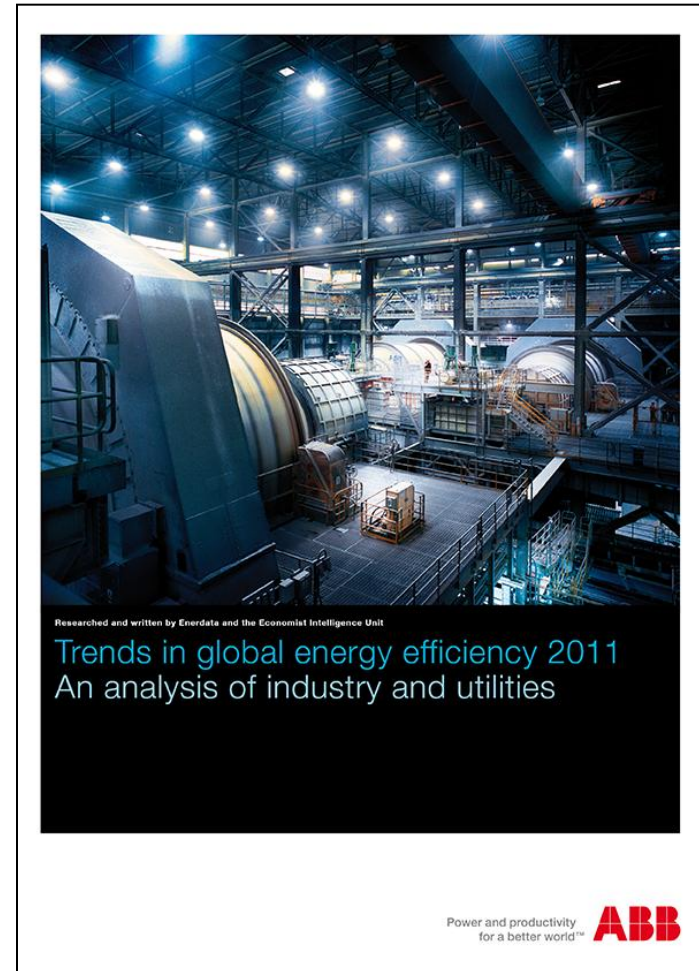


# The frugal manufacturer: Using energy sparingly

A research report for ABB

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# Objectives of the research

- Businesses are facing a **future of constraints**, including restricted access to energy, and curbs on carbon dioxide emissions. **Improving industrial energy efficiency is no longer simply optional.**
- This report looks at how companies can promote long-term financial growth by **managing energy efficiency in their production processes.**
- It discusses current **trends** in industrial energy efficiency; how executives are overcoming **obstacles**; and the **long-term outlook.**



# About the research

## ❖ Main components of the research:

An online survey of 348 senior executives in January and February 2011

- **High level:** Over two-thirds are executives at director-level
- **Global:** Most are based in North America, Western Europe, and Asia-Pacific
- **Industry focus:** Manufacturing and power sectors only
- **Both large and small:** 58% represent large companies (more than US\$500m in annual revenue)



In-depth interviews with experts in the following organisations:

- **3M, US**
- **American Council for an Energy-Efficient Economy, US**
- **Apollo Tyres, India**
- **BASF, China**
- **Bayer, China and Germany**
- **Bureau of Energy Efficiency, India**
- **CEMEX, Mexico**
- **Dow Chemical, US**
- **European Bank for Reconstruction and Development, UK**
- **Orica, Australia**
- **Procter & Gamble, US**
- **Stora Enso, Finland**
- **UltraTech Cement, India**
- **United Nations Industrial Development Organization, Austria**



Note: Separately, Enerdata analysed worldwide energy consumption in seven energy-intensive industries.

