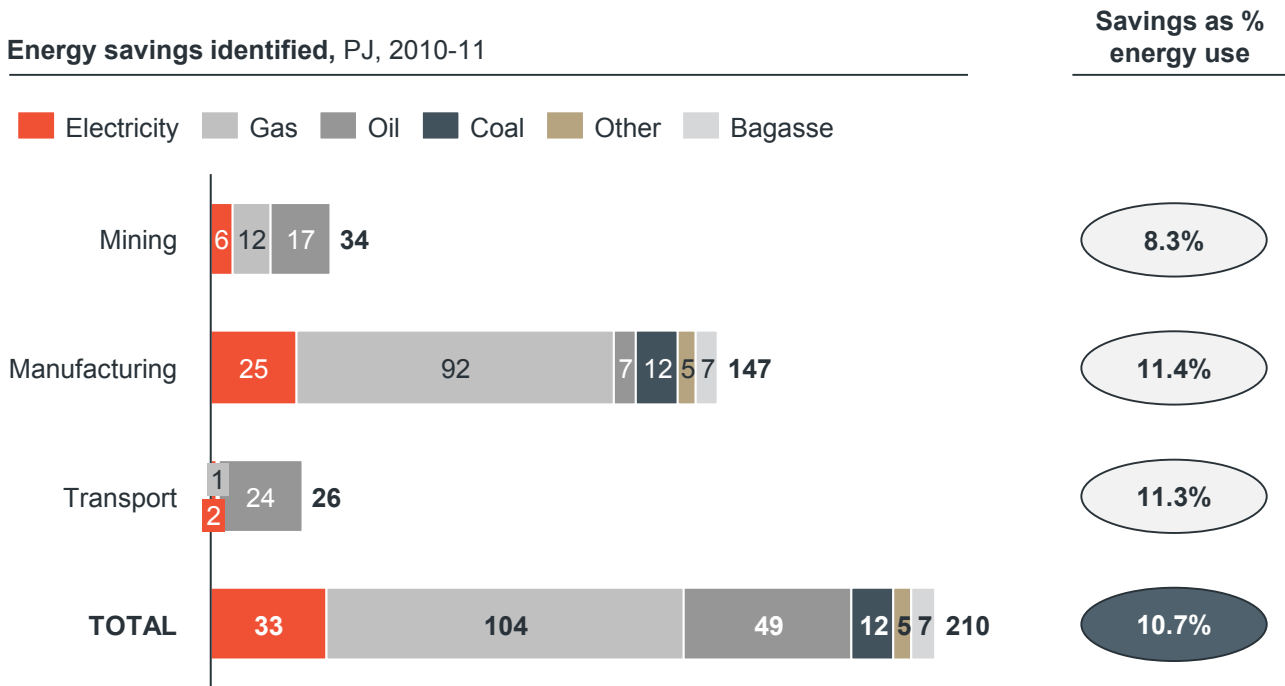
The industrial energy efficiency data analysis project aims to increase understanding of the opportunity to improve energy efficiency in medium to large industrial businesses. The project explores the energy savings potential, the associated costs and benefits, and the barriers to implementation.

The project draws on real world data rather than theoretical assessments:

- > The primary data source comes directly from companies – energy savings reported through government programs – complemented by energy consultant analyses where data was incomplete
- > Analysis of barriers draws on company experience at the site of implementation.

SIGNIFICANT POTENTIAL TO SAVE ENERGY EXISTS IN THE INDUSTRIAL SECTOR – 11% OF TOTAL ENERGY USE – THE MAJORITY OF WHICH OFFERS A PAYBACK OF LESS THAN 2 YEARS

Our analysis has identified that in 2010-11, 210 PJ of energy savings are available across the various industrial sectors, which corresponds to around 11% of baseline energy use. This is equivalent to a decrease in annual energy costs of \$3.2 billion per year (in 2010 real dollars), and to a reduction in greenhouse gas emissions of 15.6 MtCO₂e.



