

# Information



## Johnson Controls 2010 Energy Efficiency Indicator North America Survey Results Executive Summary April 8, 2010

### About the 2010 Energy Efficiency Indicator

For the fourth consecutive year, Johnson Controls partnered with the International Facility Management Association (IFMA) to commission a survey of more than 1,400 decision-makers across North America responsible for managing commercial buildings and their energy use. The American Society for Healthcare Engineering (ASHE) also partnered on the survey this year.

Conducted in March of 2010, the Energy Efficiency Indicator (EEI) surveyed 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 healthcare, manufacturing, finance, consulting, retail, and government sectors. Additional information regarding the respondent profile includes:

- The survey was completed by a total of 1,435 respondents.
- The respondents included c-level executives (28%), vice presidents and general managers (30%), and facility managers (25%).
- Respondents manage facilities and energy use in a variety of industry sectors, including but not limited to healthcare (20%), consulting/legal services (9%), manufacturing (7%), financial services (7%), government (6%), and retail trade (5%).
- 90% were from the private sector and 10% were from the public sector.
- 60% of organizations responding spend more than \$100,000 US dollars per year for energy to power their facilities (e.g. electricity, natural gas, and fuel oil).

The Energy Efficiency Indicator 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.

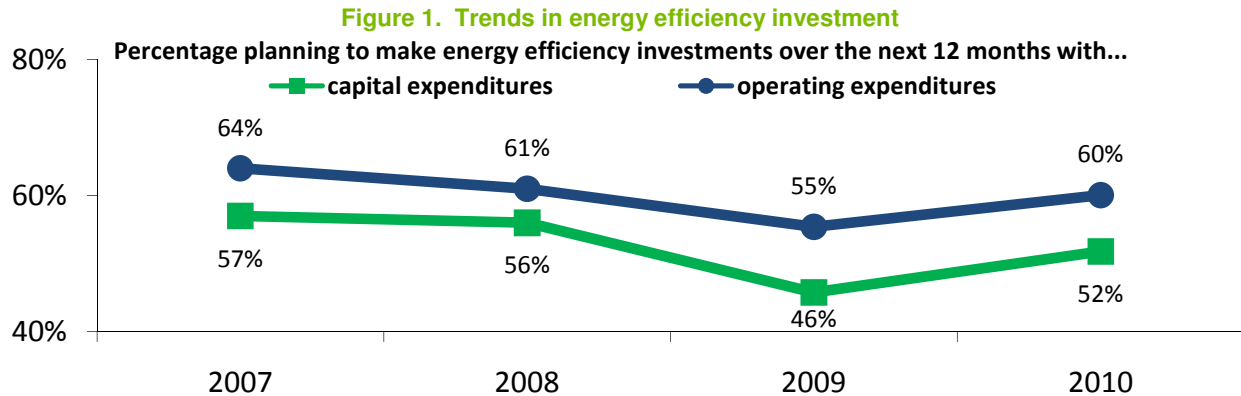
A summary of the 2010 results is detailed in this report. **Note:** The overall findings highlighted below have consistent response rates from C-level executives to facility managers. *Most* responses are also consistent among large and small real estate portfolios.

## Summary of the North American Key Findings

All statements are supported by 2010 EEI data.

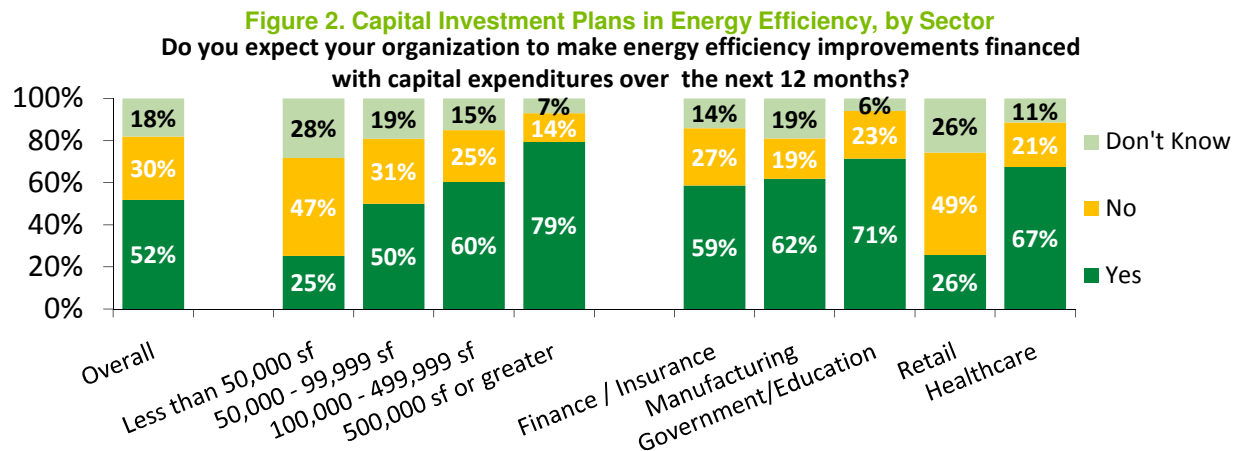
### Planned capital and operating spending on energy efficiency on upswing