# Key findings

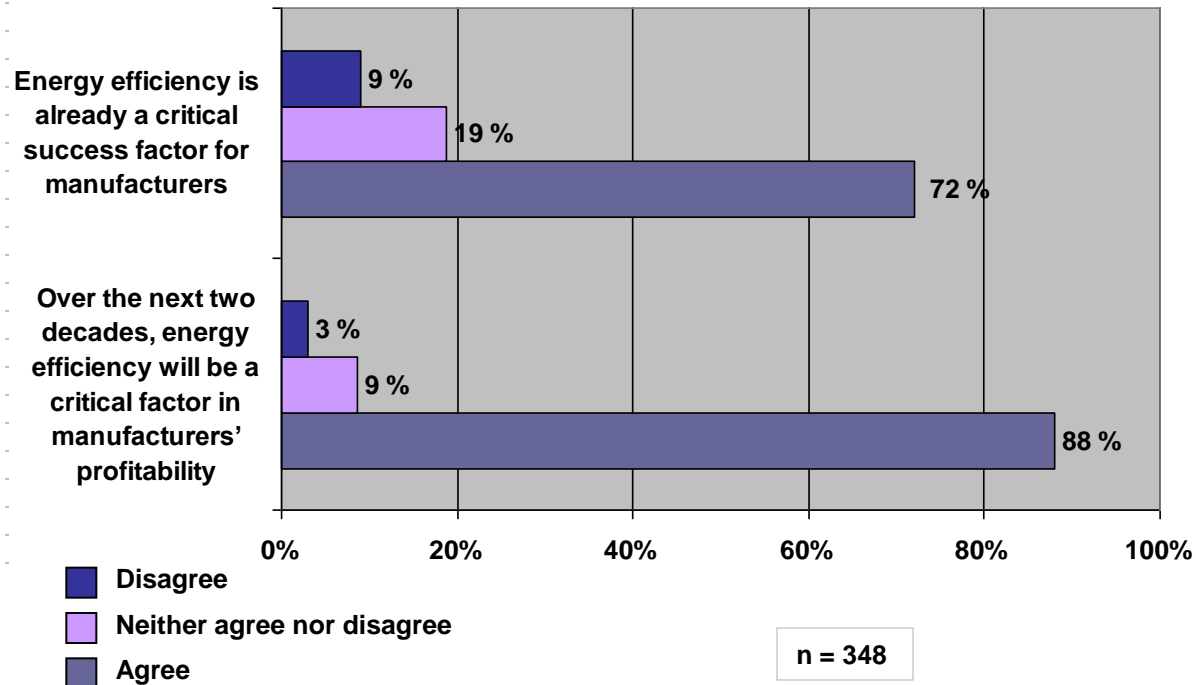
- Industry executives say improvements in energy efficiency will be **critical to their businesses** in the coming two decades...
- ... with companies looking above all for **financial returns** from their investments in energy efficiency.
- Nonetheless, **only a minority** are actually taking action to improve efficiency.
- This gap between awareness and action is caused largely by **lack of information**.
- However, leading firms are **overcoming** some of these obstacles...
- ... and new **regulations** will accelerate the trend by increasing pressure on companies to improve energy efficiency.
- **Improvements** will come from existing technologies— and from process innovations.



# Key finding 1: Energy efficiency is crucial

## More than 70% agree that energy efficiency is a critical success factor for manufacturers today...

To what extent do you agree or disagree with the following statements? Please select one in each row.

