

ENERGY PRODUCTIVITY INDEX FOR COMPANIES

May 2016
Final

AUTOMOBILE SECTOR SUMMARY



ABOUT THIS SUMMARY

This sector summary is one of a series of six sector fact sheets to be used in conjunction with the guide for investors titled, *Could boosting energy productivity improve your investment performance?* These companion pieces are the result of analysis under

the *Energy Productivity Index for Companies* project, designed to help investors identify key sectors and portfolio companies within those sectors, where improving energy productivity can deliver significant benefits to companies and their value as investments.

RESULTS SNAPSHOT

- > Given low energy costs and moderate profit margins, companies in this sector are less exposed to energy-related risks
- > BMW AG demonstrated the best overall energy performance by delivering the highest weighted average score across all measures
- > Toyota produces 8x more vehicles per GJ of energy used compared to the least productive company
- > Most companies showed recent improvements in energy productivity - reaching up to 32.6% per annum
- > Daimler and Fiat achieved the highest energy savings in the sector, equivalent to US \$15 and \$7 per unit of vehicle produced, respectively
- > Achieving energy savings equivalent to the average of those two companies (top 20%) could deliver up to 7% boost to lower performing automobile companies' annual profits
- > US \$129 million annual savings were achieved across the sector through energy efficiency improvements
- > Sector improvements required an estimated US \$277 million in capital investment. When annualised, this is approximately equivalent to 22% of annual cost savings
- > Improvements implemented by reporting companies also achieved significant emissions reductions. For each 1% reduction in energy costs achieved, emissions were reduced by 5.4%.

Summaries available for six sectors



AIRLINES



AUTOMOBILES



CHEMICALS



CONSTRUCTION
MATERIALS



PAPER



STEEL

COMPARING COMPANIES IN THE AUTOMOBILE SECTOR

The Energy Productivity Index compares companies in each sector based on three measures – **Resilience to energy cost**, **Energy productivity outcome**, and **Energy efficiency performance**.

Automobile company scores against key measures

Company	General Rating	Energy cost resilience	Energy productivity outcome	Energy efficiency performance
BMW AG	68%	96%	37%	80%
Daimler AG	68%	88%	15%	100%
Fiat	68%	66%	31%	97%
Hyundai Motor	60%	92%	100%	15%
Toyota Motor Corporation	57%	74%	80%	32%
Renault	56%	57%	40%	67%
Mahindra & Mahindra	55%	66%	100%	16%
Volkswagen AG	51%	75%	57%	36%
Mazda Motor Corporation	43%	57%	88%	1%
Nissan Motor Co., Ltd.	37%	64%	54%	11%
General Motors Company	34%	46%	41%	24%
Honda Motor Company	33%	70%	34%	17%
Ford Motor Company	30%	63%	49%	0%
PSA Peugeot Citroen	30%	38%	59%	3%
5 companies	Incomplete/insufficient data provided to CDP to conduct analysis (Dr. Ing. h. c. F. Porsche AG, Fuji Heavy Industries Ltd., Jaguar Land Rover Ltd, Mitsubishi Motors Corporation, TOFAŞ TÜRK OTOMOBİL FABRIKASI A.Ş.).			
Non reporters	All other companies did not respond to CDP			
6 companies	Reviewed but excluded from analysis (Astra International, Magna International, MARTINREA INTERNATIONAL INC., Navistar International Corporation, TOYOTA CAETANO, Williams Grand Prix Engineering Limited).			

Satisfactory data

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

Insufficient data

- Data provided is insufficient to conduct analysis; require more information

Not included in analysis

- Out of scope; different type of activity, or low energy cost making analysis too uncertain

For further details on identifying companies to engage with and how to measure a company's performance against its competitors, refer to section 03 of the [Guide for Investors](#).

A note about project scope and limitations:

Analysis undertaken was limited by the availability and quality of company data. Energy data used in the analysis was primarily sourced from CDP, complemented with other voluntary company reporting where required. This leads to potential limitations as outlined on page 2 of the Guide for Investors.



Guide for Investors and Technical Report available at energyproductivity.net.au



Using data from CDP, companies were scored and ranked based on their performance against seven metrics (presented in the table below) which underpin the measures shown on the previous graph.



Performance against each metric

Data is sourced from 2013-15 CDP responses and financial reports for corresponding years unless otherwise specified.

