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Deloitte Resources 2015 Study

Energy management passes the point of no return

Deloitte Center
for Energy Solutions

Contents

About the Study

Deloitte, with strategy and market research firm Harrison Group, a YouGov Company, has completed its fifth annual nationwide Resources Study (the "2015 Study" or "Study") to provide insights that can be useful in helping energy companies and businesses make energy-related investment and business decisions. The study aims to answer questions including:

- What actions are US businesses and consumers taking and expecting to take to manage their energy usage?
- What do they know about the energy marketplace?
- What motivates them to adopt new practices and invest in new technologies?
- How mature are their approaches to managing energy efficiency?

The 2015 Study was conducted in March 2015, and thus, largely reflects attitudes and practices related to the year 2014. The Study captures two views, a business perspective and a consumer perspective. The business portion of the Study is based on more than 600 online interviews with business decision-makers responsible for energy management practices at companies with more than 250 employees across all industries. To facilitate in-depth analysis, business survey respondents are segmented by industry and company size. Please see Figure 1 and Figure 2 for definitions of these segments. The consumer portion is based on more than 1,500 demographically balanced online interviews with household decision-makers for utility services.

Figure 1: Sectors

	Consumer and industrial products: Includes companies within aerospace and defense; automotive; consumer products; manufacturing; retail and distribution; and travel, hospitality, leisure, and services
	Financial services: Includes businesses within banking and securities, insurance, investment management, and real estate
	Health care: Includes health care providers, health plans, and life sciences organizations
	Technology, media and telecommunications: Includes technology, media and entertainment, and telecommunications companies

Figure 2: Company size

Small:
Less than $100 million in global revenue

Mid-cap:
$100–$500 million in global revenue

Enterprise:
More than $500 million in global revenue

Executive summary

In 2011, Deloitte embarked on an annual study to gauge how businesses and consumers are managing their energy consumption, particularly their electricity usage. Based on the results of the 2014 Study, we found that energy management was becoming a core business competency. The findings of the 2015 Study not only corroborate that result but further suggest a tipping point has been passed: thoughtful, deliberate energy consumption has permeated the business psyche, and companies, by and large, now consider energy management to be an essential aspect of corporate strategy.

Key results from the 2015 Study include:

- Seventy-nine percent of businesses view reducing electricity costs as essential to creating and maintaining competitive advantage, with 57 percent reporting that they now have formal energy reduction goals, up from 46 percent in 2014.
- Companies generally are feeling good about their accomplishments to date, with more than half (52 percent) characterizing their energy management efforts as extremely/very successful, compared to 42 percent in 2014.
- Businesses are allocating a greater percentage of their capital budgets to energy management. Ninety-three percent say they have invested funds in energy management programs over the last three years. They further indicated these funds represent about 17 percent of their total capital budgets. This compares to 12 percent in 2014, and it is the largest proportion since the Study's inception.

As in 2014, the questions posed to businesses in the 2015 Study were organized around eight key capability maturity categories (see Figure 5). While enterprises progressed the farthest, companies of all sizes showed greater levels of maturity in nearly every category explored by the Study. Furthermore, the findings suggest certain industries are now approaching critical mass, whereby the foundation, in terms of processes and technologies, has been laid for innovation and expansion. For instance:

- In the category of Goal Setting, businesses increased their energy/resource reduction targets in all areas except carbon footprint. For example, companies are aiming to reduce their electricity consumption by 25 percent on average, up from 22 percent in 2014. Businesses are also giving themselves more time to achieve their reduction goals: 4.5 years on average, compared to 4.2 years in 2014.
- Companies are also moving towards self-reliance when it comes to energy supply. A solid majority (55 percent) of businesses say they generate some portion of their electricity supply on-site, up from 44 percent in 2014. By industry, technology, media, and telecommunications (TMT) companies (67 percent) and healthcare organizations (65 percent) are leading the trend toward greater self-reliance, perhaps due to the critical nature of their operations, requiring a high degree of reliability.
- Businesses showed some progress in the category of Reporting, Systems, and Tools. Twenty-eight percent of business respondents indicate that high-quality energy data and data management exist across the company, compared to 22 percent in 2014. Similarly, 27 percent report that advanced analytical tools are deployed across the company, up from 20 percent in 2014. Nonetheless, there is ample room for improvement. Sixty-three percent say they still use spreadsheets for at least some of their tracking needs.

While businesses matured in their views and practices concerning energy management, consumers generally held steady in their attitudes and behaviors in the 2015 Study. However, one of the more notable observations indicated consumers have little desire to revert back to their previous electricity consumption patterns, even as the economy has improved. For instance, 80 percent of consumers say their families took steps to reduce their electric bills over the past year, holding steady from 83 percent in 2014, and 81 percent in 2013. In addition, 65 percent plan to use about the same amount of electricity in 2015 as they did last year, and 25 percent believe they will use less. While consumers did not make great strides in advancing their energy management practices like businesses did, both groups appear to have "passed the point of no return," whereby the concept of energy management has become ingrained and the commitment to reducing consumption has become entrenched.

Introduction: Business views on energy management

The findings of the Resources 2015 Study reinforce the notion that energy management is becoming a core business discipline. Although enterprises led the pack, companies of all sizes showed greater levels of maturity in nearly every category of energy management capability explored by the Study—and they displayed growing confidence and self-reliance.

While the findings of the previous Resources Studies hinted that a critical perceptual shift was underway, the 2015 results suggest it has happened: the prevailing view of energy management has evolved from a cost-cutting necessity to a strategic commitment.

Consider the following:

- Seventy-seven percent of respondents consider reducing electricity costs as essential to staying competitive from a financial perspective, compared to 81 percent in 2014.
- Seventy-nine percent of businesses in this year's Study view reducing electricity costs as essential to staying competitive from an image perspective, up from 74 percent in 2014. This is also the highest proportion since the Resources Study was first conducted in 2011.

These findings imply the impetus for energy management is expanding to emphasize competitive advantage as well as cost cutting. And, this theme was echoed elsewhere in the survey results. For instance, 59 percent of respondents in this year's Study cite the desire to cut costs as a primary driver for their resource management programs, down from 67 percent in 2014. However, other key drivers remained on par with the 2014 findings, led by internal motivations (cited by 48 percent of respondents), betterment of the corporation (45 percent), competitive advantage (35 percent), external incentives (35 percent), and regulatory requirements (31 percent). This is not to diminish cost cutting as a driver; it is just no longer overwhelmingly dominant.

Importantly, this shift is occurring despite relatively low electricity prices and moderate expectations of future increases. About one-third of respondents (32 percent) expect electricity prices to increase 3–5 percent in the next 24 months, while another third (33 percent) expect them to increase even less than that, to remain stable, or to even decline. In general, concerns about price increases in the 2015 Study are on par with those in 2014.

Even though businesses are not exceedingly worried about future electricity price increases, they have not backed off their commitment to energy management and they are beginning to take a broader view of what is at stake. More companies, for instance, are using a variety of external market intelligence to gain a more comprehensive perspective of their exposures to energy risk. This still only translates to about one in four (26 percent), compared to about one in five (21 percent) in 2014, but it does indicate continuing maturation. Again, this reinforces the hypothesis that businesses now see energy management as an integral part of their business strategy and as an essential means of gaining competitive advantage. The fact that businesses are seeing results from their energy management programs is helping to ingrain this commitment.