Planned energy efficiency investments across North America have rebounded since 2009, motivated primarily by cost reduction, public image, government and utility incentives, and climate change concerns.



Fifty-two percent of respondents (up from 46% in 2009) plan to make capital expenditures and 60 percent (up from 55%) plan to make operating budget investments in energy efficiency improvements over the next twelve months. The survey also found planned new construction starts and retrofits starts are both up by 35 percent from 2009 among respondents.

The survey did identify differences in the likelihood of investment depending on organizational size and industry sector. Small businesses and organizations are much less likely to invest in energy efficiency compared with large businesses. And the government and education organizations are more likely to invest than several other industry sectors. The retail sector in particular lags others in terms of planned energy efficiency investment.



### Energy efficiency remains a strong business priority

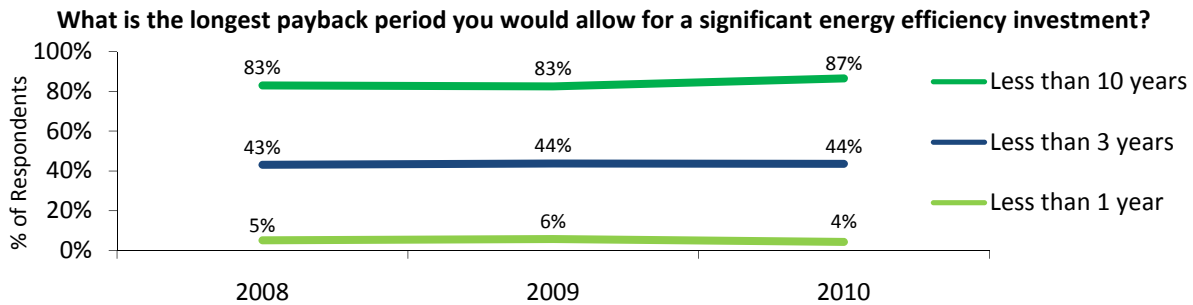
The survey found that North American decision-makers continue to be interested in energy efficiency. In fact, 65 percent are paying more attention to energy efficiency than they were one year ago. Eighty-four percent indicate that energy efficiency is a priority in planned new construction and retrofit projects.

**Access to capital constrains many organizations from making efficiency investments**

While enthusiasm for and attention to energy efficiency remains high, business leaders say limited capital availability (38%) is the greatest barrier to capturing the potential energy savings, followed by issues with insufficient payback (21%) and savings uncertainty (16%).

When considering energy efficiency investments, 44 percent of respondents require a simple payback less than three years (equivalent to a 33 percent internal rate of return for an improvement measure with a fifteen year lifetime). The distribution in required return on investment among respondents has remained consistent over the last three years with about 5 percent requiring a one year payback or less, nearly half requiring a three year payback or less, and about 90 percent requiring a ten year payback or less on their investment.