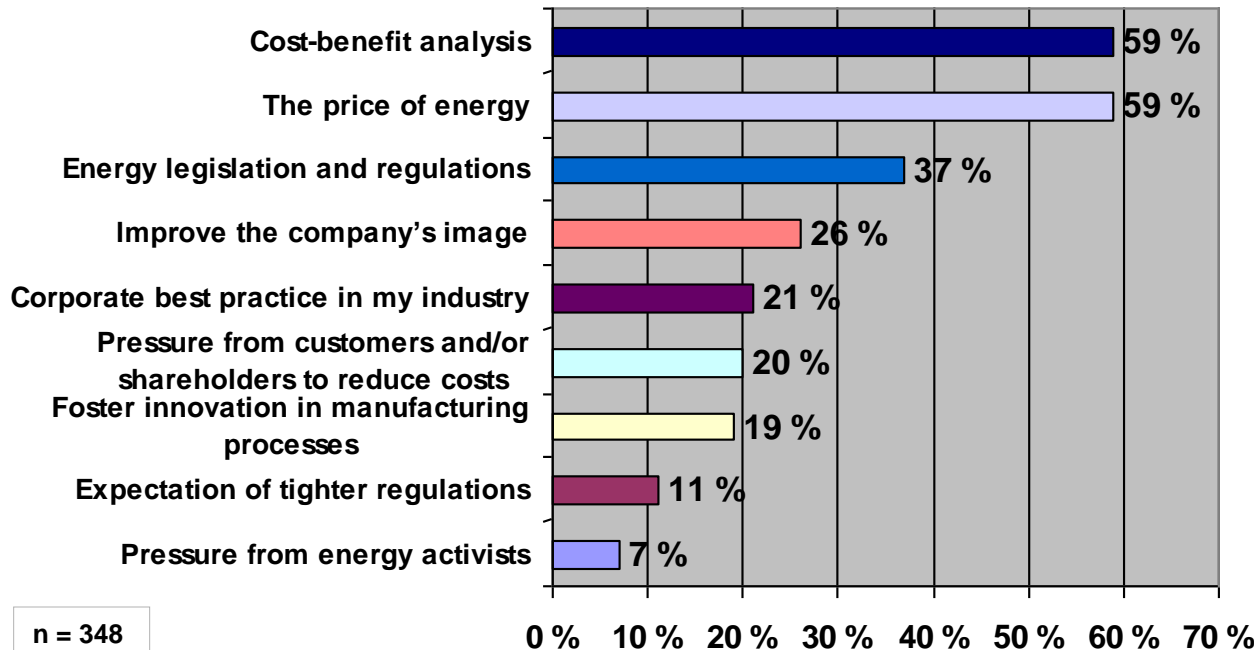


... and **almost 90%** of manufacturers say industrial energy efficiency will be a **critical success factor** for their business in the **coming two decades**.

# Key finding 2: A chiefly financial motivation

## Companies mostly look for financial returns from their investments in energy efficiency...

What are the main factors that will influence your company's investment in industrial energy efficiency over the next three years, in your view? Select up to three.



❖ **59%** of survey respondents cite **cost-benefit analysis** as one of the biggest factors in making the case for investments in energy efficiency.

❖ **The price of energy** is an equally important motivation for companies to make energy efficiency investments.

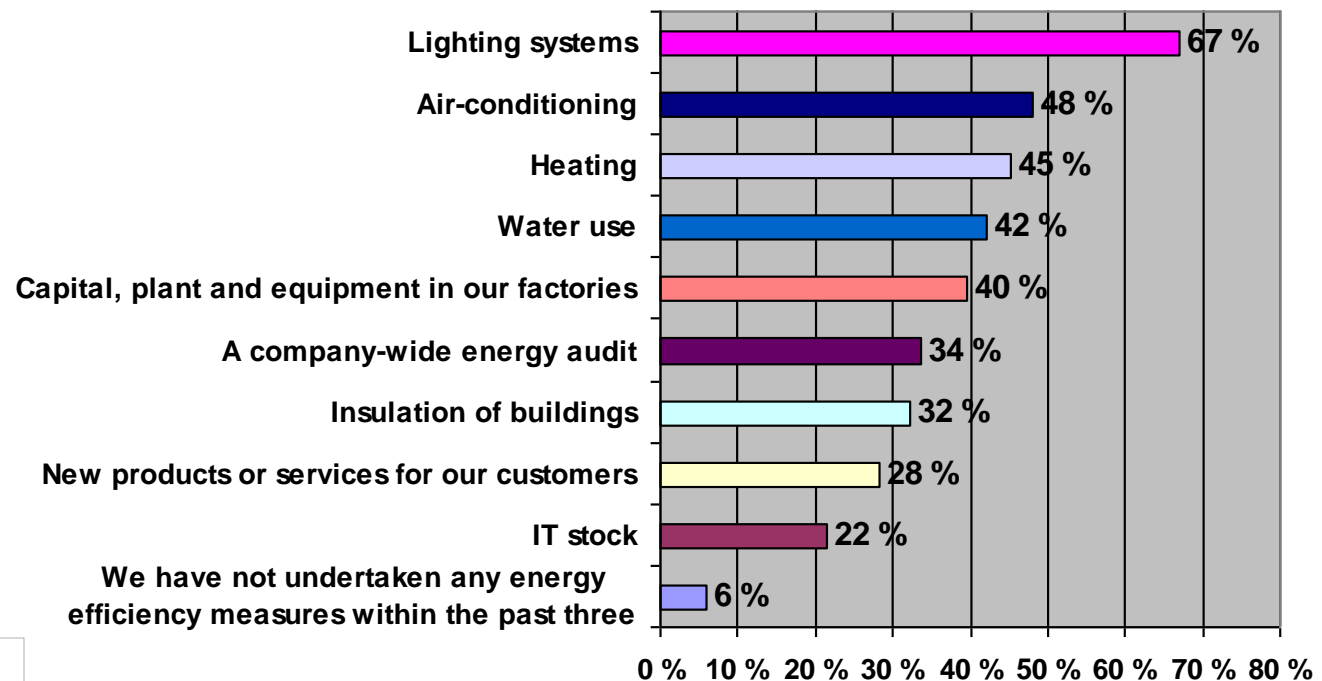
# Key finding 3: Companies are not yet taking action