Figure 3: More companies using external intelligence for energy forecasts

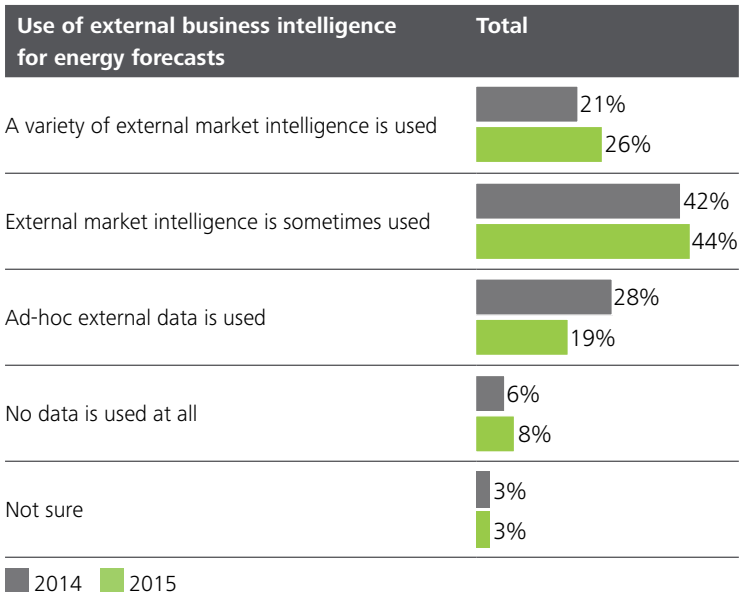
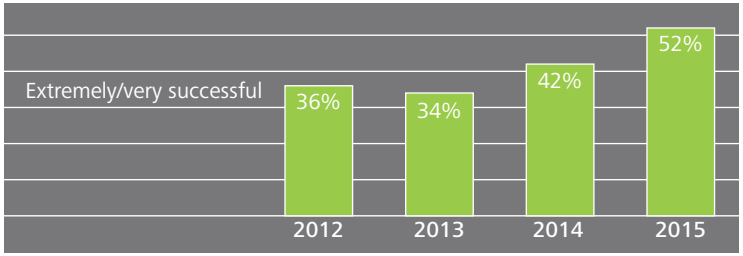


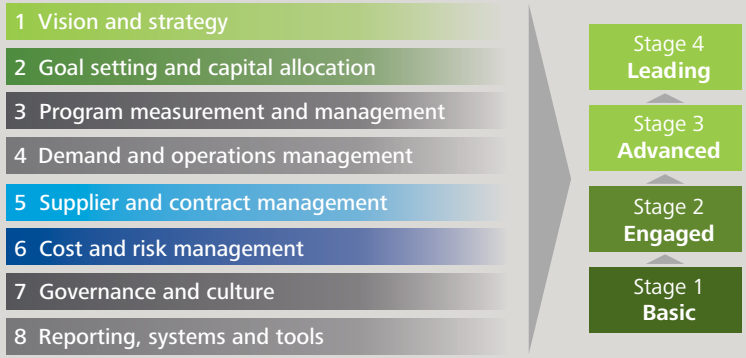
Figure 4: Majority of businesses feel successful in achieving resource management goals



Companies generally are feeling good about their accomplishments to date, with more than half (52 percent) characterizing their efforts as extremely/very successful, compared to 42 percent in 2014, and most (79 percent) believe their companies have become much more sophisticated in managing electricity costs. But, businesses generally remain realistic about their efforts, acknowledging a steeper climb lies ahead. For instance, two-thirds believe "cutting electricity costs/usage in the future is going to be much harder for their businesses," presumably because much of the "low hanging fruit" has been picked. As in 2014, businesses see the primary barriers to success as length of payback period, difficulty in measuring impact on bottom-line, and lack of dedicated staff.

So, what will companies do next with regard to energy management? The Deloitte Energy Management Capability Maturity Model (CMM) provides some clues. As in 2014, the questions posed to businesses in the 2015 Study were organized around eight key capability categories. The findings in each category this year reinforce our assertion that businesses do not intend to back off their commitment to energy management, even as their strategic focus shifts from cost cutting to growth. In addition to shedding light on what companies have accomplished and what they may do next, the CMM illuminates the many facets of a leading energy management program, and it allows businesses to better understand where they stand in relation to their peers in developing and executing their energy management strategies, as well as what is required to improve their results. The detailed business findings presented throughout the remainder of this report delve into these categories as well as discuss the potential implications for companies at differing levels of maturity.

Figure 5: Deloitte Energy Management Capability Maturity Model
Understanding positioning on a maturity curve enables an organization to better determine the path forward, including how to prioritize investments and where to focus resources. The multiple dimensions reflected in a maturity score illuminate organizational strengths and weaknesses, and provide insight into broader industry and category excellence.



Detailed business findings

Vision and strategy

Businesses see the link between energy vision and business strategy more clearly

The 2015 Study saw a significant increase in the formalization of the corporate energy vision, along with greater alignment of energy management strategy with business strategy. More than half of businesses (52 percent) in this year's Study say they have a documented corporate energy vision/mission that fully aligns with the corporate vision, up from 43 percent in 2014. In addition, 44 percent report energy management is a key element of corporate strategy, compared to 34 percent in 2014. Companies of all sizes are becoming more mature in articulating and integrating their energy-related visions and strategies, but enterprises are still the most developed.

Figure 6: More businesses are formalizing energy management vision/mission

Energy management vision or mission	Total
There is a documented corporate energy vision/ mission that fully aligns with the corporate vision	43% 52%
There is a documented corporate energy vision/ mission but it is not fully aligned with the corporate vision	26% 25%
Some business units have an energy vision and mission while others don't	18% 13%
We don't have a documented energy vision/mission	13% 10%
Not sure	0% 0%

2014
2015

Figure 7: Energy management is increasingly aligned with corporate strategy

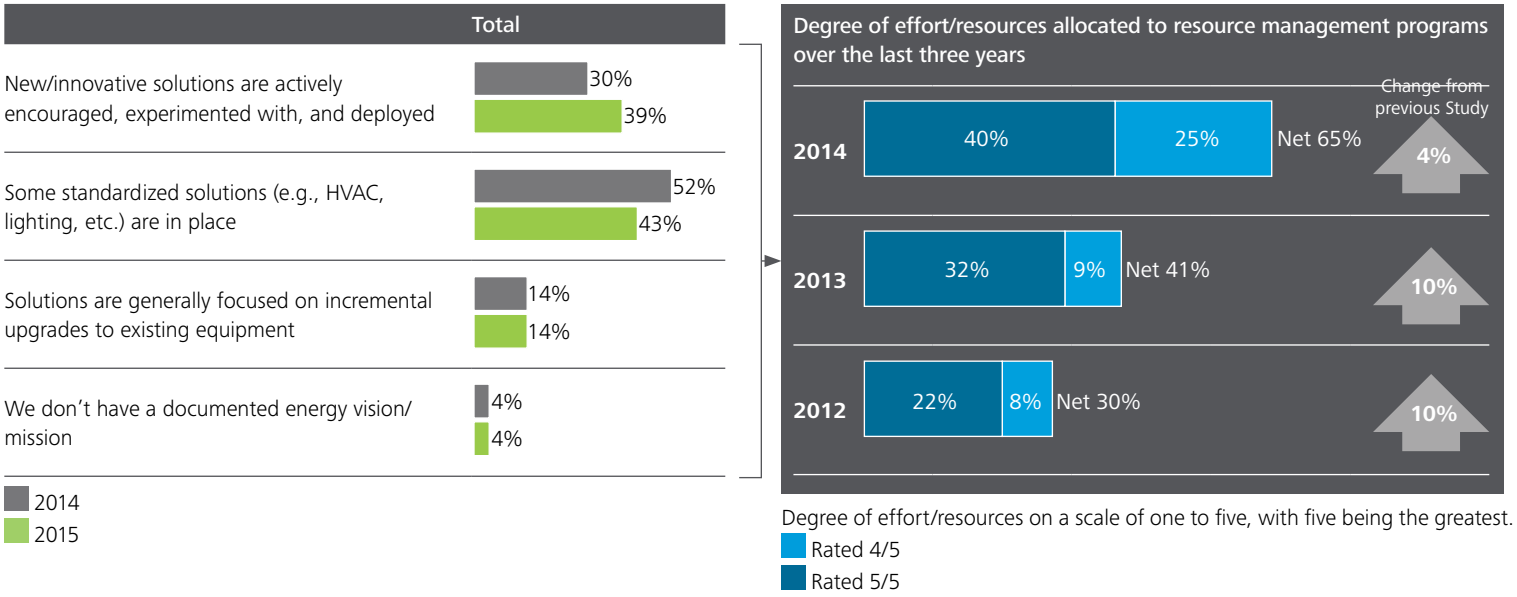
Energy management strategy	Total
Energy management is a key element of corporate strategy. Leadership and staff, at all levels, have energy objectives incorporated into goals	34% 44%
Energy management is incorporated into business unit strategy and/or site goals (but not corporate strategy)	38% 37%
Energy management strategy is in early stage development	24% 16%
There is no formal energy management strategy in place at a corporateor business unit level	4% 4%
Not sure	0% 0%

