

Information



Johnson Controls 2010 Energy Efficiency Indicator Global Survey Results Executive Summary June 3, 2010

About the 2010 Energy Efficiency Indicator

Johnson Controls partnered with the International Facility Management Association (IFMA) to commission a survey of more than 2,800 decision-makers across the world who are responsible for managing commercial buildings and their energy use.

The Energy Efficiency Indicator (EEI) survey includes CEOs, CFOs, real estate leaders, and facility managers from organizations ranging from small businesses to global corporations across a variety of industry sectors. The highest number of respondents this year came from the manufacturing, healthcare, information and communication technology, construction, consulting, retail, and government sectors. Additional information regarding the respondent profile includes:

- The survey was completed by a total of 2,882 respondents.
- In particular, the survey targeted real estate and facilities leaders in Canada, China, France, Germany, India, Italy, Poland, Spain, United Kingdom, and the United States.
- The respondents included c-level executives (30%), vice presidents and general managers (36%), and facility managers (22%).
- Respondents manage facilities and energy use in a variety of industry sectors, including but not limited to manufacturing (12%), healthcare (12%), information and communication technology (9%), construction (7%), consulting/legal services (6%), government (4%), and retail trade (4%).

The annual survey examines the attitudes, priorities, practices, and investment plans related to energy management among these decision-makers. Comparing results to those from prior years provides an outlook on energy management trends and insight into how events from the past year have impacted energy efficiency activities.

A summary of the 2010 results is detailed in this report. **Note:** The overall findings highlighted below have consistent response rates from C-level executives to facility managers. *Most* responses are also consistent among large and small real estate portfolios.

Summary of the Global EEI Findings

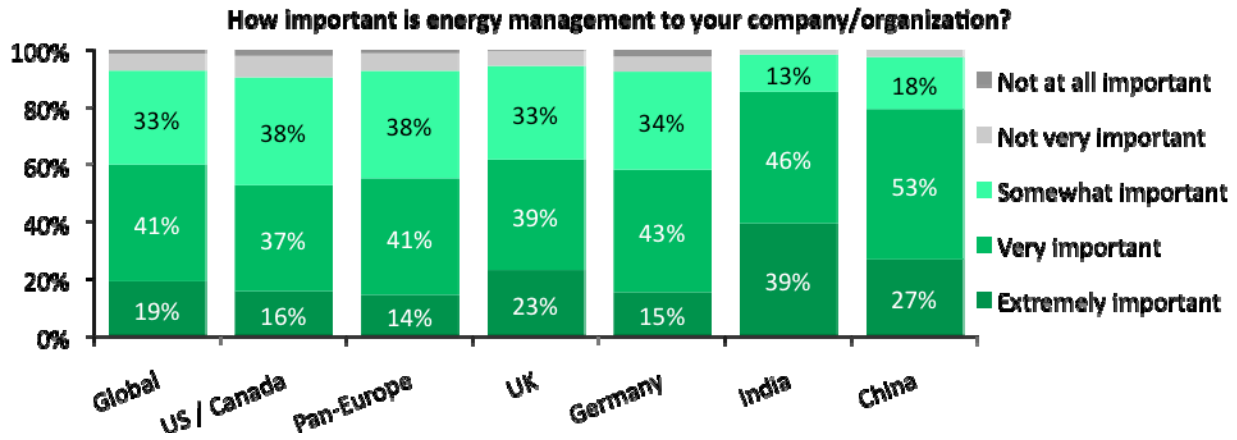
All statements are supported by 2010 EEI data.

Energy efficiency is a strong and rising business priority

Decision-makers say that energy efficiency is rising in importance. Seventy-one percent of respondents say they are paying more attention to energy efficiency now than they were one year ago. Eighty-five percent indicate that energy efficiency is a priority in planned new construction and retrofit projects.

As depicted in Figure 1, energy management is considered at least somewhat important to over 90 percent of those surveyed across all global regions. Overall, 60 percent say that energy management is extremely or very important to their organizations. Respondents from India and China are more likely to consider energy management very or extremely important compared with those in Europe and North America.