**Figure 3. Trends in Expected Return on Investment (ROI)**

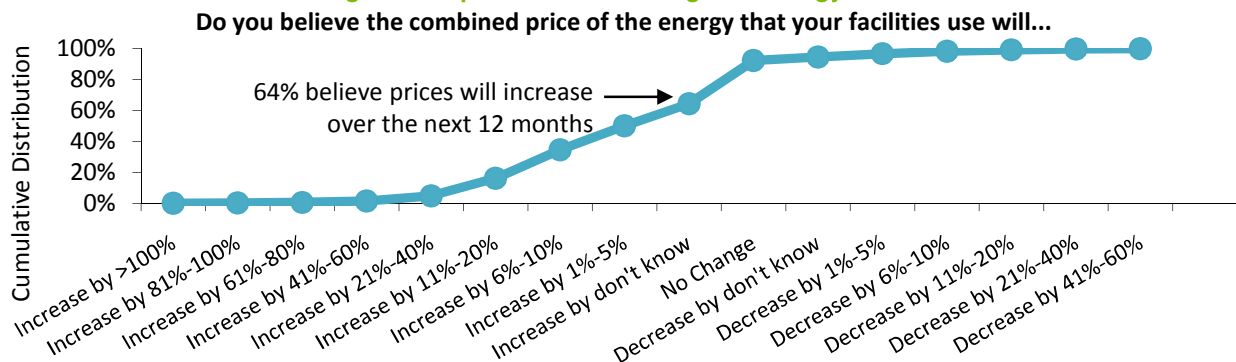


Other factors are also influencing decisions regarding energy efficiency. The most significant factors in priority order are:

1. Energy cost savings (97%)
2. Enhanced brand/public image (63%)
3. Government/utility incentives (62%)
4. Greenhouse gas emissions reduction (62%)
5. Customer attraction (56%)
6. Pending/anticipated regulation (52%)
7. Existing legislation (51%)
8. Attracting/retaining talented employees (38%)
9. Investor reporting (34%)
10. Attracting tenants (25%; 57% not applicable)

**Executives believe energy prices will climb again in 2010**

**Figure 4. Expectations for Changes in Energy Prices**



After energy prices fell with demand in 2009, most survey respondents expect energy prices to climb again during 2010. Sixty-four percent believe that natural gas and electricity prices will rise. Twenty-eight percent do not expect prices to change significantly. Overall the average expectation among respondents is a 7% increase in the combined price of energy over the next twelve months.

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

North American business leaders have varied in their response to economic conditions. Over the last 12 months, 41 percent have invested less, 27 percent have invested at historic levels, and 32 percent have invested more in energy efficiency as a result of the recession.

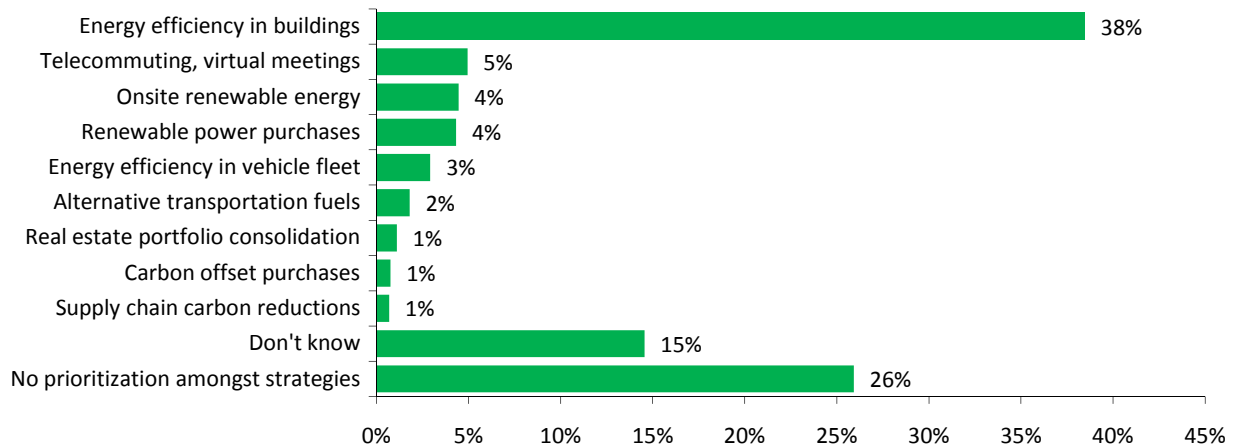
**Building efficiency is the top priority for those seeking to decrease their carbon footprint.**

The survey indicates an increase in the number of organizations in North America making public commitments to reduce their greenhouse gas emissions. Fourteen percent have set and publicized carbon emission reduction targets, up from 12 percent of respondents last year.

About 40 percent of those surveyed don't know or have not yet prioritized among strategies for reducing their organization's greenhouse gas emissions. Among those who have prioritized, a large majority point to improving energy efficiency in their buildings as their top climate solution. Other top strategies include virtual workplace/telecommuting (5%), installing onsite renewable energy (4%), and purchasing renewable energy (4%). Notably, organizations are not relying on the purchase of carbon offsets as a primary strategy to meet carbon neutrality goals. In fact, only three percent said purchasing carbon offsets was one of their top five strategies.

