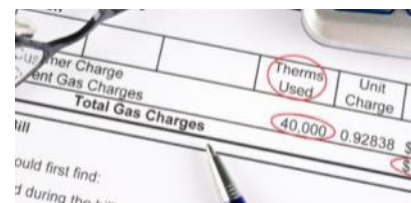


ENERGY PRODUCTIVITY INDEX FOR COMPANIES

National Energy Efficiency Conference 2016

16 November 2016





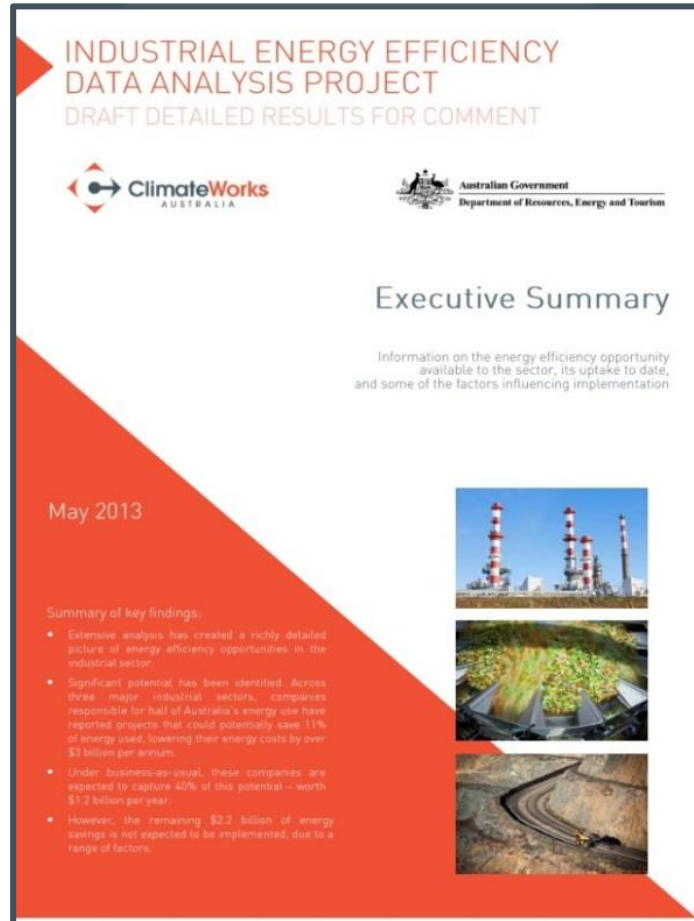
The Energy Productivity Index for Companies shows that companies could improve their profits by saving energy

- Energy productivity is **a cost effective** way to reduce emissions
- Evidence of **2-5x** spread in energy productivity
- **+2% to +10%** p.a. growth in profits for underperforming companies
- Improvement needed in **data disclosure**
- **New benchmark tool** can support understanding of and engagement around energy issues