Figure 1. Importance of Energy Management, by Global Region

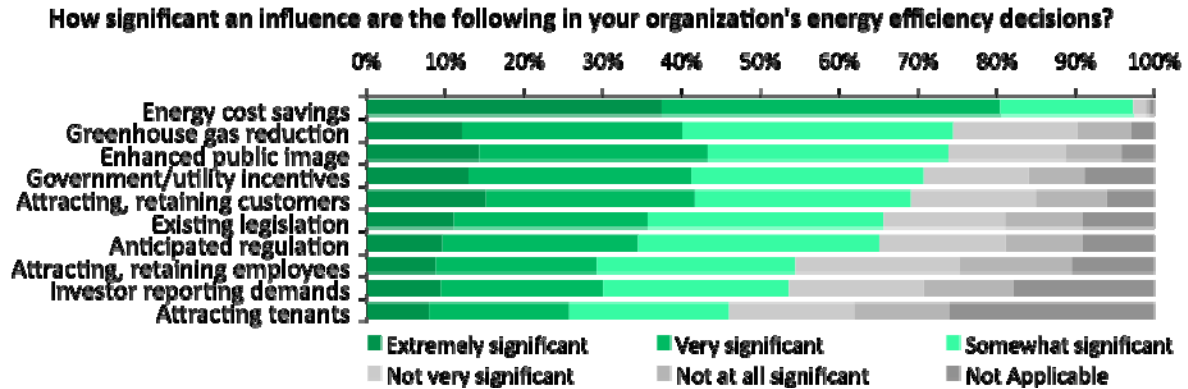


While motivations differ from region to region, cost savings is consistently the most important driver for energy efficiency investment

Several factors are driving the increasing levels of attention that organizations are paying to energy efficiency. The factors considered at least somewhat significant in priority order include:

1. Energy cost savings (97%)
2. Greenhouse gas reduction (74%)
3. Enhanced public image (74%)
4. Government/utility incentives (71%)
5. Attracting, retaining customers (69%)
6. Existing legislation (66%)
7. Anticipated regulation (65%)
8. Attracting, retaining employees (54%)
9. Investor reporting demands (54%)
10. Attracting tenants (46%)

Figure 2. Motivating factors for energy efficiency



Not surprisingly, cost savings is clearly the most important factor influencing energy efficiency decisions. More than 80 percent of respondents cite cost savings as very or extremely significant, about twice as many as the next most influential factor.

After cost savings, lowering greenhouse gas emissions is the second most important motivator for energy efficiency in all regions except North America, where boosting public image and taking advantage of government and utility incentives fall higher in importance.

Existing legislation is of particularly high importance in Europe, whereas in all other regions anticipated regulation is considered more influential than legislation already in effect. This contrast is indicative of Europe's leadership in energy and climate legislation compared to other parts of the world where legislation remains uncertain and under development.