2014
2015

Companies not afraid to try something new or to roll up their sleeves as commitment to energy management gets progressively stronger

While standardized solutions remain popular, more companies in this year's survey indicate a willingness to extend beyond their previous comfort zones to experiment with emerging energy management solutions. More businesses also report expending greater effort and allocating more resources to their resource management programs than in the previous studies. For instance, 39 percent of businesses say new/innovative solutions are actively encouraged, experimented with, and deployed, up from 30 percent in 2014. Furthermore, when we asked businesses to rate the degree of effort/resources allocated to their companies' energy management programs, over the last three years, about two-thirds (65 percent) rated their efforts during 2014 as a four or five on a five-point scale, with five being the greatest. In comparison, 61 percent in last year's survey rated their efforts during 2013 as a four or a five.

Figure 8: Businesses are implementing more innovative solutions and allocating greater resources and effort to energy management



Goal setting and capital allocation

More companies formalizing their energy management objectives and cutting energy consumption year over year

Consistent with the results over the past three years, nine out of ten companies in the 2015 Study have energy management goals in place. However, the 2015 findings revealed a significant increase in those with formal goals. Fifty-seven percent of companies now say they have formal goals in place, compared to 46 percent in 2014. The energy management tactics being utilized, which are discussed later in this report, collectively appear to be working, as businesses continue to make incremental progress each year against their energy management goals. In this year's Study, they reported reducing their electricity consumption by 15 percent on average in 2014. This compares to 13 percent in 2013 and 11 percent in 2012. Similar patterns emerged in other energy/resource management areas.

Figure 9: Businesses are steadily reducing electricity consumption year over year

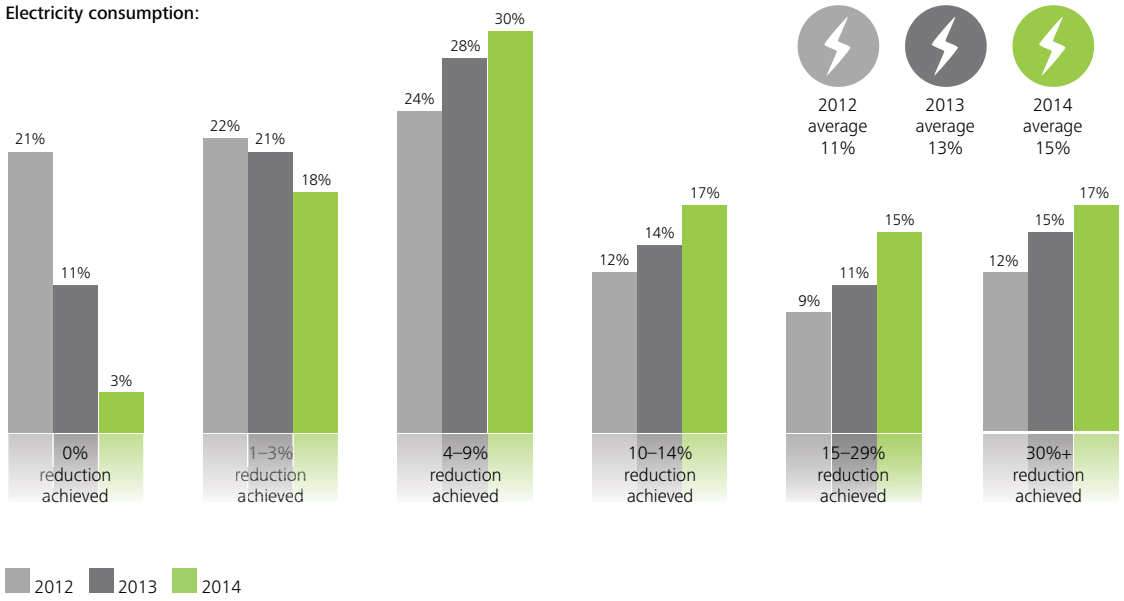
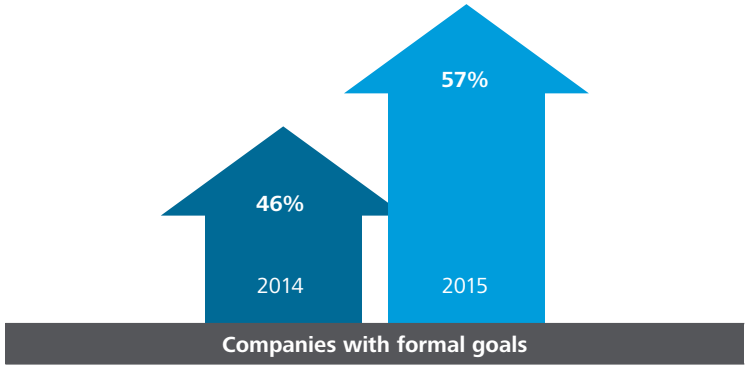


