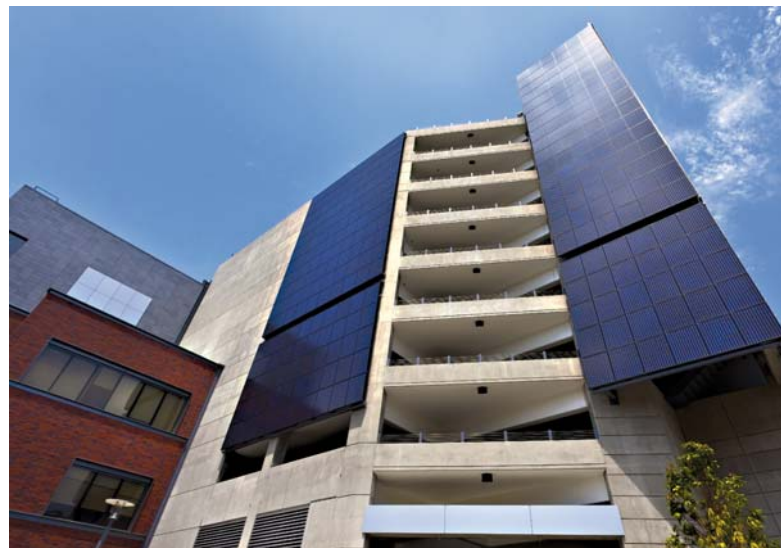


Energy efficiency and energy savings

A view from the building sector

A report from the Economist Intelligence Unit



Commissioned by

Global Buildings
Performance Network





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Preface

Energy efficiency and energy savings: a view from the building sector is an Economist Intelligence Unit report, commissioned by the Global Buildings Performance Network. This report delves into the actions and perspectives of real estate and construction executives with respect to energy efficiency and the regulatory environment. The research for this report comprised a survey of executives in the US, Europe, China and India, as well as in-depth interviews with a range of business leaders. We would like to thank all survey respondents and interviewees for sharing their time and insight. The Economist Intelligence Unit conducted the analysis and wrote the report. The findings and views expressed in the report do not necessarily reflect the views of the sponsor. Sarah Murray is the author of the report and Brian Gardner is the editor.

October 2012

Interviewees (listed alphabetically):

Brotin Banerjee, managing director and chief executive, Tata Housing, Tata Group

Syed Mohamed Beary, chairman, Bearys Group

George Caraghiaur, senior vice-president of energy and procurement, Simon Property Group

Peter Couch, chief operating officer, Grainger

Kenneth Fong, Asia-Pacific director of engineering operations, Hilton Worldwide

Jeff Schwartz, co-founder, Global Logistic Properties

Justin Snoxall, head of the Business Group, British Land

Maxime Trocmé, head of sustainable development, Vinci

Executive summary

The message that energy efficiency is good for business is gaining momentum across the real estate and construction sectors. Motivated by the potential for cost cutting, reducing energy consumption is being taken seriously by industry. Yet attitudes towards climate change mitigation remain mixed across the globe. Moreover, most of the sector's energy efficiency investments are in new buildings rather than retrofits, even though existing structures make up the lion's share of the world's buildings. Still, given the huge challenge of cutting the energy footprint of the global building stock, an extraordinary opportunity exists to scale up efficiency measures in the sector. And government has a role to play in making this happen.

To investigate this topic, the Economist Intelligence Unit conducted a survey of 423 executives worldwide and interviewed leading decision-makers. The main findings of the research include:

- Despite some barriers to investment, energy usage is an important consideration for most companies and is a major factor in investment decisions for 63% of survey respondents. It is especially important for companies that rate themselves as financially successful.
- Many companies are replacing inefficient lighting (57% of respondents), HVAC systems and building insulation (both 50%) with more efficient alternatives. Four in ten are going beyond equipment upgrades and rethinking the design and layout of their buildings to maximise use of natural light. Thirty-seven percent recognise that operations and organisational change are as important as technology in reducing consumption.
- Companies are becoming more sophisticated in their energy management. A surprising 69% use energy efficiency as a risk management tool. Furthermore, many are willing to tolerate

About this survey

In June 2012 the Economist Intelligence Unit conducted a global survey of 423 senior executives from four sectors: residential real estate, building construction, commercial real estate and the industrial real estate sector.