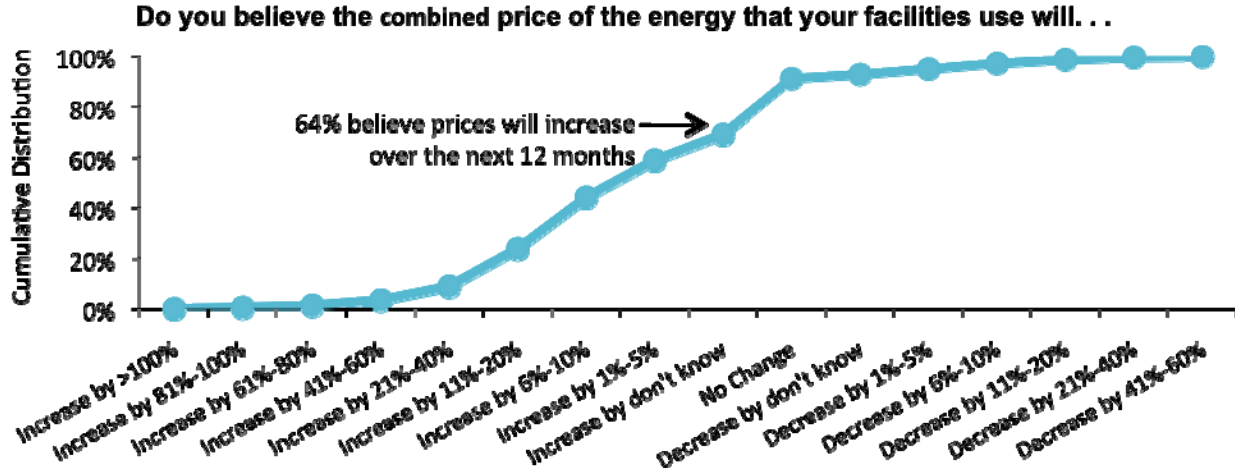
Global	US / Canada	Europe	China	India
1. Energy cost savings	1. Energy cost savings	1. Energy cost savings	1. Energy cost savings	1. Energy cost savings
2. Greenhouse gas reduction	2. Enhanced public image	2. Greenhouse gas reduction	2. Greenhouse gas reduction	2. Greenhouse gas reduction
3. Enhanced public image	3. Government/utility incentives	3. Existing legislation	3. Enhanced public image	3. Enhanced public image
4. Government/utility incentives	4. Greenhouse gas reduction	4. Enhanced public image	4. Attracting, retaining customers	4. Attracting, retaining customers
5. Attracting, retaining customers	5. Attracting, retaining customers	5. Attracting, retaining customers	5. Investor reporting demands	5. Existing legislation
6. Existing legislation	6. Anticipated regulation	6. Government/utility incentives	6. Government/utility incentives	6. Investor reporting demands
7. Anticipated regulation	7. Existing legislation	7. Anticipated regulation	7. Anticipated regulation	7. Government/utility incentives
8. Attracting, retaining employees	8. Attracting, retaining employees	8. Investor reporting demands	8. Existing legislation	8. Anticipated regulation
9. Investor reporting demands	9. Investor reporting demands	9. Attracting, retaining employees	9. Attracting, retaining employees	9. Attracting, retaining employees
10. Attracting tenants	10. Attracting tenants	10. Attracting tenants	10. Attracting tenants	10. Attracting tenants

Executives believe energy prices will climb in 2010

It's not surprising that energy cost is considered the most important driver. After energy prices fell with demand in many regions during 2009, 69 percent of global respondents expect energy prices to climb again during 2010. An additional 22 percent do not expect prices to change significantly, leaving only 9 percent who believe prices will decrease this year. The average

expectation among all respondents is a nine percent increase in the combined price of energy over the next twelve months.

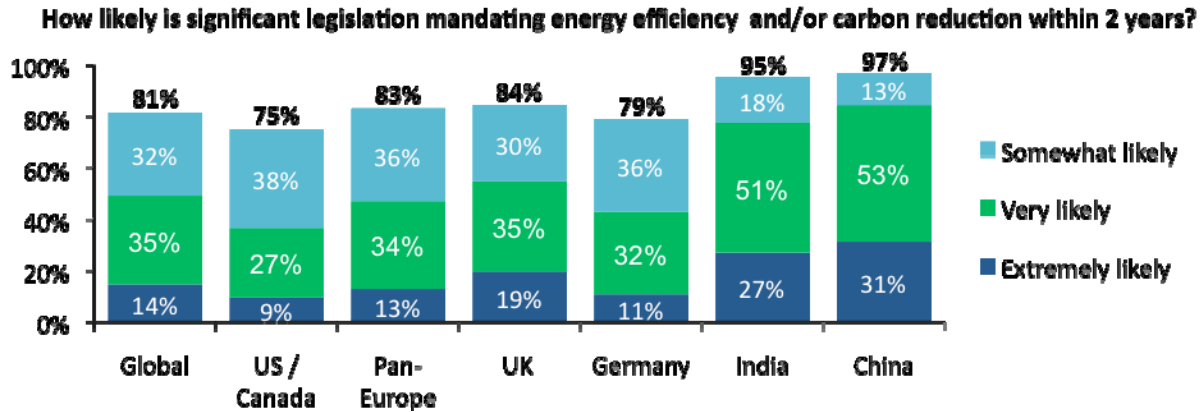
Figure 3. Expectations for Changes in Energy Prices