Figure 10: More companies codifying their energy management objectives

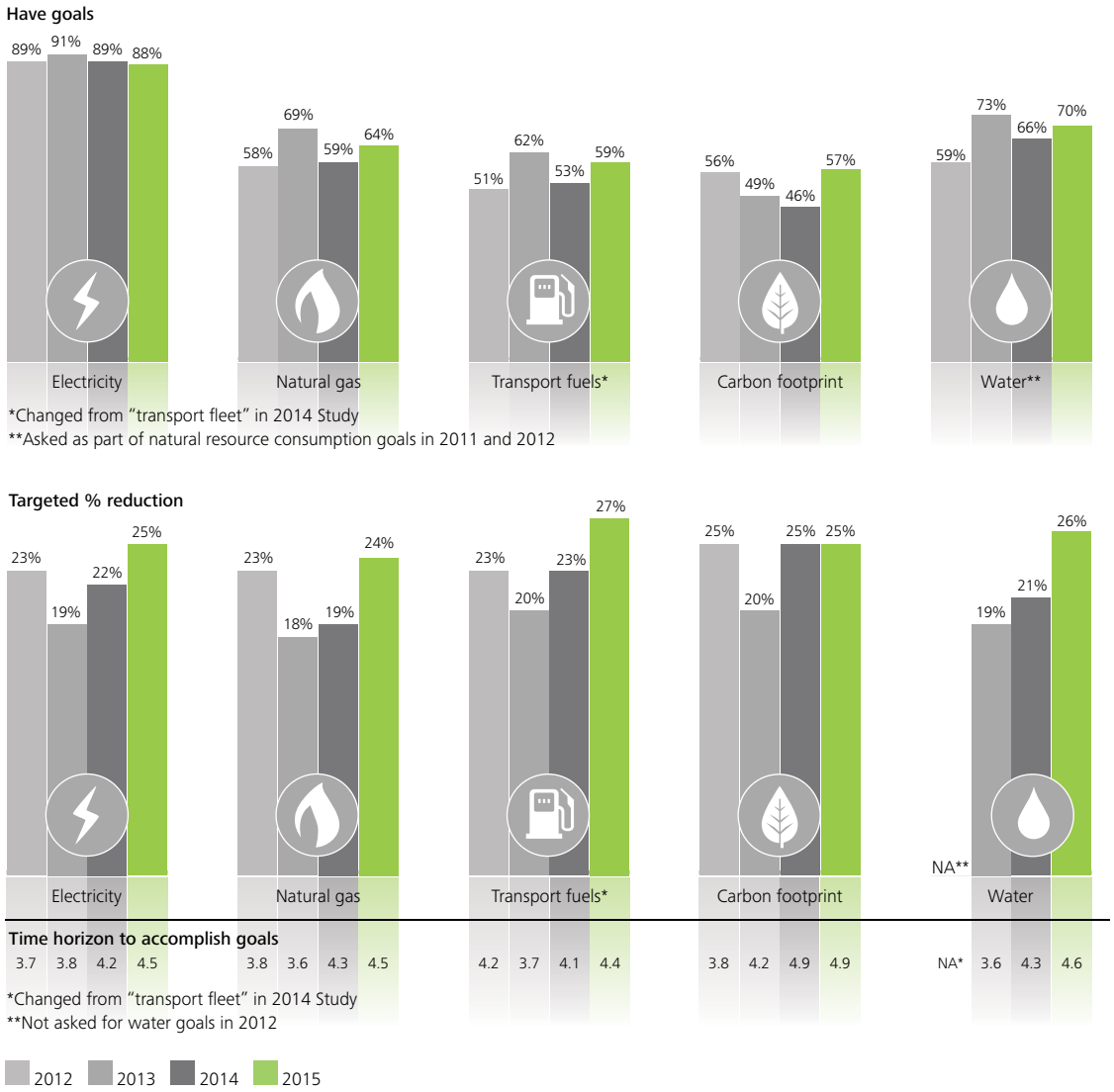


Energy management goals extend well beyond electricity usage and businesses are reaching higher

While nearly 9 in 10 companies have set electricity reduction targets, energy management goals go well beyond electricity consumption to target other energy management/resource areas. Water and transport fleet goals have risen back to 2013 levels after getting less attention in 2014, and carbon footprint goals, which also fell last year (2014), have shown resurgence. Close to 6 in 10 now report having carbon footprint goals, back to levels seen in 2012. Companies of all sizes frequently have reduction targets that go beyond electricity consumption, although enterprises are more likely to have carbon, transport, and water goals. Also of note—with the exception of carbon footprint—companies' reduction goals in all areas were more aggressive in this year's Study than in the 2014 Study.

Furthermore, companies are increasingly factoring corporate growth rates into the equation when setting their targets. Thirty-eight percent now say they factor in expected growth, compared to 34 percent in 2014 and 29 percent in 2013.

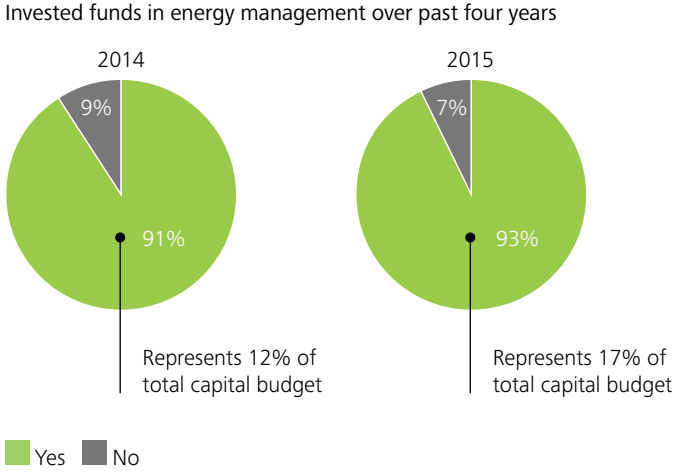
Figure 11: Water and transport fleet goals are back on the rise



Companies "keeping it real" by allocating more time and capital toward their targets

Far from being "pie in the sky," companies are matching their more ambitious targets with longer time frames for achieving them. This could be because their expectations are becoming more realistic as a result of experience and maturity. It could also be because their goals are now more entwined with their overall business strategies and it requires more time to turn a larger ship. In addition, as the "low hanging fruit" has been harvested, current and future solutions require more time and capital, and businesses are increasingly acknowledging this. Companies report giving themselves about 4.5 years on average to accomplish their electricity goals, up from approximately 4.2 years on average last year (2014). Consistent with businesses giving themselves more time, they are also giving themselves more capital to accomplish their energy management goals. Ninety-three percent of companies have invested funds in energy management programs over the last five years, representing about 17 percent of their total capital budgets. This marked a notable increase in funding commitment. In comparison, 91 percent of companies in the 2014 Study invested funds in energy programs, representing 12 percent of their total capital budgets.

Figure 12: Comparable numbers have a pool of funds to invest in energy management but allocating a greater percentage of their of capital budget in 2015 vs. 2014



Companies charging ahead with batteries and other more capital-intensive energy management tactics

Companies' growing commitment to energy management is further reflected in the increasing adoption of more capital-intensive energy management tactics. As in 2014, businesses indicated the most popular tactics for reaching their energy management goals are using timers/sensors to control when equipment is powered on (cited by 55 percent of companies), installing motion occupancy sensors (53 percent), and installing building energy management systems (47 percent). However, this year's Study revealed a significant increase in more capital-intensive measures. For instance, 39 percent of businesses report installing electricity generation solutions (e.g., solar |panels) on facilities, compared to 31 percent in 2014. Thirty-four percent report implanting energy recovery mechanisms into production processes, up from 27 percent in 2014, and more than one quarter (26 percent) say they installed batteries to store electricity for usage at times when electricity prices are higher, compared to 15 percent in 2014. Indeed, companies increasingly appear to be investing in the elements necessary to build their own energy ecosystems, perhaps in search of integrated solutions they cannot yet find in the marketplace. This is particularly reflected in the large increase in companies choosing to self-generate a portion of their electricity supply.

Figure 13: Pieces of the energy ecosystem

Businesses indicate the most popular tactics for their energy management goals in 2015

55%
Use timers/sensors to control when equipment is powered on

26%
Install batteries to store electricity for usage at times when electricity prices are higher, compared to 15% in 2014

47%
Install building energy management systems

41%
Participate in a utility sponsored demand reduction program

39%
Install electricity generation solutions like solar panels on facilities

34%
Implant energy recovery mechanisms into production processes, up from 27% in 2014

53%
Install motion occupancy sensors

Businesses increasingly developing more power through on-site generation

Companies are showing a greater propensity to invest the effort and funds needed to "do it themselves," with more than half (55 percent) reporting they generate some portion of their electricity supply on-site, up from 44 percent in 2014. As in the 2014 Study, some industries are pursuing self-generation goals more aggressively than others. Technology, media, and telecommunications companies (67 percent) and health care organizations (65 percent) are the most likely to generate on-site, perhaps because they require high levels of reliability. Financial services companies are the least likely, with 48 percent reporting they have on-site generation.