Geographically, respondents were evenly split among the US, Europe, India and China. Organisations of all sizes were represented, and roughly half were from firms with revenue over US\$500m. ■

long-term investments to help achieve greater efficiency: one-half of respondents say that the maximum payback time for energy efficiency investments is five years or longer. Companies are linking energy stewardship with financial performance. Senior executives interviewed for this report say they have found that clean, green buildings give them a marketing advantage.

- Many companies remain ill informed about the true costs of their energy consumption and often underestimate its financial significance for their businesses. Only 31% of companies say they are auditing their energy use, and while awareness is growing that energy efficiency measures can drive profitability (only 25% of respondents see a lack of a compelling business

case as an obstacle to investing in energy efficiency), two-thirds of respondents substantially overestimate the cost of constructing energy-efficient buildings.

- Although 75% of respondents say energy efficiency regulation is beneficial, a lack of enforcement is the main obstacle to implementation, according to the top financial performers. This suggests that there are opportunities for deeper change and faster, more widespread adoption should enforcement and effective incentives be implemented.

Policymakers thus can play a vital role in promoting energy efficiency across the buildings sector. This will be essential if the sector is to realise its potential in reducing carbon emissions. ■

Introduction

As pressure grows to curb greenhouse gas emissions, the real estate and construction sectors can play a critical role in shaping energy use. Since they are collectively responsible for approximately 40% of the world's carbon emissions, climate change targets will be nearly impossible to reach without industry's full participation.

This is particularly the case in rapidly urbanising emerging markets. In China alone, more new housing was constructed in 2010 than the entire housing stock of Spain, a nation of almost 50 million. With the built environment expanding at such rates, the need to accelerate implementation of energy efficiency is clear.

Fortunately, many companies see the business case. Investments in energy efficiency can offer a profitable way of reducing carbon emissions levels. And with sustainability rising on the corporate agenda, landlords that offer clean, green buildings differentiate themselves.

Companies are responding. Many are making impressive strides in improving the efficiency of their structures, often using a range of increasingly sophisticated building management services and efficiency technologies such as sensor-controlled lighting and wireless temperature controls. Meanwhile, new relationships between landlords, building managers and tenants offer further opportunities to reduce energy consumption. This can involve new kinds of contracts or closer collaboration; in some cases, it will require

policy-makers to remove barriers to changing business models.

Obstacles remain, however. To start, the emphasis on energy efficiency is largely directed towards new buildings. While this is understandable given the operational, logistical and technical difficulties of upgrading older buildings, it limits the ability of the buildings sector to realise fully its energy efficiency potential. Retrofits are essential because buildings are durable, long-lasting investments, and existing structures will continue to make up the lion's share of the built environment.

A lack of awareness among tenants and buyers of the benefits of low-energy buildings also impedes progress. Consumer awareness can serve as a catalyst for innovation by creating market demand for highly efficient buildings. This exists in some European markets, such as Austria, where energy efficiency is more highly valued.

Significant opportunities exist today for both companies and policy-makers. Energy efficiency provides companies with the chance to cut costs and differentiate their buildings. Yet policy-makers are in a race against time as the built environment expands rapidly and the effects of climate change become evident. They can stimulate the private sector to contribute to the solution of this challenge by introducing carefully crafted policy tools that create market opportunities. ■

1

Energy efficiency drives company profitability

Property managers can't control things such as the taxes a company has to pay, the insurance premiums a property has to pay or the cost of land leases. "If you strip those costs away and look strictly at the controllable costs, energy expenditure represents a much bigger part of those costs."

George Caraghiaur, Senior Vice-president, Energy and Procurement, Simon Property Group

There is a strong economic rationale for the adoption of energy efficiency measures with short payback periods. It is more challenging to take more transformative approaches to efficiency in the buildings sector. Nevertheless, many companies are becoming more strategic in their approach to energy efficiency investments.

Efficiency measures can have a tangible impact on the bottom line. Energy expenditure often constitutes a relatively small percentage of overall operating costs. It represents about 14% of