Climate legislation is expected and is viewed as both a risk and an opportunity

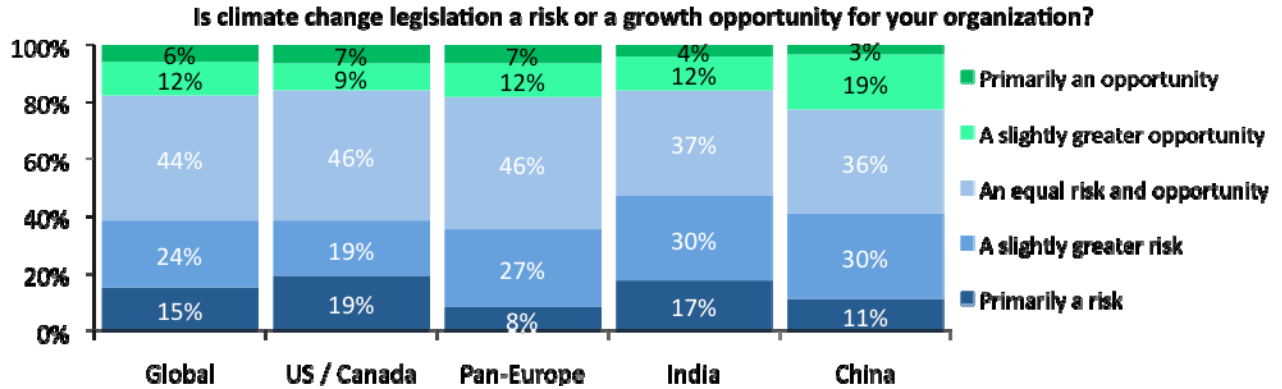
A significant majority of decision-makers (81 percent) believe legislation mandating energy efficiency and/or carbon reduction is likely within the next two years. Nearly half of respondents believe such legislation is very or extremely likely. Respondents in China and India are more likely to expect such legislation compared to those in Europe, and those in Europe are most likely to expect such legislation compared to those surveyed in North America.

Figure 4. Expectations for Climate/Energy Legislation, by Region



While decision-makers certainly expect energy and climate legislation, do they welcome it? Respondents view the impact of anticipated legislation in different ways. Forty-four percent view climate change legislation equally as both a risk and a business growth opportunity. Thirty-eight percent view climate legislation as more of a risk, while 18 percent view it as more of an opportunity. This split is fairly consistent across regions, with those in China and Europe more likely to consider climate legislation as a business growth opportunity.

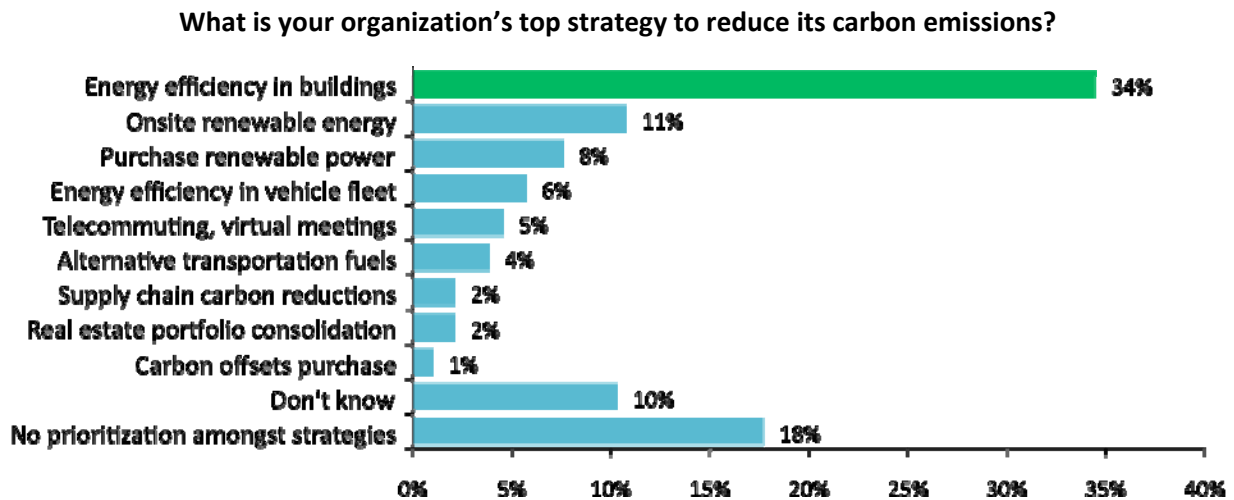
Figure 5. Views on the impact of climate legislation