## ... but only a minority are investing in energy efficiency systems

- Only **40%** of respondents say they have invested in **capital, plant and equipment** within the past three years to improve energy efficiency.

- Just **34%** have undertaken a **company-wide energy audit**

In which of the following areas has your organisation undertaken measures within the past three years to improve energy efficiency?  
Select all that apply.

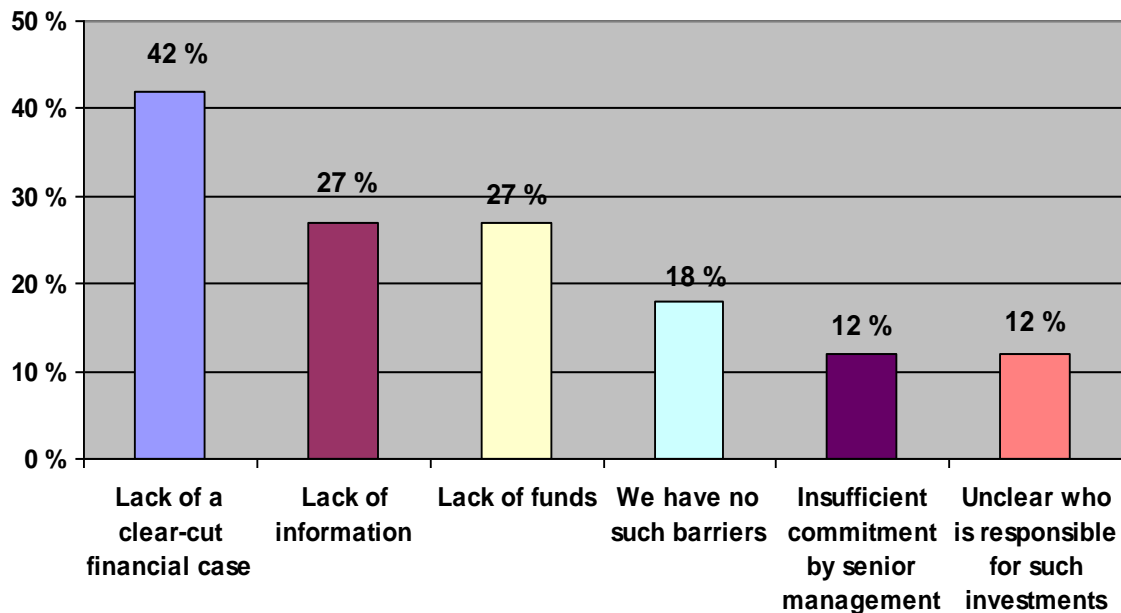


n = 348

# Key finding 4: A lack of information

## No clear-cut financial case...

What, if any, are the main barriers to investment in industrial energy efficiency in your organisation?  
Select up to two.