ClimateWorks research on industrial energy efficiency

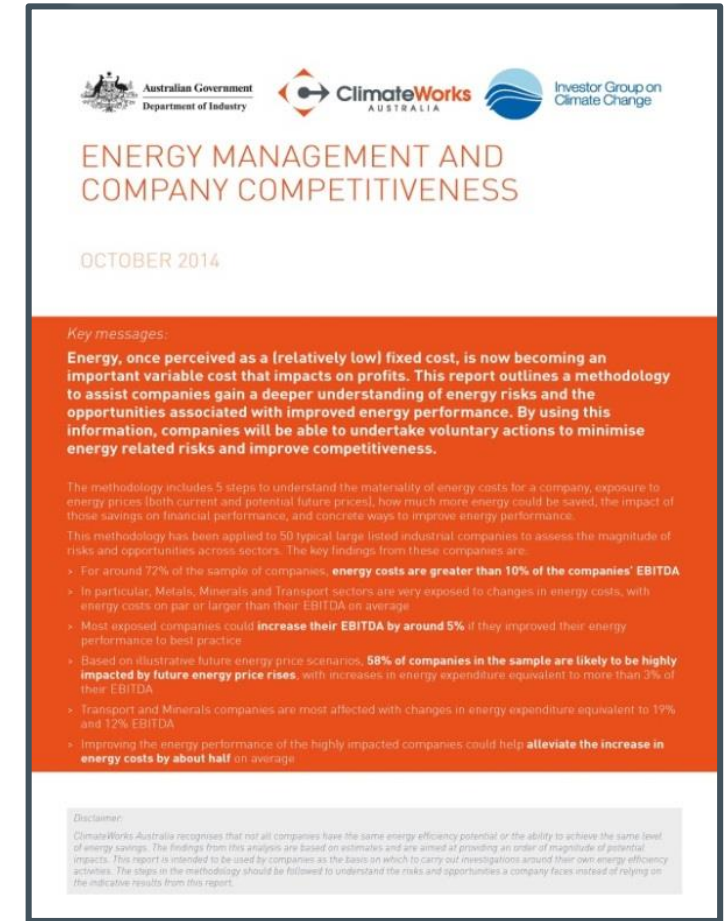
The Opportunity



Progress to capture it



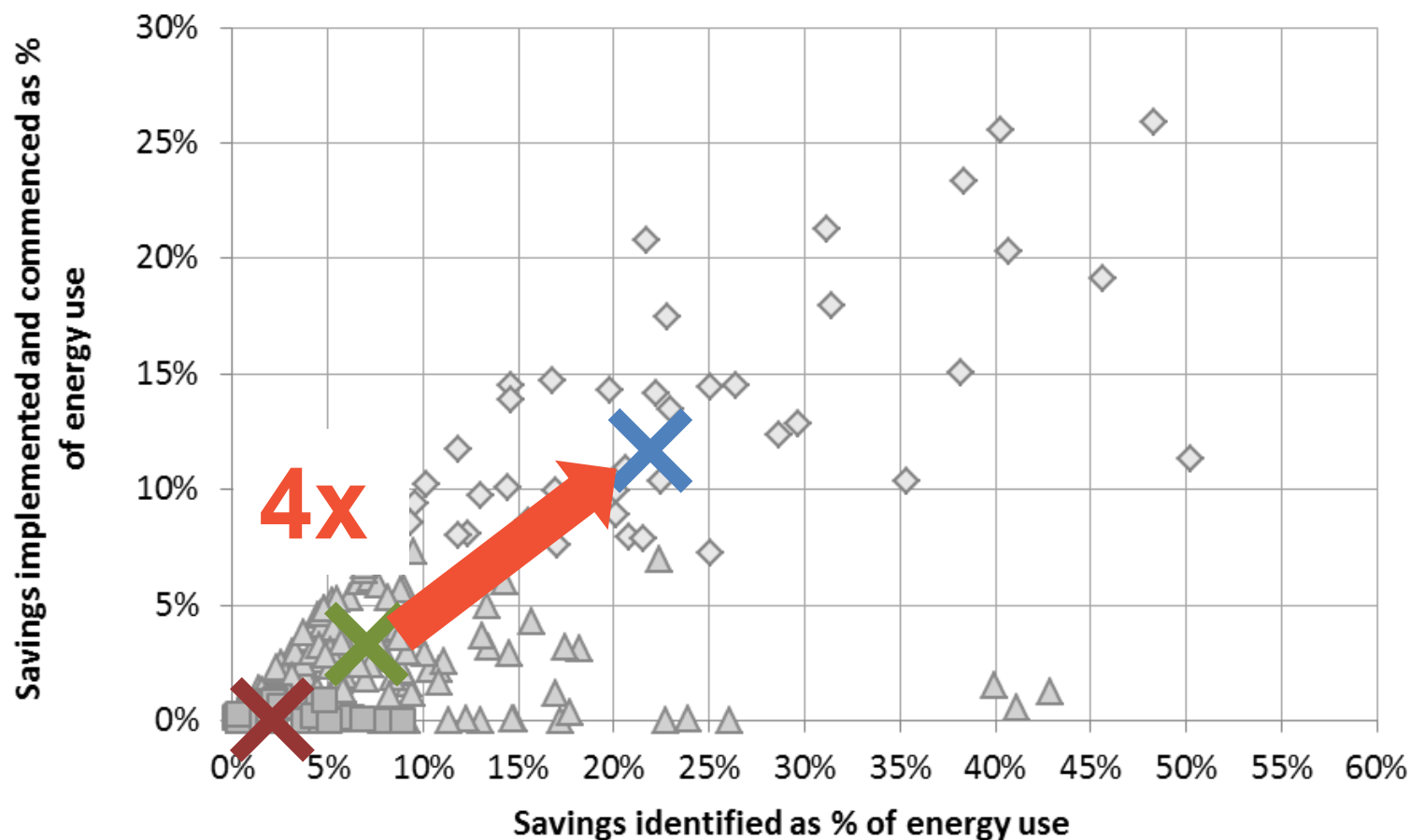
The business value of doing it



Data from the EEO program revealed a large variation in the amount of energy savings implemented by industrial companies

Distribution of companies according to energy savings identified and energy savings implemented, % of energy use – all EEO companies, $n=200$

- ◇ Top 20%
- ✕ Average Top 20%
22% identified
12% implemented
- △ Other
- ✕ Average Other
7% identified
3% implemented
- Bottom 20%
- ✕ Average Bottom 20%
3% identified
0% implemented