Figure 14: On-site electricity production has skyrocketed

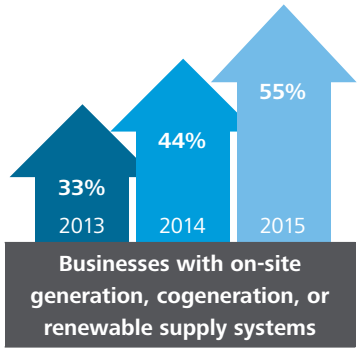


Figure 15: Mid-cap companies are the most challenged to tie investments in energy management to overall corporate strategy/business case

Energy management alignment to corporate strategy/business case	Total	Small Less than $100MM	Mid-cap $100-$499MM	Enterprise $500MM+
There is integration across multiple business functions in energy management goal setting	34%	27%	34%	40%
All capital planning requires energy management and alignment to energy strategy as part of business case	36%	35%	25%	43%
Financial analyses include multiple performance scenarios such as best-case, base-case, worst-case	43%	35%	38%	52%
A comprehensive risk analysis is performed	42%	31%	44%	48%

Energy management increasingly considered in corporate strategic decision-making

In the 2015 Study, companies showed greater maturity in embedding energy management into corporate strategy as a core business competency. More than one-third (36 percent) now require all capital planning to consider energy management implications and alignment to energy strategy as part of the business case, up from one-quarter in 2014. Companies are also getting better at evaluating the return on investment of energy management investments, with 43 percent now reporting they always perform financial analyses to evaluate energy management programs. This includes taking multiple performance scenarios into account, such as best-case, worst-case, etc. While companies are becoming more sophisticated and consistent in analyzing the anticipated financial performance of their energy initiatives, the average payback period required for investments in energy management programs is about four years, consistent with the 2014 Study results. Even though businesses of all sizes have made improvements, mid-cap companies are still the most challenged to tie investments in energy management to the overall corporate strategy/business case.

Program measurement and management

Companies taking a more structured approach to tracking and measuring energy performance

Forty-one percent of companies report maintaining a formal energy performance measurement process that gauges performance across functional areas against goals and Key Performance Indicators (KPIs). This is up 10 percentage points over the 2014 findings. Similarly, 34 percent of businesses say all of their energy management projects adhere to rigorous measurement and verification methodologies, up from 25 percent in the 2014 Study. It comes as no surprise that as energy management programs mature, businesses are developing more structured measurement and reporting processes. It also stands to reason that the degree of effort needed to measure progress is increasing. As the complexity of initiatives grows, respondents noted it continues to be challenging to monitor performance against goals, with 28 percent indicating it is extremely/very difficult to do so. This compares to 20 percent in 2014 and 25 percent in 2013.

Figure 16: Companies of all sizes are gaining maturity in measuring performance of their energy management initiatives

Performance measurement and management	Total	Small Less than $100MM	Mid-cap $100-$499MM	Enterprise $500MM+
Measurement is performed across functional areas against goals and KPIs	41%	33%	37%	49%
It is extremely/very difficult to monitor our performance against our energy management goals	28%	29%	30%	26%
All projects adhere to rigorous measurement and verification methodologies	34%	26%	36%	40%

Demand and operations management

Energy performance increasingly factored into operations planning

Overall, companies are becoming more sophisticated in incorporating energy management into the different aspects of their businesses. More than one-third (35 percent) model their operations to account for energy performance across a range of scenarios, up from 28 percent in 2014, and 30 percent incorporate energy as a key planning parameter in operations and inventory planning, compared to 24 percent in 2014. Furthermore, more companies report participating in demand response programs. Twenty-nine percent of respondents say they participate in all available programs, up from 20 percent in 2014, and similar to the results of last year's Study, about one-third (34 percent) indicate they participate in these programs "somewhat." As one might expect, enterprises—which often have more robust planning processes and support systems—are the most advanced in incorporating energy into operations planning and management.

Figure 17: Large enterprises are more mature when it comes to demand and operations management

Demand and operations management	Total	Small Less than $100MM	Mid-cap $100-$499MM	Enterprise $500MM+
Operations are modeled to account for energy performance across a range of scenarios	35%	30%	32%	40%
We participate in all available utility demand response programs	29%	24%	29%	33%
Operations and inventory planning incorporate energy as a key planning parameter	30%	28%	23%	36%

Supplier and contract management

Companies becoming more diligent in procuring energy management services and tracking supplier performance

Up 10 percentage points from 2014, 34 percent of respondents indicate they have KPIs in place for all energy-related suppliers. Twenty-seven percent say they evaluate all of their energy supply purchases and related services against well-defined and well-communicated policies and procedures, up from 21 percent in 2014. Companies of all sizes are making strides with respect to supplier and contract management, but even enterprises, which are the most advanced, have ample room to improve: only about 4 in 10 enterprises report having KPIs in place for all energy-related suppliers.

Figure 18: Companies of all sizes making strides with respect to supplier and contract management

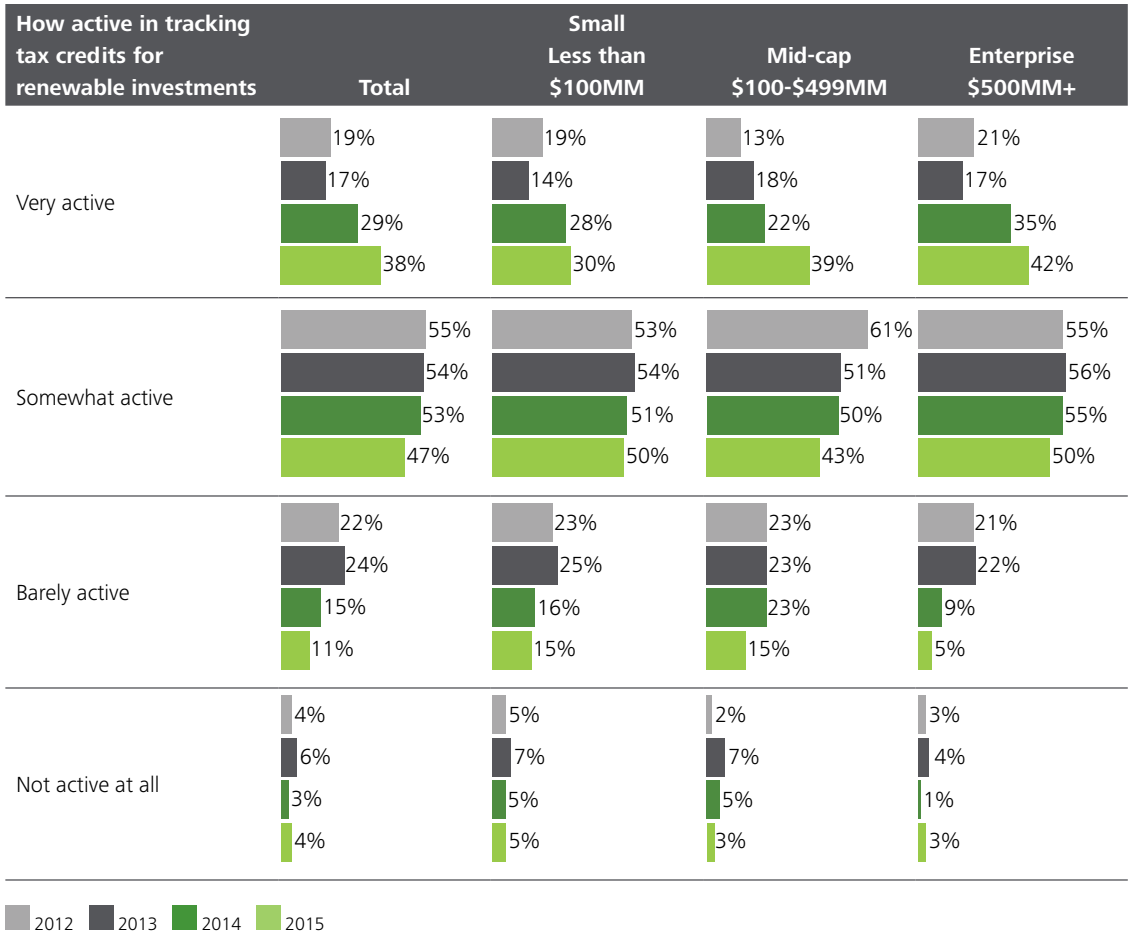
Supplier and contract management	Total	Small Less than $100MM	Mid-cap $100-$499MM	Enterprise $500MM+
Financial analyses for energy management evaluated against well-defined and well-communicated policies and procedures for all energy-related services	27%	19%	27%	33%
Our program is comprehensively communicated and suppliers are tracked via metrics	33%	30%	32%	36%
Standard energy services request for information (RFI) and request for proposal (RFP) processes are in place and applied consistently across the organization by trained employees	37%	30%	33%	43%
KPIs are in place for all energy-related suppliers, enterprise wide	34%	27%	34%	39%

Cost and risk management

Companies monitoring energy spend more closely and taking greater advantage of incentives

Thirty-eight percent of respondents indicate they actively track energy spending for all corporate entities and energy types on a monthly basis, up from 29 percent in 2014. And, the emphasis on greater financial prudence doesn't stop there. Companies are not leaving as much money on the table as they have in previous surveys: activity in tracking tax credits and incentives for renewable investment has picked up versus prior years across companies of all sizes. This uptick likely correlates to increased use of renewables as well as greater familiarity with available incentive programs.