Building efficiency is the top priority for those seeking to decrease their carbon footprint Further reinforcing the fact that climate is rising on leadership agendas, the survey indicates that nearly **one-third** of organizations surveyed have made public commitments to reduce their greenhouse gas emissions.

About 28 percent of those surveyed don't know their top carbon strategy or have not yet prioritized strategies. Among those who have prioritized, a large majority point to improving energy efficiency in their buildings as their top climate solution. Thirty-four percent of those surveyed across the world say improving energy efficiency in buildings is their most important strategy for shrinking their organization's carbon footprint. Other top strategies include installing onsite renewable energy (11%), purchasing renewable power (8%), and improving fleet efficiency (6%).

Figure 6. Top Carbon Management Strategies



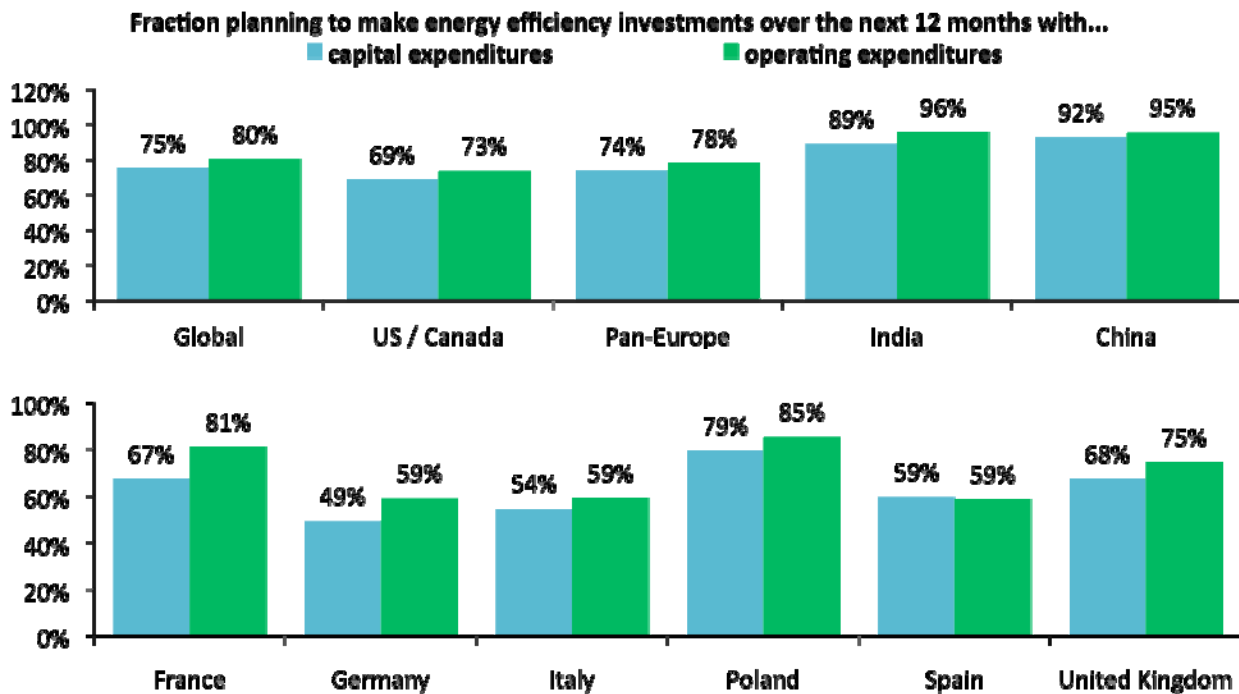
The economic recession has had a surprisingly mixed impact on efficiency investment