n = 348

- **42%** of executives cite the lack of a clear **financial case** as a **main barrier** impeding investments
- **27%** cite a lack of **information** about energy-efficiency options
  - Lack of information on **benchmark efficiency levels** for their industry
- **27%** cite lack of **funds** as the greatest barrier



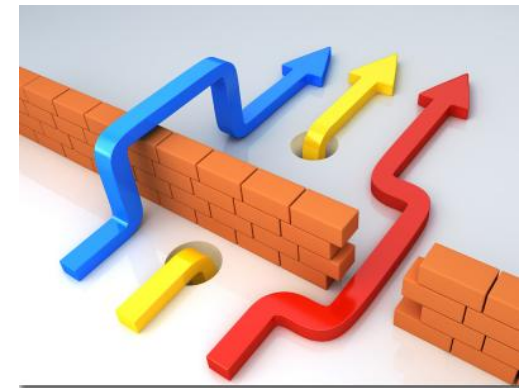


# Key finding 5: Obstacles can be overcome

## ... but some companies and policy makers are overcoming these barriers

Simple but effective measures include:

- **Careful timing** of efficiency improvements to minimize the financial impact of plant downtime
- **Pilot energy-efficiency programs** in small business zones
- ❖ Best practice examples:
  - **3M Group**—a corporate-wide energy projects database
  - **India's Bureau of Energy Efficiency**—a dedicated program to advise small companies on energy efficiency
- In the absence of industry benchmarks, companies are comparing plants' energy efficiency performance with their prior-year performance to **track improvement**.

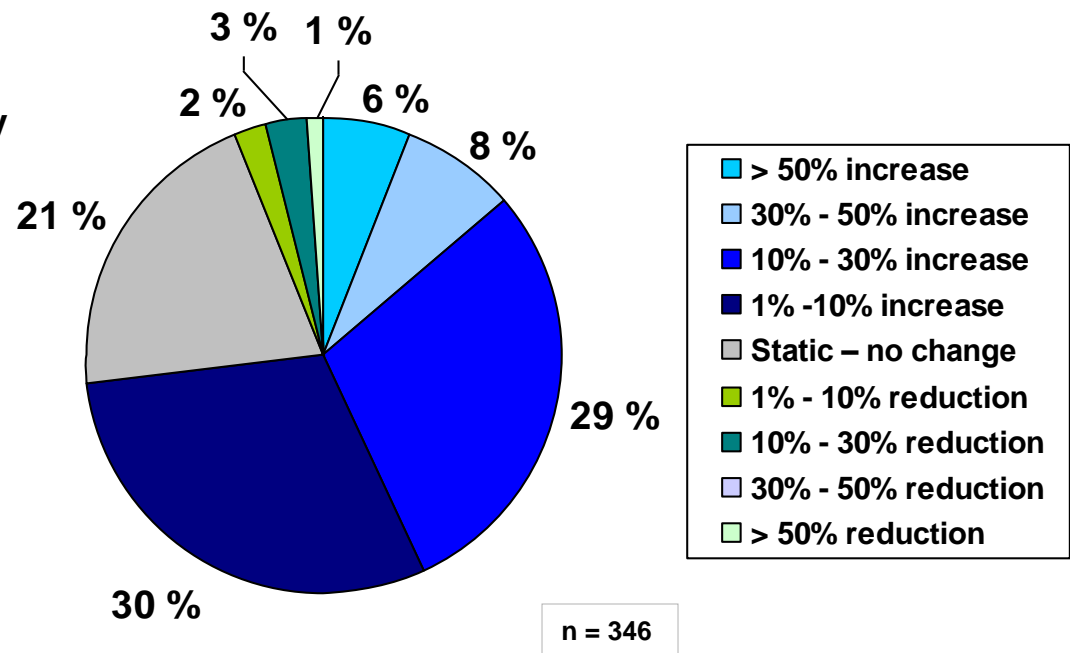


# Key finding 6: Regulation is on the way

## New regulations will intensify pressure on companies to improve energy efficiency

- Industrial energy-efficiency regulation will be linked to **wider sustainability commitments**
- **73%** of executives expect to **increase expenditure** on energy efficiency in the coming three years

How do you expect your company's investment in industrial energy efficiency to develop over the next three years?