Figure 19: Companies of all sizes are more actively tracking tax credits and incentives for renewable investments



Governance and culture

Employees slowly coming around in embracing the merits of energy management

Companies still face challenges in gaining employee buy-in, although practices are becoming more ingrained and rewards more aligned with energy management goals. Sixty percent of businesses indicate they have difficulty gaining acceptance and participation from their employees regarding resources management. But, progress is being made in empowering and engaging employees, which signifies greater alignment of energy management strategy with business strategy. Thirty-four percent now report their companies have corporate programs for employees at all levels, i.e., all employees are engaged and are capable of identifying opportunities, up from 28 percent in 2014. A similar increase appeared concerning energy management and employee compensation. Thirty-two percent now say energy management goals are directly linked to performance metrics and compensation, up from 23 percent in 2014. In addition, more companies are preparing for the future by facilitating knowledge transfer: 31 percent report having centers of excellence in energy management, compared to 25 percent in 2014.

Figure 20: More businesses are linking energy management goals to compensation

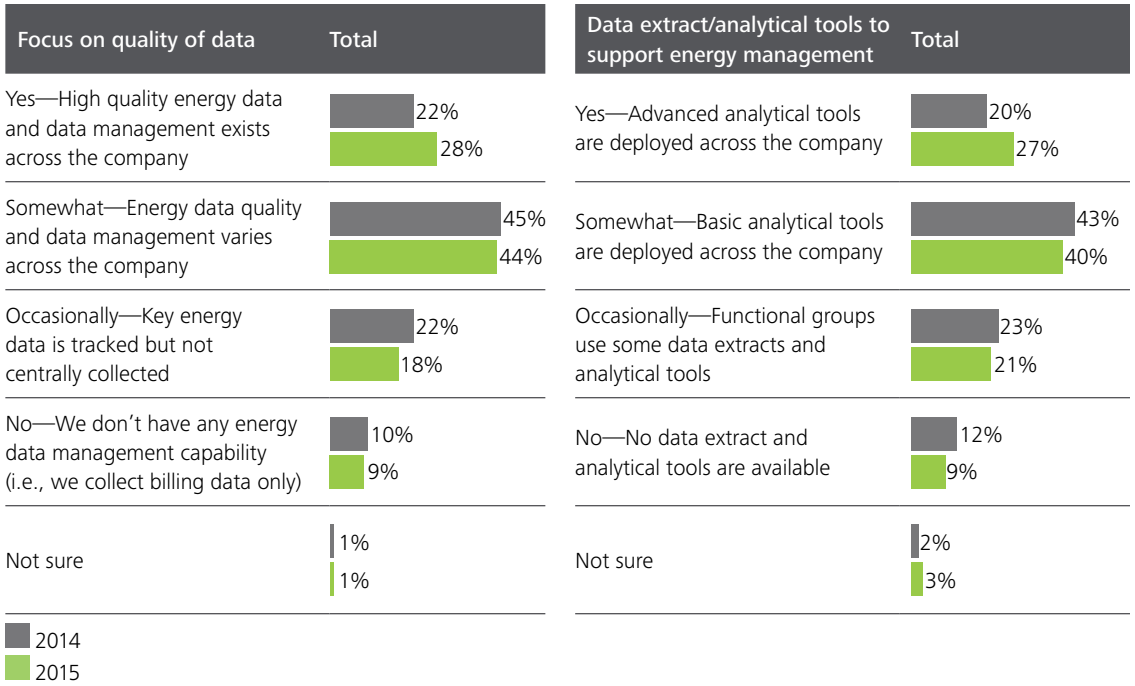
Energy management goals and employee compensation	Total
Yes—Goals are linked directly to performance metrics and compensation	23% / 32%
Somewhat—Goals tracked but do not directly impact compensation	40% / 40%
Occasionally—Goals tracked for some employees, no impact on compensation	16% / 12%
No—Goals are not linked to performance metrics	20% / 15%
Not sure	1% / 1%

2014 2015

Companies adopting advanced analytical tools and focusing on high-quality data, but limitations persist

Consistent with other maturity metrics, more companies are using advanced analytical tools or are focusing on quality and visibility of energy data across the organization, but there is still room for significant improvement. Twenty-eight percent of businesses say high-quality energy data and data management exists across the company, compared to 22 percent in 2014. Similarly, 27 percent report advanced analytical tools are deployed across the company, up from 20 percent in 2014. As additional study findings suggest, the suitability of current software and technology offerings may be limiting progress in data and analytics, especially for smaller companies that do not have the resources to develop custom systems.

Figure 21: Businesses increase focus on high quality energy data and use of analytical tools



Third-party software missing the mark and smart technologies not making the grade

Off-the-shelf software does not appear to be very helpful in supporting resource management programs. Only 5 percent of businesses say they use third-party software to track their resources management programs, while 40 percent say they track them in a system developed specifically for their companies. Sixty-three percent still use spreadsheets for at least some of their tracking needs. The dissatisfaction with current tools extends to technologies designed to support managing electricity consumption. Fifty-seven percent of business respondents believe the technology available today is inadequate to be very helpful, and 64 percent think the "smart technology" designed to help reduce electricity consumption is not that effective for their companies' circumstances.

Introduction: Consumer views on energy management

While businesses showed signs of a significant shift in their views regarding energy management, consumers generally held steady in their attitudes and behaviors in the 2015 Study. Notably, even though they are a little less worried about their electric bill/consumption, consumers are still not expecting to use more electricity in the future. The lessons of the recession, it seems, have become entrenched. However, the 2015 Study findings do suggest that consumers are beginning to feel more optimistic about the future in light of lower gasoline prices, the abundance of US energy resources, and greater confidence in their own abilities to control their financial destinies. They also stayed the course in supporting renewables, not so much to save money or improve the economy, but to "do the right thing" as a better choice for the future. The detailed findings presented later in the report highlight some of the potential opportunities emerging as consumers stop "hunkering down" and start pursuing their goals once again.

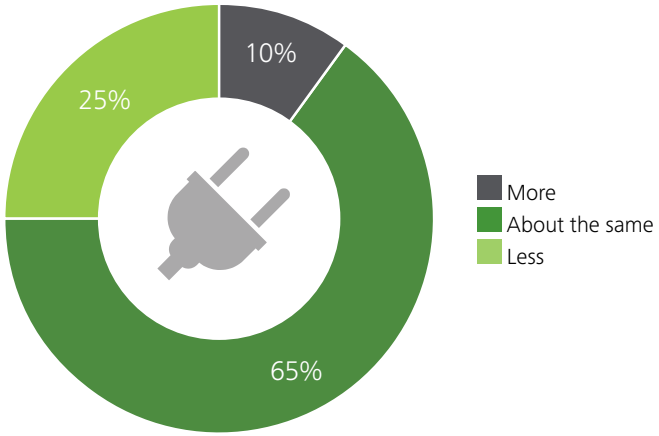
Detailed consumer findings

Consumers continue to contain household electricity consumption

Eighty percent of consumer respondents say their families took steps to reduce their electric bills over the past year, holding steady from 83 percent in 2014, and 81 percent in 2013. Sixty-five percent plan to use about the same amount of electricity in 2015 as they did last year, and 25 percent believe they will use less. Consistent with the 2014 findings, only about 10 percent of consumers in this year's Study expect their households to use more electricity over the next year. While consumers are continuing to take steps to reduce household electricity consumption, 64 percent agreed with the statement, "Our family is already doing everything we can to keep our electric bill down so there isn't really anything incremental we can do to cut costs further." This implies that 36 percent believe they could do more, up from a low of 23 percent in 2012.