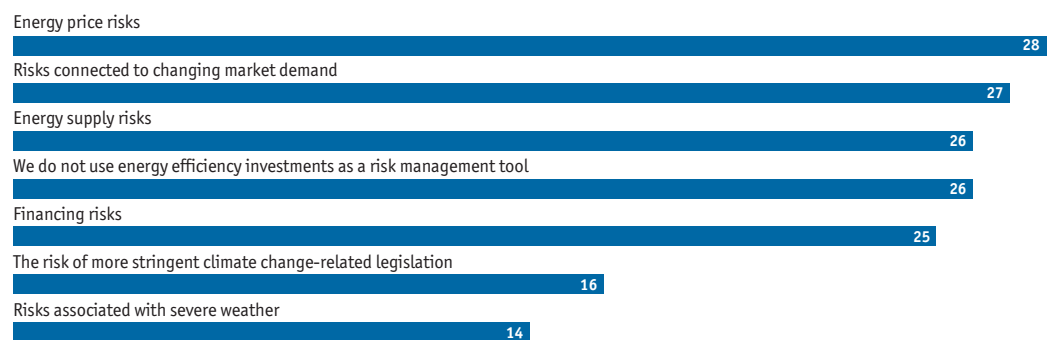
operating costs at Simon Property Group, one of the world's largest real estate companies, according to George Caraghiaur, senior vice-president of energy and procurement. However, energy can represent a large proportion of controllable expenditure. "Property managers can't control things such as the taxes a company has to pay, the insurance premiums a property has to pay or the cost of land leases," says Mr Caraghiaur. "If you strip those costs away and look strictly at the controllable costs, energy expenditure represents a



Companies use energy efficiency investments to manage a diverse set of risks

How does your company use energy efficiency investments as a risk management tool?*

(% of total respondents who chose each risk type)



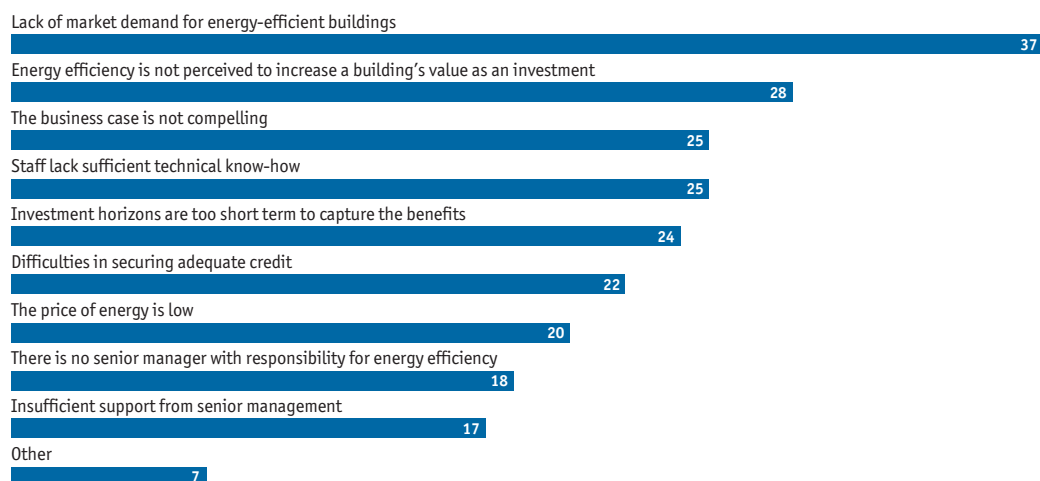
*5% did not answer.

Source: Economist Intelligence Unit survey, June 2012.



Lack of market demand hampers energy efficiency

In your company, what are the biggest obstacles to energy efficiency investments?
(% of total respondents who chose each risk type)



Source: Economist Intelligence Unit survey, June 2012.

much bigger part of those costs.”

Energy efficiency can also be used to mitigate risk. A majority of companies are treating their investments in this way, according to the survey (69%). And while the range of risks being addressed is broad—from energy price risks and changing market demand to prospects for future climate change legislation—the fact that companies view energy efficiency as a risk management tool suggests that the sector is considering these investments in a broader strategic context.

Syed Mohamed Beary, chairman of the Bearys Group, an Indian property construction, development and project management firm, emphasises that the occupants of highly energy-efficient buildings will do well in the face of escalating energy costs or tighter carbon emission legislation. These are key areas of potential risk mitigation cited by our survey respondents.

Some residential property owners, such as Grainger, one of the UK's largest listed residential property owners, have stressed that the structure of their business, where tenants control the majority of utilities, makes them less likely to consider energy efficiency as a risk management tool than their peers in the commercial real estate sector. This is echoed in our survey findings:

commercial real estate respondents cite energy price risks more frequently (37%) than the other respondents (26%).