Business leaders have varied in their response to economic conditions. Somewhat surprisingly, as a result of the recession, 56 percent of respondents say they have invested the same or more in energy efficiency over the last 12 months compared to historical levels. Efficiency investments are a fast and low-risk way to cut operating costs.

Planned capital and operating investment in energy efficiency for 2010 is strong. Overall, 63 percent of respondents plan to make capital investments and 70 percent plan to make operating expenditures in energy efficiency improvements over the next twelve months.

As shown in Figure 7, which compares investment among leaders responsible for managing 100,000 square feet or more, the fraction planning to make efficiency investments is highest in China, followed by India, Europe and then North America.

Figure 7. Planned energy efficiency investment, by region (of those responsible for > 100,000 sq. feet)

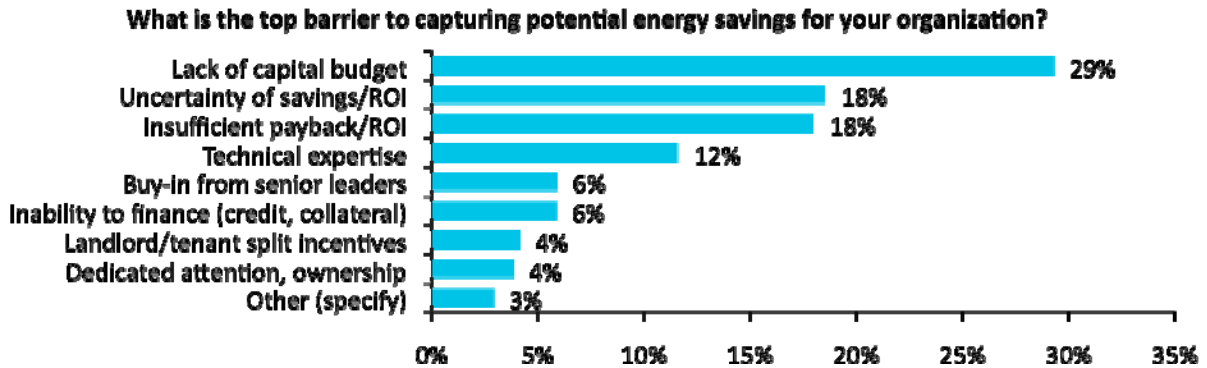


Note: Among respondents responsible for 100,000 square feet / 10,000 sq meter or more (N = 1571)

Access to capital constrains many organizations from making efficiency investments

While enthusiasm for and attention to energy efficiency remains high, building executives say limited capital availability (29%) is the greatest barrier to capturing the potential energy savings, followed by issues with insufficient payback (18%) and savings uncertainty (18%).

Figure 8. Global barriers to energy efficiency



With respect to the second and third greatest barriers, what type of financial return is sufficient for building owners? Forty-eight percent of respondents require a simple payback in less than three years when making significant energy efficiency investments. A three-year simple payback is equivalent to a 33 percent internal rate of return (IRR) for an energy efficiency improvement measure with a fifteen-year lifetime. A much smaller fraction (5 percent) requires a payback within one year or less, while about 90 percent require a ten-year payback or less.