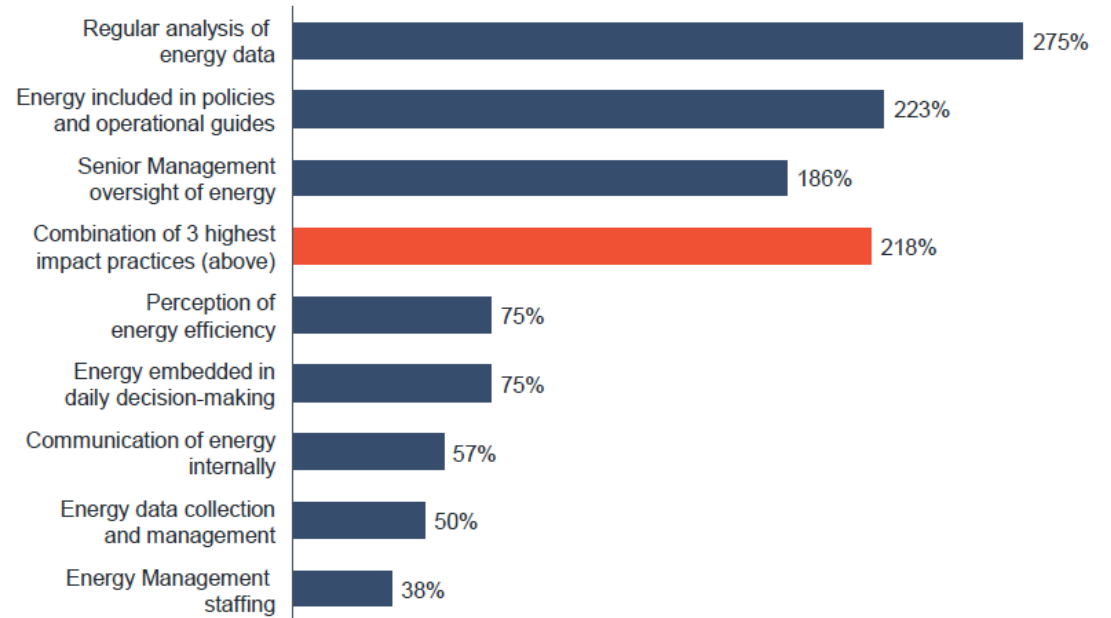


Source: ClimateWorks Australia (2013) *Tracking Progress Towards a Low Carbon Economy: special report on factors influencing large industrial energy efficiency*

Energy management best practices that companies can consider to improve performance are provided

- **Collecting and managing energy data**
- **Driving greater energy productivity from the top**
- **Establishing a supportive culture**
- **Valuing energy efficiency projects**
- **Setting ambitious goals and targets**

Exhibit 6.55: Percentage of additional savings achieved for companies with a high score for the practice compared to companies with a low score (DRET 2011, ClimateWorks team analysis)



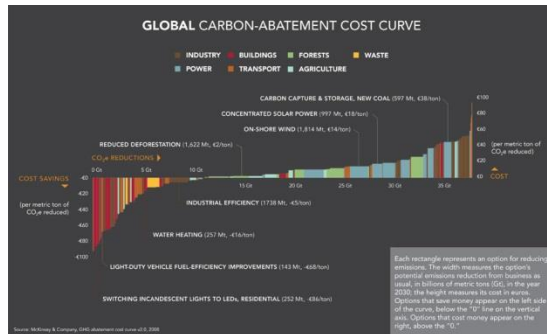
Extracted from [*Tracking Progress: Special Report on factors influencing large industrial energy efficiency*](#) (ClimateWorks Australia, July 2013)



The project is a partnership between the ClimateWorks Foundation and ClimateWorks Australia, with strong support from investor groups



Real-world,
practical solutions



Positive messages,
through influential
actors



To influence policy
& catalyse
business action



CalSTRs is lead investor for the project



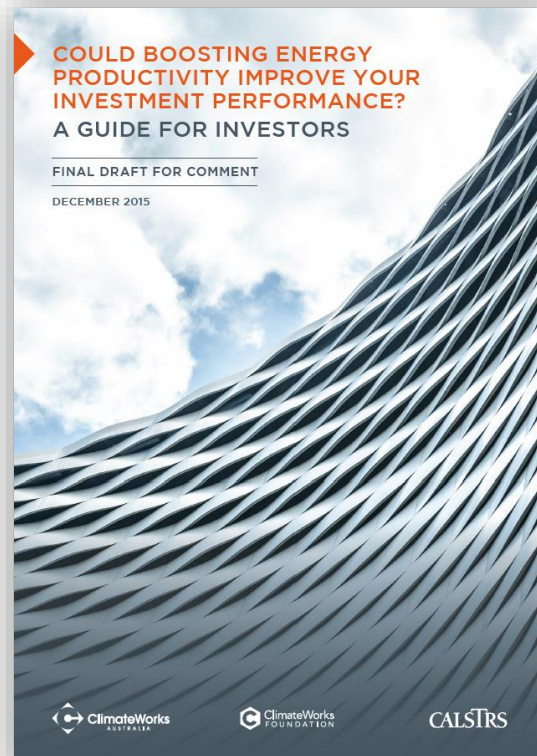
Investors groups are participating to our Steering Committee and will help us disseminate results



A guide and a series of supplementary reports are available online to help benchmark a portfolio of companies