Figure 22: Ninety percent of consumers expect their electricity consumption to remain the same or drop in 2015

Expected future electricity use:

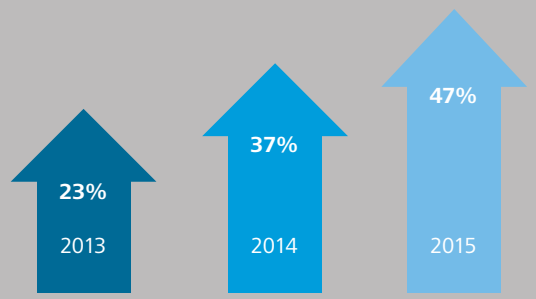


Slow and steady: Interest in electric vehicles rolls ahead

Overall interest in electric vehicles (EVs) continues to trend slightly forward, with 23 percent of consumer respondents indicating they are extremely/very interested in purchasing one, up from 20 percent in 2014. The appeal of EVs is increasing among all generations, but it is still the strongest among Gen Y, those between the ages of 21 and 33, with 33 percent indicating they are extremely/very interested, compared to 27 percent in 2014. Across demographics, price remains the top factor inhibiting interest in EVs, followed by mileage range.

As is often the case with new product adoption, businesses are leading the charge by making the operation of EVs more practical and convenient. Nearly half (47 percent) of companies now have EV charging stations at their places of business, up from 37 percent in 2014. Among those businesses that provide charging stations, 75 percent restrict them to "employee use only," while 25 percent additionally allow customers or the public to use them. Many businesses are moving toward greater self-reliance concerning EVs as they are with other components of the energy ecosystem: more than two-thirds (68 percent) of companies that offer EV charging capabilities own the charging stations themselves, compared to 61 percent in 2014.

Businesses with electric car charging stations



The energy efficiency message is getting across—and it is getting social

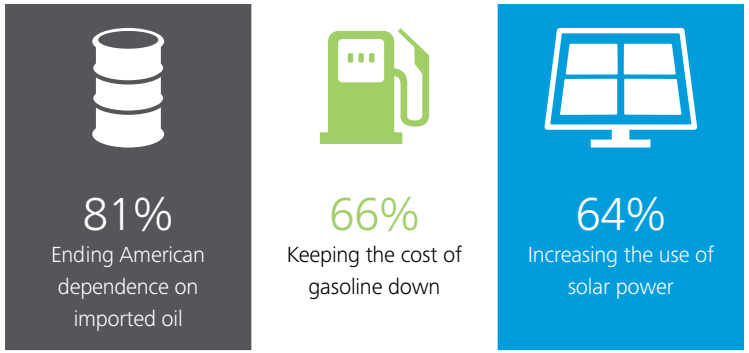
More consumers say they have received "several good tips" on saving energy, increasing from 24 percent in 2014 to 31 percent in 2015. Among those who report receiving several or a few good tips, 67 percent say they got some of them from their electricity provider. These tips and other messages are reaching consumers via a number of channels. For instance, social media jumped substantially as a source of energy saving tips in this year's Study, increasing from 19 percent in 2014 to 28 percent in 2015. Members of the Gen Y generation are even more likely to find social media to be a useful source of information, with 39 percent stating they have received good tips through their social networks. Additionally, participation in online energy savings contests is small but growing, doubling from 6 percent in 2014 to 12 percent in 2015. And, electricity providers should not dismiss customary bill stuffers as an effective means of getting their messages across; consumers view the information included with their monthly electricity bills as more trustworthy than in previous surveys, with 30 percent perceiving this information to be "extremely/very trustworthy," compared to 24 percent in 2014.

It is not just about the money anymore, as environmental concerns show uptick

Seventy-seven percent of consumers consider themselves knowledgeable about alternative energy resources, up slightly from 2014 (75 percent). Desire to increase the use of renewables—particularly solar—continues to trend upward among consumers: 64 percent rank "increasing the use of solar power" among the top three energy-related issues most important to them, up from 58 percent in 2014 and 50 percent in 2013. Similarly, 50 percent cite "increasing use of wind power" among their top three issues, up from 45 percent in 2014 and 41 percent in 2013. In addition, 68 percent of consumers now believe climate change is caused by human actions, up from 64 percent in 2014. Consumers also expressed a strong desire to end American dependence on imported oil, with 81 percent ranking that goal among their top three energy-related matters, up from 77 percent in 2014.

Figure 23: Consumers weigh in on most important energy issues

Top three energy issues:



Consumers keep flicking the same switches to save energy, not following through on intentions to do more

Consistent with the 2014 Study, basic tactics to trim electricity bills are largely being employed, with 70 percent of consumers in this year's study saying they shut down electronics when they are not in use, 69 percent reporting they set their thermostats a few degrees lower in the winter and higher in the summer, and 63 percent indicating they replace older incandescent bulbs when they burn out with compact fluorescents and other more efficient lighting technologies.

Even though consumers signaled their intentions last year to go beyond the basics and invest in more capital-intensive tactics, it appears many did not follow through. For instance, 47 percent of respondents in the 2014 Study cited better insulating their homes, 46 percent replacing old appliances with energy-efficient ones, and 41 percent installing energy efficient windows and doors as being among the top five most important things they could see themselves doing to save even more electricity in the future. Nonetheless, the proportion of respondents who say they are currently doing those things dropped in this year's survey, indicating that consumers by and large have not acted on their intentions. And, the holding pattern goes round and round; in the 2015 Study, consumers still pointed to insulating their homes (46 percent), upgrading appliances (45 percent), and installing energy efficient windows and doors (40 percent) as among the top five things they could do to trim their electric bills in the future.

Figure 24: Consumers are not following through on intentions to invest in more capital-intensive energy savings tactics

	Doing now		Top 5 future	Top 5 future
Actions to conserve electricity	**2014**	**2015**	**2014**	**2015**
Replace old appliances with new more energy efficient appliances	48	45	**46**	**45**
Install energy efficient windows and doors	38	35	41	40
Better insulate your home to keep heat or cool air from escaping out of the house	42	40	**47**	**46**
Use a "smart" power strip that senses when appliances are off and cuts "phantom" energy use	14	14	35	37
Use a timer on water heaters (that turns off during sleeping hours)	8	8	24	23
Get a smart energy management application to control and reduce your energy consumption	5	5	21	23
Install solar panels that provide electricity for your home	4	5	27	28

In addition, consumers have yet to embrace "smart" technologies. Penetration of smart thermostats or home control/automation systems remains low and consistent with 2014. Only 4 percent report having a programmable thermostat they can access and change via smartphone, and only 3 percent say they have a home automation system that can be accessed by a mobile device.

Interest in solar panels remains warm, but few have been hot to install

As previously noted, consumers say they want to use more renewables, yet most are not personally acting on that desire. Consistent with last year, more than one-fourth (28 percent) named installing solar panels as among the top five actions they could take to trim their electric bills in the future, yet only about 3 percent have solar panels on their primary residences

Figure 25: All generations express increased interest in sourcing other services from electricity providers

Interest in services from electricity providers	Total	Gen Y	Gen X	Baby boomers	Matures
Internet service	36% / 51%	43% / 61%	39% / 52%	31% / 48%	30% / 35%
Cable TV service	27% / 38%	33% / 41%	30% / 38%	23% / 38%	26% / 29%
Telephone service	21% / 30%	22% / 27%	23% / 32%	20% / 32%	22% / 26%
Home security system	18% / 23%	19% / 24%	21% / 25%	15% / 23%	15% / 19%
Home automation	17% / 17%	19% / 20%	18% / 18%	16% / 16%	15% / 11%
None of the above	53% / 38%	41% / 27%	51% / 35%	59% / 43%	63% / 54%

2014 2015

now. Top drivers of interest in solar panels are saving on electricity bills (79 percent), which was consistent with last year, and "solar power is clean and does not contribute to climate change," cited by 66 percent of respondents, up six percentage points from 2014. Perceptions of being expensive (40 percent) and fears of the panels not working as promised (25 percent) remain the main barriers to consumer interest in solar, and these sticking points appear to be holding people back.