Lighting retrofits were the most popular energy efficiency measure over last 12 months

Energy efficiency measures with low first cost and/or rapid paybacks were most likely to have been implemented by respondents over the last twelve months. Lighting retrofits were the most popular improvement. Seventy-three percent of those surveyed switched to energy efficient lighting and 44 percent have installed occupancy or daylight sensors. Other measures selected most commonly among the 33 options included in the survey include:

- Facilities staff education (64%)
- Building occupant education (62%)
- Set point adjustments (49%)
- Replacing inefficient equipment before the end of its useful life (37%)
- Upgrading building controls (37%)
- Negotiating contracts with energy suppliers (35%)
- Adjusting lighting time clocks (33%)
- Installing energy saving glass in windows (32%)
- Sending staff to energy management seminars (30%)
- Increasing building insulation (30%)
- Increasing preventative maintenance (29%), and
- Installing variable speed drives (25%)

Renewable technologies are increasingly considered

A large fraction of global respondents are considering renewable energy technologies as part of their new construction or building retrofit projects, but considerations rates vary by technology. Decision-makers are considering incorporating the following technologies into their projects.

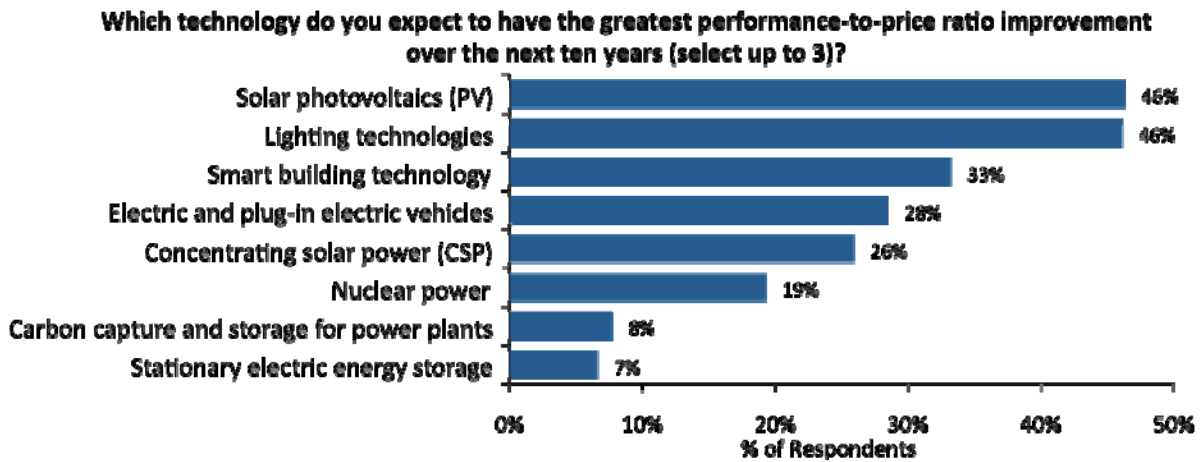
- Solar electric (50%)
- Solar thermal (42%)
- Wind (26%)
- Geothermal (21%)

- Biomass (16%)

Greatest technological improvement predicted for solar, lighting, and smart buildings

Looking ahead, global business leaders have varied expectations of technological improvement for clean energy technologies. When asked to select three technologies expected to see the greatest improvement in performance-to-price ratio over the next ten years, solar photovoltaic (46%) and lighting (46%) technologies were selected by the greatest number of respondents. Next came smart building technologies such as integrated control and demand response (33%), electric and plug-in hybrid vehicles (28%), nuclear power (19%), carbon capture and sequestration for coal plants (8%), and stationary energy storage (7%).

Figure 9. Technology Performance/Price Improvement Expectations



Summary of the 2010 Global EEI Results

Planned energy efficiency investments are expected to be strong in 2010, motivated primarily by concerns around cost reduction, climate change, enhancing public image, and taking advantage of government and utility incentives. Leaders expect energy prices to climb by 9 percent during 2010 and say improving energy efficiency in buildings is their most important carbon management strategy. While enthusiasm for and attention to energy efficiency remains high, leaders say capital availability is the greatest barrier to capturing the potential energy savings.

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