Guide for investors



Sector summaries



AIRLINES



AUTOMOBILES



PAPER



STEEL

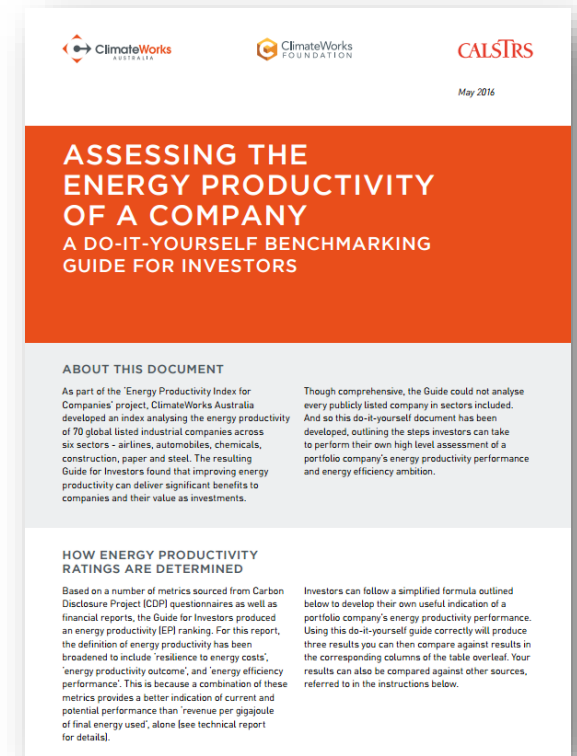


CHEMICALS



CONSTRUCTION
MATERIALS

Methodology factsheet



For over 70% of companies assessed, analysis indicated profitable opportunities to improve energy productivity and reduce emissions