Consumers are open to new products and services from their electricity providers

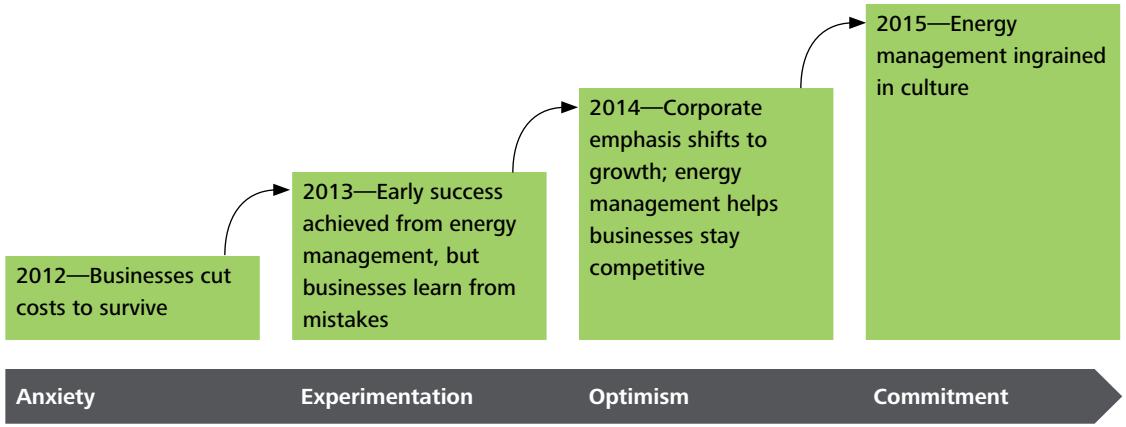
Consumers signaled a far greater interest in sourcing other services from their electricity providers. Internet service, cited by 51 percent of respondents, and cable TV service, cited by 38 percent, remain the most natural extensions in consumers' minds. These figures are up from 36 percent and 27 percent respectively in 2014.

Concluding thoughts

The 2015 Study illuminates the changing mindset of businesses and consumers concerning how they think about energy management, what matters to them, and the steps they might take to accomplish their objectives. This year, both groups appear to have adopted the view that reverting to previous behaviors is no longer practical.

On the business side, energy management is now recognized and integrated as a core aspect of competitive advantage. Businesses by and large have been able to bring more structure to their energy management processes, procedures, and goals. Companies are feeling very good about their successes, and are eager to test the boundaries of what they can accomplish. Energy and resource reduction targets are trending higher, tempered by the recognition that more time and greater capital expenditures will be required to reach them. This emerging confidence is accompanied by growing self-reliance. Innovation is being rewarded, and if companies cannot find the solutions they are seeking in the marketplace, they will fill in the gaps themselves.

Figure 26: So this is what confidence and self-reliance looks like…
Powerful progression and maturation in energy management since the first Deloitte Resources Study



A growing number are building their own energy ecosystems by generating electricity on-site, installing battery storage solutions, and designing custom software solutions, among other tactics.

On the consumer side, people have settled into an uneasy state of calm. While they are starting to feel better about the economy and the growing supply of domestic energy resources, they remain wary that a big surprise, such as a financial collapse or a terrorist event, could wipe out recent gains. This partially explains why they generally do not intend to use more electricity or to revert back to more liberal spending patterns. Nonetheless, consumers who had put their discretionary purchases on hold over the last few years are beginning to ease up on the brakes. However, even though they remain intrigued by advances such as smart technologies, solar panels, and electric vehicles, they appear to be waiting either to become more confident that these products will work as promised or to receive the right offer. Notably, the "right offer" may not be just about getting the best deal; trust, convenience, and environmental concerns additionally will come into play.

What does this mean for businesses?

Companies across the board are moving up the maturity curve. Enabling tools and technologies are becoming more widely deployed and leading companies are becoming more comfortable with implementing larger, more capital-intensive solutions. As a result, the platform for innovation and expansion is largely in place, and the pace of change is likely to accelerate. This situation has the potential to put laggards at a further disadvantage. For others, it creates opportunities for enhanced benefits and continuous improvement. For instance, businesses in certain industries, such as health care and technology, media, and telecommunications, have been early leaders in energy management because of their huge energy needs and their requirements for high levels of reliability, but they must continue to drive their energy management agendas forward in order to maintain and extend their competitive advantages. Meanwhile, businesses in other industries can leverage the lessons learned by those farther along the maturity curve in an effort to catch up, remain competitive, or to become leaders themselves. Nonetheless, regardless of industry or level of energy management maturity, business as usual is no longer an option.

What does this mean for electricity providers?

Most electricity providers market to both consumers and businesses. Consumers note they are receiving several good tips from their electricity providers, and they feel that the information is reliable. However, consumers largely remain in a holding pattern, and they are not acting upon all of the energy management options available to them. Social media and online campaigns may be key to moving them off the dime, particularly among Gen Y. That said, electricity providers may have an even bigger opportunity to better serve their business customers through customized energy management programs or targeted incentives. This would require electricity providers to rethink how they classify their customers, perhaps segmenting them across industry sector and/or differing levels of maturity. For example, the energy management needs of a financial services institution would vary greatly from those of a consumer products manufacturer. It might also require them to rethink their business models, i.e., do they have the ability to offer smart energy management technologies or self-generation solutions to companies?

What's next?

The 2015 Resources Study confirmed what many electricity providers and businesses had already suspected: energy management has passed through a perceptual gate. From here, there is no turning back. The implications of this shift for electricity providers and for businesses across industries will be further explored in a series of future reports. Please stay tuned for topics and release dates.

How can you leverage the Deloitte Resources 2015 Study?

Deloitte has designed this Study to be a living tool to assist companies with their business decision-making. The expansive database developed through the Study allows Deloitte to guide companies in examining the Study's findings in much greater depth and from many vantage points. The Deloitte Energy Management CMM can be used to help build the business case necessary to establish priorities and gain support for proposed initiatives or it can provide solid data for new directions that are under evaluation.

To explore where your organization stands on the Deloitte Energy Management CMM, or to schedule an appointment to take a "deeper dive" into the Study data, please email us at DeloitteResourcesStudy@deloitte.com.

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Marlene Motyka is the US Alternative Energy Leader for Deloitte and a principal in the Advisory practice of Deloitte Transactions and Business Analytics LLP. In her role as Deloitte's Alternative Energy Leader, she steers Deloitte's overall delivery of a broad range of cross-spectrum professional services to alternative energy companies and those who invest in alterative energy, including tax-related issues, mergers and acquisitions and financing activities, business strategy, valuation, accounting, technology integration, operational consulting, and human capital offerings. For more than 18 years, Ms. Motyka has supervised and performed financial analyses and valuations of electric generating projects; renewable energy projects; gas, electric, and district heat transmission and distribution networks; and intangible assets. These assignments have been performed for mergers and acquisitions, purchase price allocations, financial reporting, freshstart accounting, taxation, sale/leaseback, project financing, financial modelling, and management information purposes. Ms. Motyka is a frequent speaker on topics such as renewable energy and valuation. She has an MBA in finance from Rutgers University and a BS in mechanical engineering from Lehigh University.

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Learn more

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