**Figure 5. Top Carbon Management Strategies**

**What is your organization's top strategy to reduce its carbon emissions?**



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

A majority of decision-makers (75%) continue to believe significant legislation mandating energy efficiency and/or carbon reduction is likely within the next two years, compared to 85 percent in 2009 and 76 percent in 2008. Thirty-six percent of respondents believe such legislation is very or extremely likely within by 2012.

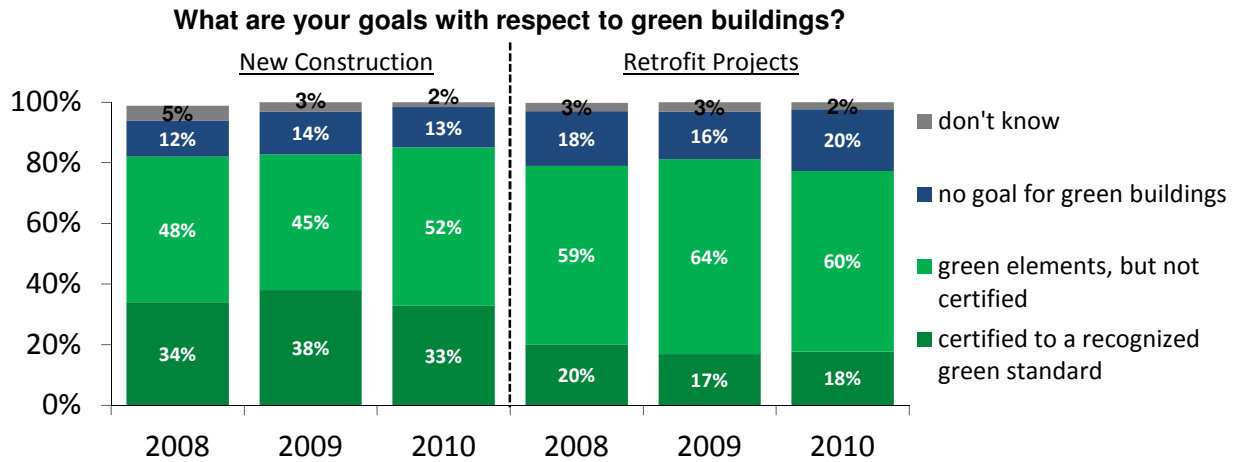
However, the impact of such legislation is viewed in different ways among respondents. Forty-six percent view climate change legislation equally as a risk and as a business growth opportunity for their organization, while 40 percent view such legislation as more of a risk and 16 percent view it as more of an opportunity.

**Interest in green building certification remains strong, particularly for new buildings**

North American business leaders are interested in green building certification programs. In fact, 12 percent already have at least one certified green building (up from 8% in 2009), 33 percent are targeting green building certification for new construction projects, and 85 percent seek to at least incorporate green elements.

For decision-makers undergoing retrofits, 18 percent are seeking to certify building retrofit projects to a recognized green standard, an increase from 17 percent in 2009.

**Figure 6. Trends in Green Building Goals**



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

Consistent with results from the past three years, lighting retrofits remain the most popular energy efficiency improvement measure among respondents. Data indicates that 72 percent have switched to energy efficient lighting and 40 percent have installed occupancy or daylight sensors. Other popular measures amongst the 33 included in this survey this year include:

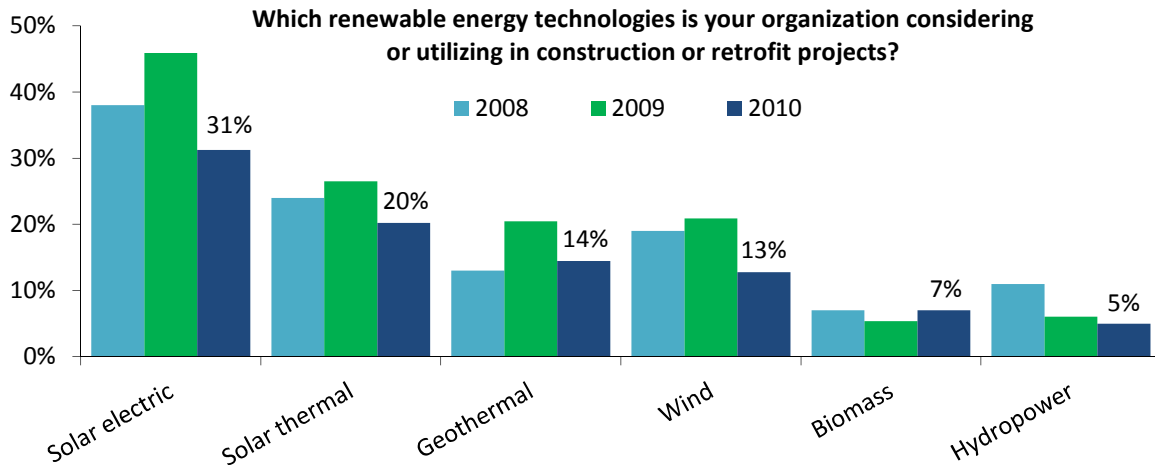
- Facilities staff education (63%)
- Building occupant education (61%)
- Set point adjustments (56%)
- Replacing inefficient equipment before the end of its useful life (36%)
- Upgrading building controls (33%),
- Negotiating contracts with energy suppliers,
- Increasing preventive maintenance (25%),
- Installing variable speed drives (25%),
- Participating in demand response programs (19%)
- Installing energy saving glass in windows (19%), and
- Increasing building insulation (19%).

**Fewer respondents are considering renewable technologies in construction projects**

While solar photovoltaic (PV) and solar thermal are the onsite renewable energy technologies considered most often in new construction or retrofit building projects, the survey indicates a drop consideration rates was seen across all renewable technologies. Details are as follows:

- Solar electric (31%, down from 46% in 2009)
- Solar thermal (20%, down from 27% in 2009)
- Wind (13%, down from 21% in 2009)
- Geothermal (14%, down from 20%).

**Figure 7. Trends in renewable energy technology consideration levels**

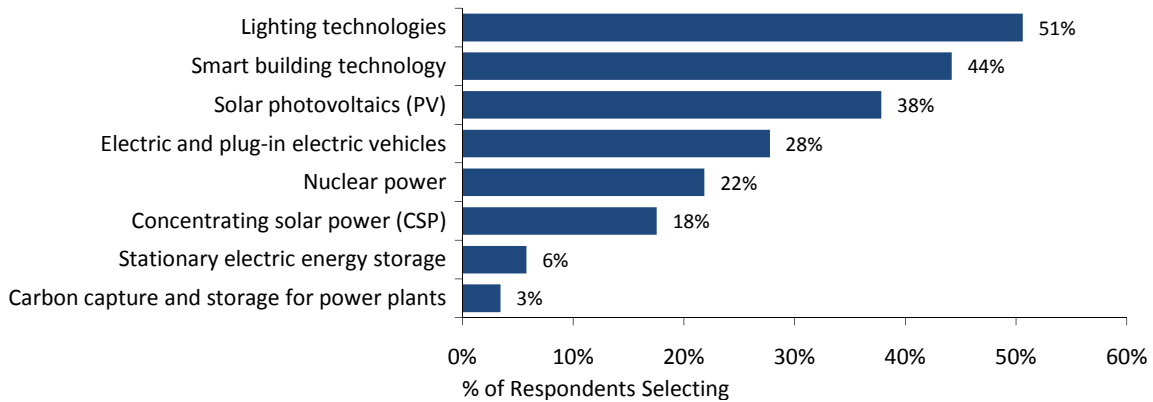


**Greatest technological improvement predicted for lighting and smart buildings**

Looking ahead, North American business leaders have varying expectations of 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, lighting (51%) and smart building (44%) technologies were selected by the greatest number of respondents over. Next came solar photovoltaic systems (38%), electric and plug-in hybrid vehicles (28%), nuclear power (22%), stationary energy storage (6%), and carbon capture and sequestration technology for power plants (3%).

**Figure 8. Technology Performance/Price Improvement Expectations**

Which technology do you expect to have the greatest performance-to-price ratio improvement over the next ten years (select up to 3)?



**Summary of the 2010 North America EEI Results**

Planned energy efficiency investments across North America are expected to rebound in 2010, motivated primarily by concerns around cost reduction, public image, government/utility incentives, and climate change. Leaders expect energy prices to climb 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, business leaders say capital availability is the greatest barrier to capturing the potential energy savings.

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