Results for 71 companies analysed, 2013 and 2014



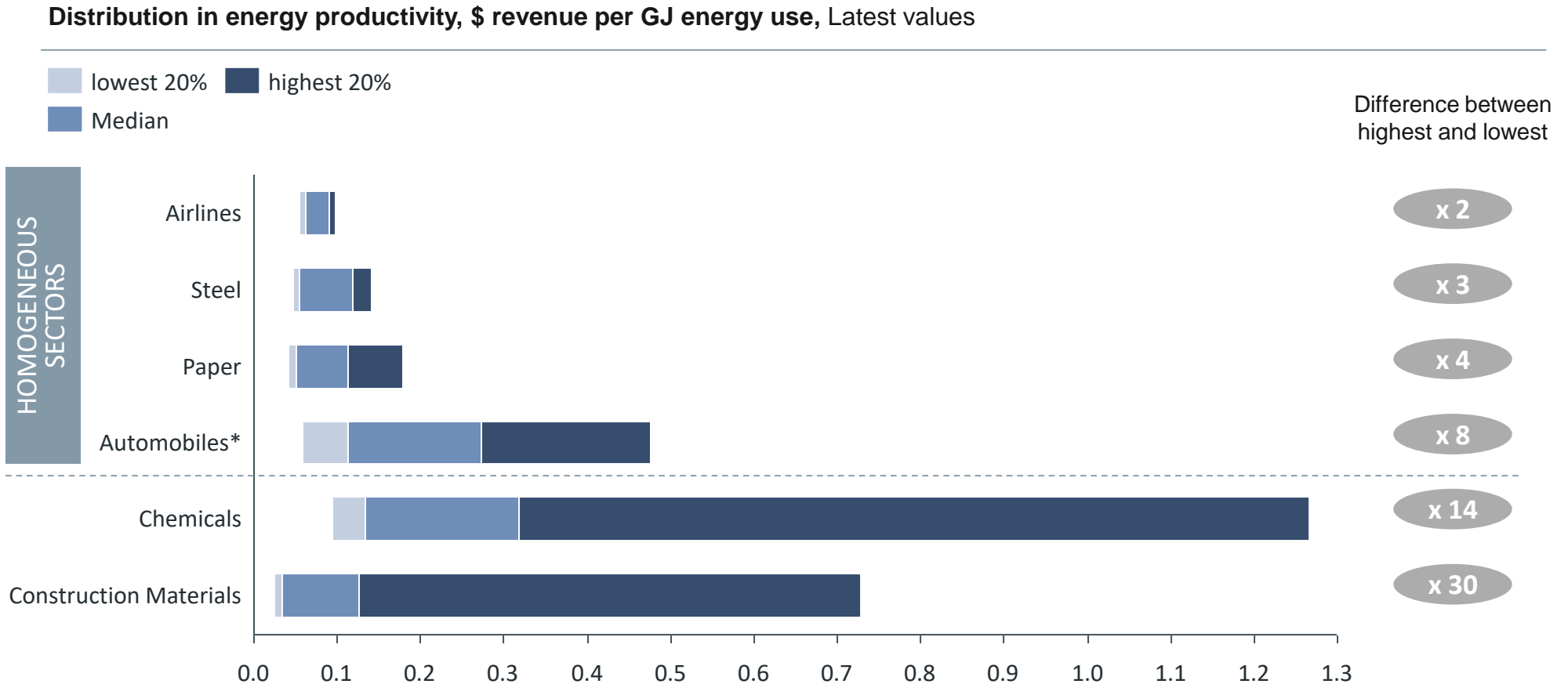
For **1** unit
of energy used

\$900m saved

7 MtCO₂e abated



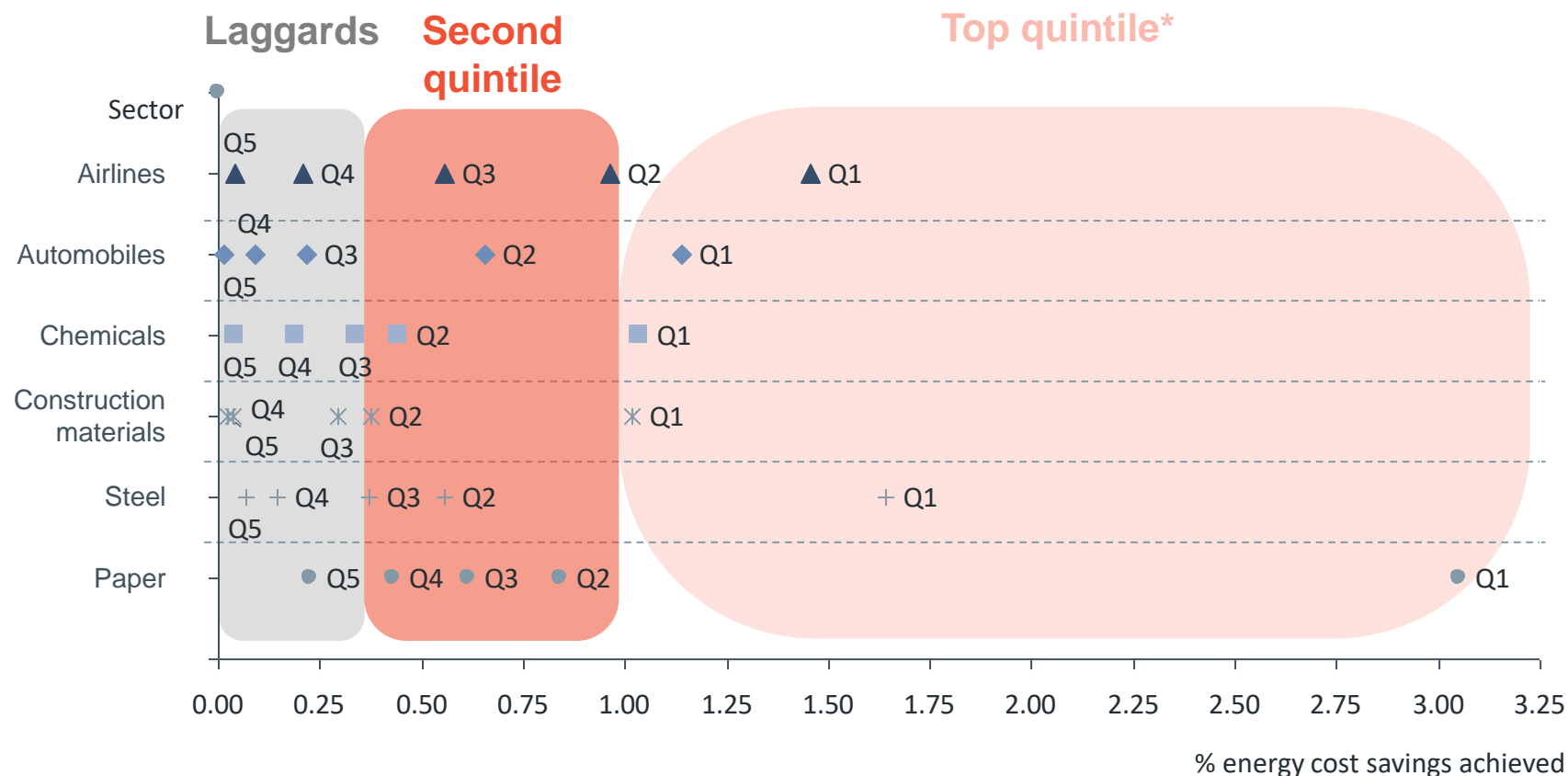
Leading companies in each sector can produce the same output as their competitors with up to 8 times less energy input



*Automobiles is expressed in units produced per GJ energy use to be of comparable magnitude with other sectors