Company	General Rating	Energy cost resilience		Energy productivity outcome		Energy efficiency performance			Additional information
		Weights	10%	10%	20%	15%	15%	15%	
		Energy cost estimate, % opex (latest)	Profitability, EBIT / Revenue	Energy productivity, Unit/GJ	Energy productivity, Average annual % change (earliest to latest)	Savings per year, \$ per unit produced	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
BMW AG	68%	0-5%	11.1%	0.12	3.2%	2.2	0.2%	0.0%	1.7%
Daimler AG	68%	0-5%	8.4%	0.06	-1.5%	15.4	0.0%	0.0%	3.5%
** Fiat	68%	0-5%	4.0%	0.11	2.1%	7.4	0.4%	0.0%	6.3%
Hyundai Motor	60%	0-5%	9.3%	0.32	32.6%	0.7	1.1%	0.3%	1.0%
Toyota Motor Corporation	57%	0-5%	5.6%	0.48	0.3%	0.8	0.8%	0.2%	0.3%
Renault	56%	0-5%	2.3%	0.15	1.4%	5.6	1.3%	0.0%	8.4%
Mahindra & Mahindra	55%	0-5%	3.9%	0.42	7.1%	1.4	1.3%	0.3%	3.7%
Volkswagen AG	51%	0-5%	5.9%	0.15	6.4%	0.5	0.7%	0.2%	0.2%
Mazda Motor Corporation	43%	0-5%	2.2%	0.24	6.3%	0.6	2.4%	0.7%	0.5%
Nissan Motor Co., Ltd.	37%	5-10%	5.2%	0.15	4.3%	0.0	1.0%	0.3%	0.0%
General Motors Company	34%	0-5%	-5.2%	0.13	2.9%	3.1	-1.0%	-0.1%	2.7%
Honda Motor Company	33%	0-5%	4.9%	0.09	2.8%	0.0	0.9%	0.3%	0.1%
Ford Motor Company	30%	0-5%	3.5%	0.13	6.6%	0.5	1.3%	0.4%	0.2%
*** PSA Peugeot Citroen	30%	5-10%	0.1%	0.18	2.8%	0.8	6.9%	1.8%	0.3%

Performance legend

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

	High > 75%	> 50%	> 25%	Low < 25%
Energy cost resilience	Dark Blue	Light Blue	Very Light Blue	White
Energy productivity outcome	Dark Blue	Light Blue	Very Light Blue	White
Energy efficiency performance	Dark Blue	Light Blue	Very Light Blue	White

** OPEX not available, estimate based on industry average OPEX/Revenue ratio

EBIT averaged over latest 4 years

* Detailed translation of metrics into scores is presented in the Technical Report (energyproductivity.net.au/resources)

A CULTURE OF COLLABORATION DRIVING ENERGY PRODUCTIVITY

Across the BMW Group, environmental improvements that prove effective at one location are implemented at other locations wherever possible. This is supported by a multidisciplinary energy competence centre, bringing together technical experts from different plants and specialists from Corporate Environmental Protection. This centre informs future planning and process improvements by combining legal and technology expertise with best-practice solutions, supported by smart energy data management systems.

This has led to a 36% reduction in energy consumption from vehicle production (per vehicle average) since 2006, now down to 2.19 MWh per vehicle. In the face of rising energy prices in the short term, this reduction in energy costs contributes significantly to the BMW Group becoming more profitable and competitive.

Reference: www.bmwgroup.com/content/dam/bmw-group-websites/bmwgroup_com/responsibility/downloads/en/2015/BMW_SVR_2015_RZ_EN.pdf



ENGAGING WITH COMPANIES

1. Seek clarification on a company's performance

Start with metrics that are incomplete or appear to indicate lower performance. As an indication of a company's current efforts, energy efficiency activities that have been implemented by others in this sector are presented below to help identify whether a company is considering all areas worth investigating.

2. What to ask of companies where low performance is identified

Once a company's performance has been confirmed (or re-assessed after additional information), investors can suggest a range of internal energy management practices which could improve that company's performance.

3. Ways to engage with underperforming companies

Where further engagement with companies is required, refer to section 04 of the [Guide for Investors](#) which suggests questions that companies could be asked and internal energy management practices they might consider.

More than 75% of the energy efficiency opportunities implemented by companies in the automobiles sector have a less than 3 year payback, or an equivalent of about 50% internal rate of return.

Energy savings shown per unit produced, coloured by payback period

Energy efficiency improvements detailed in callout boxes