# Key finding 7: Existing technologies will spur improvements

## ... as will process innovations

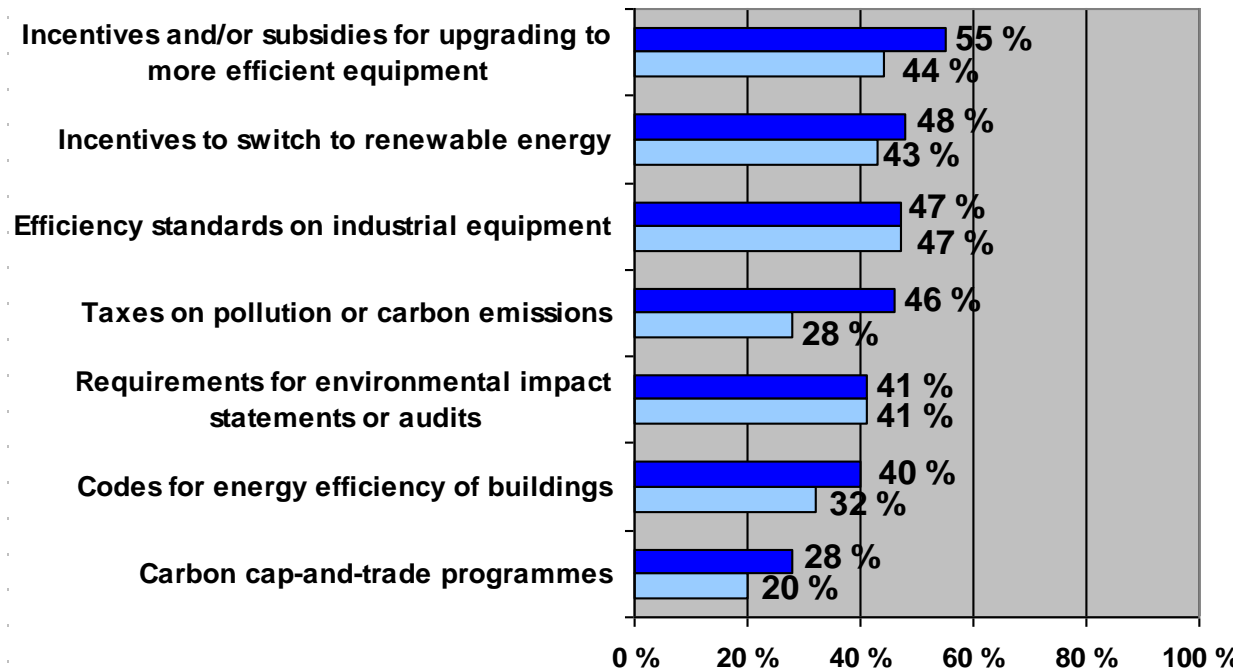
- Improving existing technologies: e.g. variable speed-drives and more efficient motors.
- Innovating in production processes: e.g. plants based on HPPO technology.
- **Government incentives** for investment in energy efficiency are less widespread in **developing countries (44%)** than in **developed markets (55%)**

In your country, what types of laws and regulations does the government use to promote industrial energy efficiency?  
Select all that apply.

■ Developed  
■ Developing

$n_{(\text{developed})} = 218$

$n_{(\text{developing})} = 130$



# Conclusions

- Investments in improving industrial energy efficiency are critical for both **short-term profitability** and **long-term financial performance**.
  - Sub-optimal practices are widespread—despite the critical role of energy efficiency
    - This is especially important for **energy-intensive industries**, with high exposure to cost fluctuations
  - Lack of information contributes to inertia
  - Companies blame lack of cash—but can overcome this obstacle
    - Companies can opt for **simple, low-cost projects**, with short payback periods.
  - Regulatory pressure will intensify—meaning companies should act soon
    - To secure long-term financial performance, companies must strive for continuous energy-efficiency improvement. **Those that do not will face significant pressure** from regulators and shareholders.



**“Energy efficiency is a gift that keeps on giving”**  
Doug May, VP Energy and Climate Change, The Dow Chemical Company

# Thank you.

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