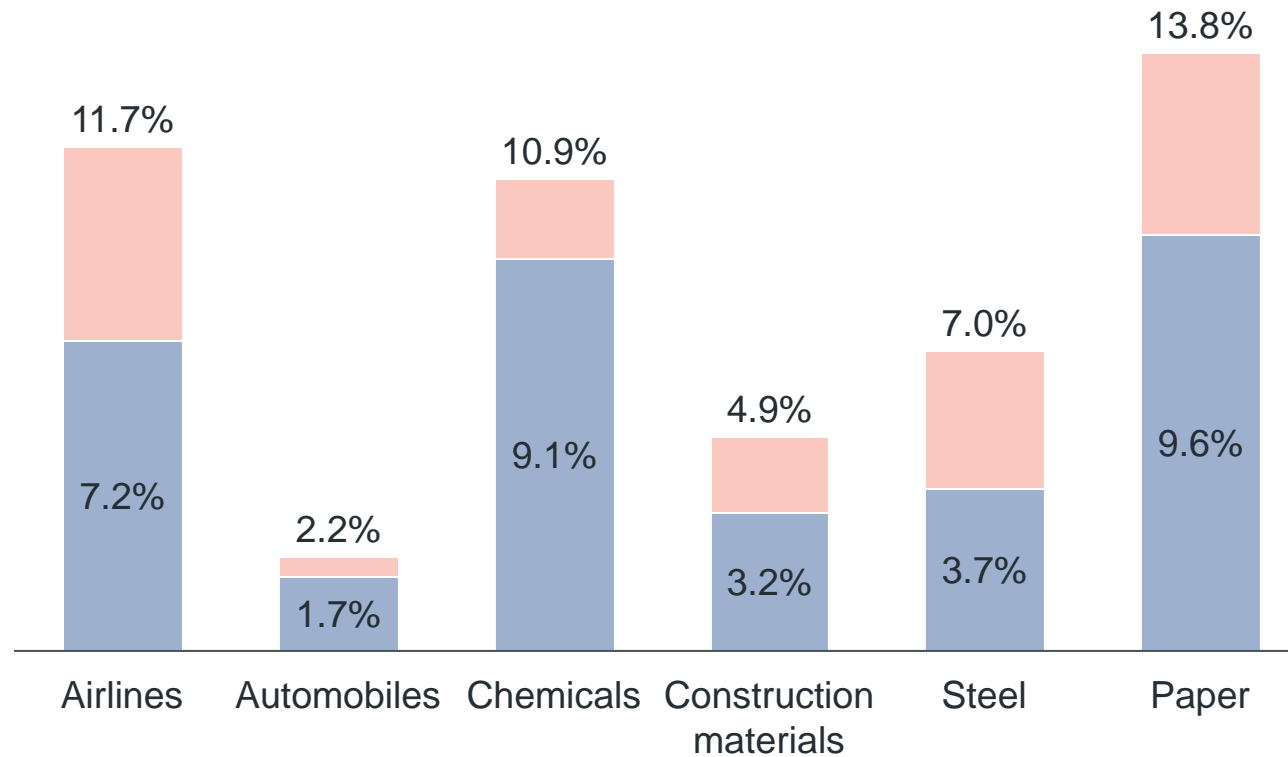
We found that leaders consistently report greater savings than the rest of the sector



* Quintiles refer to the 20th percentile of companies in each sector, i.e. top quintile refers to the highest 20% of companies in the sector, while second quintile refers to the second highest 20% companies in the sector. Further detail can be found [on this page](#).

Companies stand to gain between 2% and 10% growth in annual profits from each year of energy efficiency improvements in line with their best performing peers

% EBIT uplift per annum if lagging companies match top quintile (20%)
(50% companies with highest increase)



Gross savings
+ 2 to 14% p.a.

Net savings
+ 2 to 10% p.a.



We developed six sector indices which identify portfolio companies and recommended actions for each

Steel company scores against key measures

Company	General Rating	Energy cost resilience	Energy productivity outcome	Energy efficiency performance
Hyundai Steel	80%	<div><div></div></div>	74% <div><div></div></div>	57% <div><div></div></div> 100%
Arcelor Mittal	74%	<div><div></div></div>	68% <div><div></div></div>	57% <div><div></div></div> 89%
China Steel	59%	<div><div></div></div>	44% <div><div></div></div>	49% <div><div></div></div> 73%
JSW Steel	58%	<div><div></div></div>	50% <div><div></div></div>	8% <div><div></div></div> 100%
Tata Steel	25%	<div><div></div></div>	33% <div><div></div></div>	51% <div><div></div></div> 2%
Cia. Siderurgica Nacional - CSN	21%	<div><div></div></div>	50% <div><div></div></div>	0% <div><div></div></div> 25%
United States Steel Corporation	20%	<div><div></div></div>	38% <div><div></div></div>	15% <div><div></div></div> 17%
POSCO	14%	<div><div></div></div>	45% <div><div></div></div>	13% <div><div></div></div> 0%
19 companies	Incomplete/insufficient data provided to CDP to conduct analysis (Alba SE, APERAM, Arrium, Bekaert NV, BlueScope Steel Ltd, Cliffs Natural Resources Inc, Essar Steel Group, Fortescue Metals Group, Gindalbie Metals, Highveld Steel And Vanadium Corporation Limited, Hill & Smith Holdings, Höganäs AB, JFE Holdings, Inc., KARDEMİR KARABÜK DEMİR ÇELİK SANAYİ VE TİCARET A.Ş., Kobe Steel, SSAB, Sumitomo Metal Industries, Ltd., Sundance Resources, Welspun-Gujarat Stahl Rohren).			
Non reporters	All other companies did not respond to CDP			
5 companies	Reviewed but excluded from analysis (ACERINOX, Arcelor Mittal South Africa Ltd, Outokumpu Oyj, Sims Metal Management Limited, United Industries).			