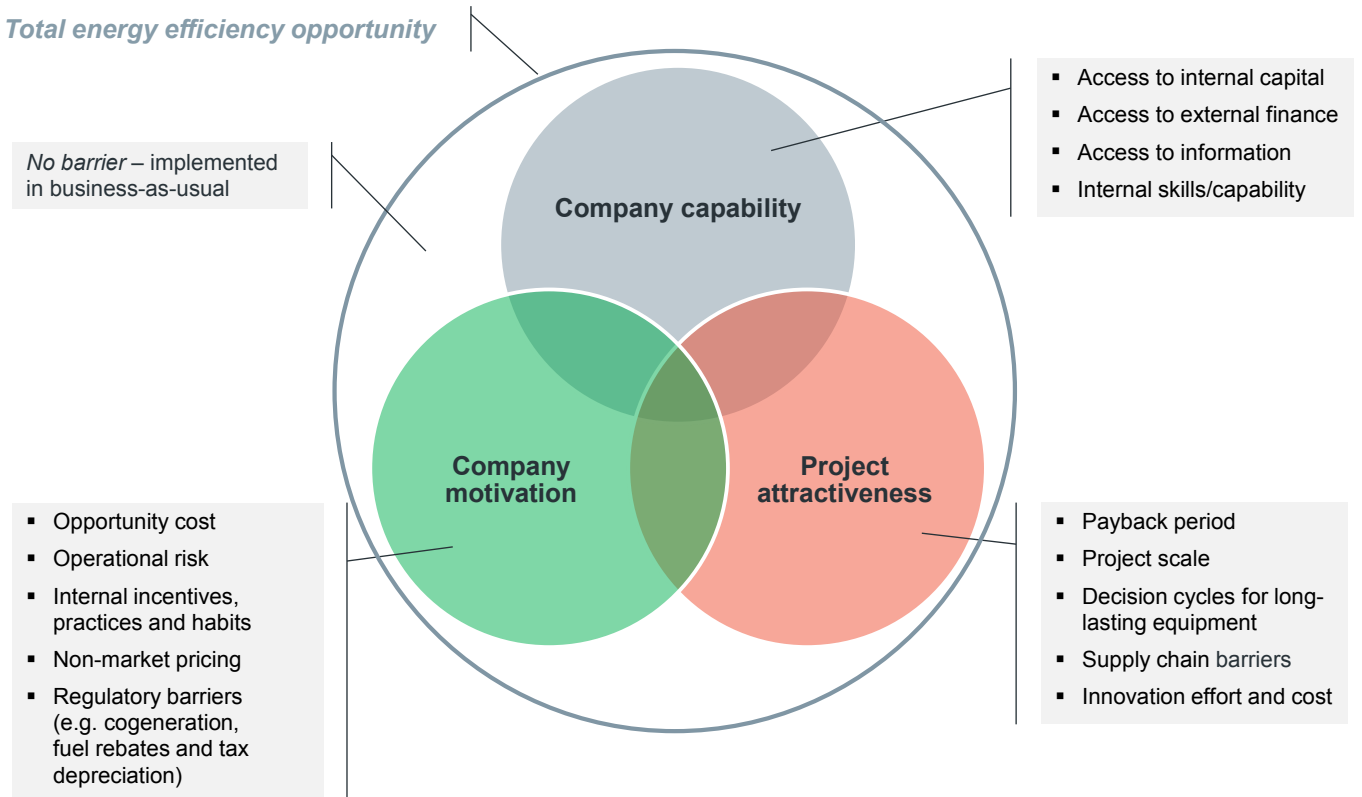
Note that totals do not sum due to rounding. Additional savings of 1 PJ in both Water and Waste Services and Construction were also identified, but are not shown in the chart above

Most of these savings have a payback of less than 2 years, primarily through operational improvements such as implementation of process controls and measurement, process design and optimisation or changes in behaviour or maintenance practices.

It is likely that the potential for energy efficiency is greater than this analysis has identified, given that company reporting often concentrates on opportunities with a payback of less than 4 years, and a range of barriers may inhibit both the identification and implementation of additional energy efficiency potential.

NOT ALL ENERGY SAVINGS IDENTIFIED WILL BE IMPLEMENTED, AS MANY BARRIERS EXIST

Reporting shows that unless required to, companies are unlikely to implement all the energy efficiency opportunities they have identified. We have worked with experts to identify and categorise the barriers that can explain why companies will not implement some projects:

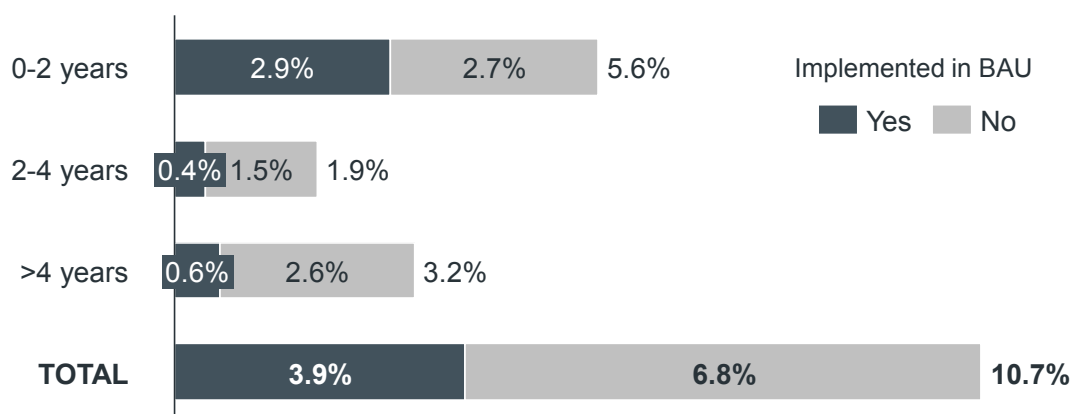


We have then linked these barriers to the identified energy savings potential to estimate how much activity could be expected to happen under current policy settings. To do this, we have quantified the impact of each barrier on each type of project by defining its coverage (does this type of project face this barrier?) and its strength (how much of an impediment is this barrier to the project?).

ONLY 40% OF IDENTIFIED ENERGY SAVINGS ARE EXPECTED TO BE IMPLEMENTED UNDER CURRENT POLICY SETTINGS, LEAVING SIGNIFICANT POTENTIAL UNTAPPED

As illustrated in the graph to the right, our analysis found that projects with a payback of less than 2 years are more likely to be taken up.

Energy savings under BAU compared to potential savings, % of energy use, 2010-11



SUMMARY OF RESULTS BY SUB-SECTOR

The table below summarises the projected energy savings potential by sub-sector in 2020, compared to the energy savings expected to be implemented in 2020 under current policy settings. These energy savings differ from those on pages 2 and 3 of this report, which focus on actual savings identified in 2010-11.

2020 Projected energy savings by sub-sector	Identified		Implemented in BAU
	TJ	% energy use	% energy use
Coal Mining	13,962	6.7%	2.9%
Oil and Gas Extraction	22,301	9.2%	2.0%
Metal Ore Mining	34,023	8.5%	3.9%
Non-Metallic Mineral Mining and Quarrying	1,697	7.3%	1.9%
Exploration and Other Mining Support Services	878	12.3%	5.1%
<i>Mining subtotal</i>	<i>72,862</i>	<i>8.3%</i>	<i>3.1%</i>
Food Product Manufacturing	15,391	10.8%	2.4%
Beverage, Tobacco and Textile	2,167	39.2%	3.1%
Wood, pulp, paper and printing	9,564	13.0%	2.8%
Petroleum and coal product manufacturing	27,331	24.0%	10.0%
Basic chemical and chemical product manufacturing	66,070	15.6%	6.8%
Polymer product and rubber product manufacturing	233	8.2%	2.1%
Mineral Product, Primary Metal and Metal Product	72,178	9.6%	4.2%
Fabricated Metal Product Manufacturing	226	8.1%	1.8%
Other Manufacturing	665	13.6%	1.7%
<i>Manufacturing subtotal</i>	<i>193,824</i>	<i>12.8%</i>	<i>5.1%</i>
Water and Waste Services	1,017	4.9%	2.1%
Construction	1,080	7.3%	1.6%
Transport	27,842	11.2%	2.8%
TOTAL	296,625	11.1%	4.2%

NEXT STEPS FOR THE INDUSTRIAL ENERGY EFFICIENCY DATA ANALYSIS PROJECT

The outcomes of this project will be verified through consultation with companies and experts – both the volume and type of energy savings available, and the quantified impact of the barriers preventing those savings from being captured.

Sectoral fact-sheets will also be created to build greater business understanding of the energy efficiency opportunities that may be available to them, and the barriers that might impede those opportunities from being taken up.

National ESI investigation

The Australian Government is undertaking further design work on a possible national ESI. However, no decision has been made about whether a national ESI will be introduced and this report should not be interpreted as a commitment by Government to a policy or course of action.

The full report is available at www.climateworksaustralia.org/publications.html

ClimateWorks Australia is an independent non-profit organisation whose mission is to facilitate substantial emissions reductions in the next five years in Australia by working with government, business, industry groups and the community via a collaborative action based approach.

ClimateWorks Australia is hosted by Monash University in partnership with The Myer Foundation.



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