Satisfactory data

- Positive results; could discuss potential to optimize
- Request clarification of results and discuss potential to improve

Insufficient data

- Results provisional due to data uncertainty. Request additional data to confirm rating
- Data provided is insufficient to conduct analysis; require more information

Not included in analysis

- Out of scope

Company performance against each metric is also provided to help support discussions with companies

Performance against each metric

Data shows 2013-14 values unless otherwise specified

Performance legend

Cells were color-coded based on 0-100% scores attributed to companies for each metric*

	High > 75%	> 50%	> 25%	Low < 25%
Energy cost resilience				
Energy productivity outcome				
Energy efficiency performance				

* Detailed translation of metrics into scores is presented in the Technical Report

\$ Excluded from quintile analysis (outlier)

Low quality/uncertain data

Uncertain data	0.49%
Insufficient Data	ID
Not Quantified	NQ

Company	General Rating	Weights		Energy cost resilience		Energy productivity outcome		Energy efficiency performance			Additional information
		10%	10%	20%	15%	15%	15%	15%	15%		
		Energy cost range, % opex	Profitability, EBIT / Revenue	Energy productivity, tonne/GJ	Energy productivity, Average annual % change (earliest to latest)	Savings per year, % est. energy cost	Potential financial uplift (%) EBIT) if reach top quintile	Potential financial uplift (%) EBIT) if reach second quintile	Emissions reduction from energy efficiency activities, % gross scope 1 & 2 emissions		
\$ Hyundai Steel	80%	5-10%	7.3%	0.19	-6.4%	2.36%	0.0%	0.0%	0.78%		
Arcelor Mittal	74%	5-10%	6.1%	0.15	-5.2%	0.52%	0.4%	0.0%	0.27%		
China Steel	59%	25-30%	8.0%	0.06	5.0%	0.49%	1.2%	0.1%	0.73%		
JSW Steel	58%	35-40%	11.4%	0.07	ID	0.88%	0.0%	0.0%	4.72%		
Tata Steel	25%	50-55%	6.6%	0.13	-4.5%	0.20%	5.1%	2.4%	1.40%		
Cia. Siderurgica Nacional - CSN	21%	40-45%	17.7%	0.04	ID	NQ	1.6%	0.9%	0.30%		
United States Steel Corporation	20%	5-10%	-2.2%	0.06	-2.9%	NQ	-1.4%	-0.1%	1.99%		
POSCO	14%	15-20%	4.9%	0.05	-2.0%	0.07%	2.8%	1.5%	0.05%		





We provide example questions companies' boards or senior management can ask themselves, with some information to support discussions

1. Clarify current performance

- a) Are you reporting on energy-related issues comprehensively and accurately in public reports?
- b) How do your current efforts to improve energy efficiency and energy productivity compare with your peers? Are legitimate factors producing a lower-than-expected result?

2. Discuss how performance can be improved in the future

- a) Are your future plans to improve energy efficiency and energy productivity ambitious enough?
- b) What processes do you have in place to ensure your plans are implemented effectively?





Ideally, company information on energy issues should be granular, consistent and accurate

Granularity

- Energy use, energy cost, energy cost savings from implemented energy efficiency activities

Consistency

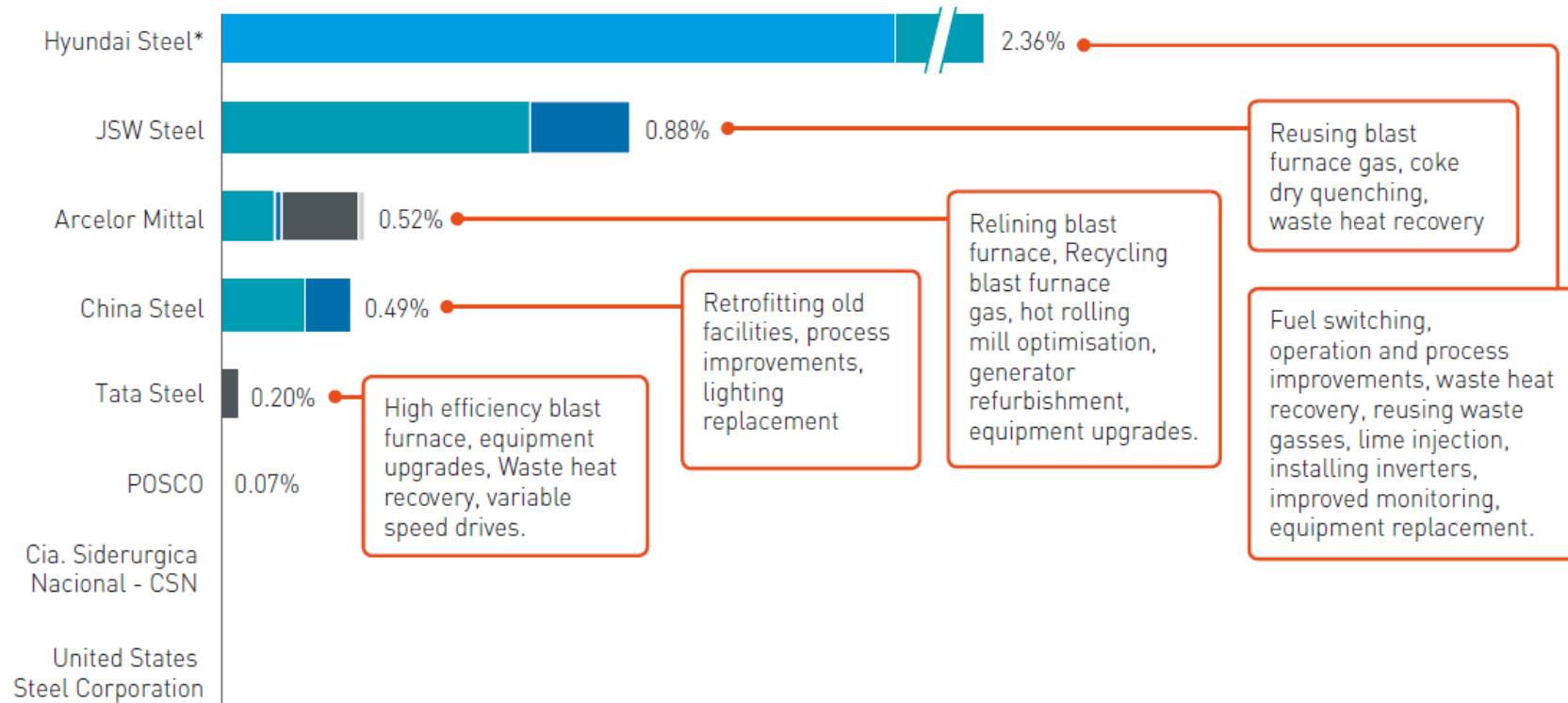
- Energy data provided for the same scope of operations as financial data
- Data is consistent in scope year-on-year



Example of energy efficiency activities that have been implemented by leaders in a sector are available to compare current efforts

Energy savings shown as a percentage of energy cost

Energy efficiency improvements by steel companies detailed in orange boxes



Payback period of energy efficiency improvements

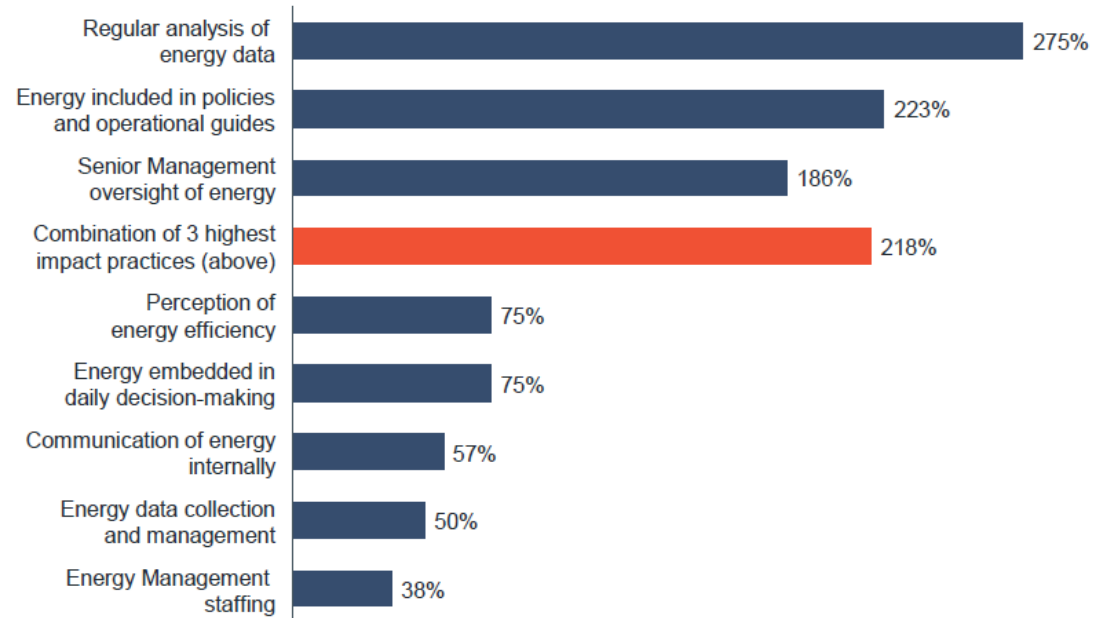
<1 year 1-3 years 4-10 years >10 years Unspecified // Truncated data

* outlier, excluded from quintiles analysis

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Extracted from [*Tracking Progress: Special Report on factors influencing large industrial energy efficiency*](#) (ClimateWorks Australia, July 2013)





Improving energy productivity can be a low cost and near term action for businesses to avoid significant risk

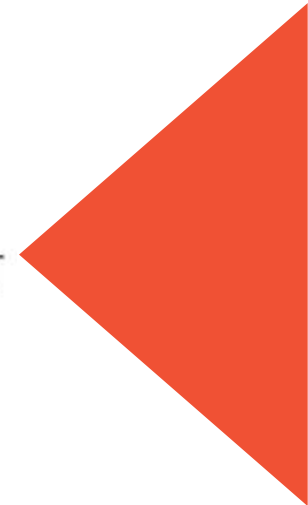
- Energy productivity is **a cost effective** way to decarbonise portfolios
- Evidence of **2-5x** spread in energy productivity
- **+2% to +10%** p.a. growth in profits for underperforming companies
- Improvement needed in **data disclosure**
- **New benchmark tool** can support understanding of and engagement around energy issues





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