For some executives, having energy-efficient buildings gives their company a significant edge over competitors. This is partly because the corporate sector increasingly wants to be seen as environmentally responsible—including in its choice of offices. “A lot of our customers, whether domestic or international, have their own corporate sustainability initiatives,” says Jeff Schwartz, co-founder of Global Logistic Properties, one of Asia's largest providers of logistics facilities, with properties in China and Japan. “So all things being equal, if we have an opportunity to lease an energy-efficient building, that gives us a competitive edge.” Location, cost and zoning regulations remain crucial factors in real estate investment decisions, but occupant comfort and productivity are gaining importance. Sustainable buildings can play a role in this area as well.

Beyond the inherent advantages of energy efficiency, green certification can be a plus. British Land, a UK property investor and developer, has achieved BREEAM (Building Research Establishment's Environmental Assessment Method) “Excellent” ratings for all its office

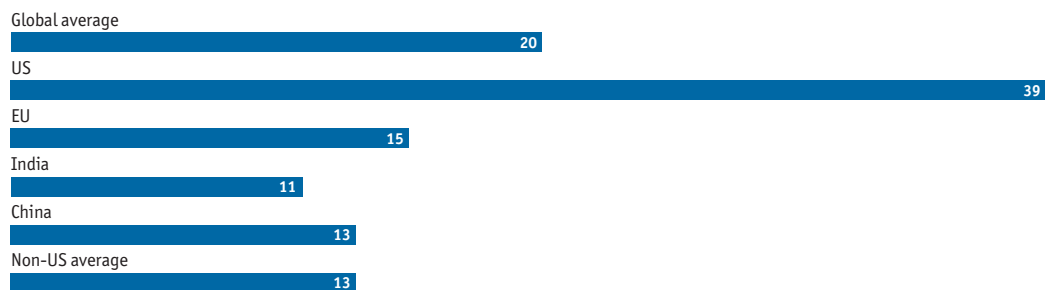
“So all things being equal, if we have an opportunity to lease an energy-efficient building, that gives us a competitive edge.”

Jeff Schwartz, Co-founder,
Global Logistic Properties



Cheap energy costs create challenges for efficiency in the US

In your company, what are the biggest obstacles to energy efficiency investments?
(% of respondents who selected "The price of energy is low")



Source: Economist Intelligence Unit survey, June 2012.

developments and two retail developments. The head of the company's Business Group, Justin Snoxall, thinks this kind of rating—as well as standards such as the US Green Building Council's LEED (Leadership in Energy and Environmental Design) certification—sends a powerful signal to potential clients. "We have found that, particularly with our office portfolio, many occupiers have chosen our spaces in part because of their sustainability credentials," he says. "It is an important marketing tool." Energy conservation can play a significant role in these initiatives.

Not all companies have clients clamouring to occupy clean, green offices or residential apartments, of course. Lack of market demand for energy-efficient buildings is the number-one barrier to investments, cited by 37% of survey respondents. Sluggish demand is particularly acute in India (41%). Mr Beary reports that in the first phase of his company's move into green buildings, the higher-than-market-rate rents achieved do not yet cover all construction costs. "Phase one is not really a profitable venture for us," he explains. "But we are sure that in phase two and three, we

should cover all our costs, because when the market realises the benefits of green building, we will have an edge over others."

Other factors dampening companies' enthusiasm for energy conservation measures include the price of energy. When costs are high, companies find it easier to argue the case for energy efficiency measures. For example, in Europe, only 15% of respondents cite cheap energy as an investment barrier. For companies in the US, where prices are frequently lower in light of the shale gas boom, the story is very different: 39% cite this as an obstacle.

Despite these barriers, energy efficiency is now an important consideration for most (63%) companies in the sector. This is especially the case for companies that see themselves as financially successful. Energy is a major factor in investment decisions for 72% of those who rate their company as outperforming its competitors, compared with 56% of all other respondents. This may be a virtuous circle: financially successful firms are more likely to invest in efficiency, but efficiency is also an ingredient in their financial success. ■

2

Beyond the basics: new energy efficiency measures and practices

“We use a lot of natural lighting in our construction through clerestories or skylights... We are also investing in intelligent building systems that turn lights off and adjust temperatures based on the level of use.”

George Caraghiaur,
Simon Property Group

Companies are targeting a range of practical measures to lower building energy use, from lighting to HVAC. Upgrading this equipment pays off relatively quickly. Yet an argument can be made for looking beyond these low-hanging fruit.

New lighting technologies have certainly proved a cost-effective investment. Lighting improvements top the popularity list of energy efficiency measures and 57% of respondents say their company has adopted them. This focus on lighting is unsurprising—payback periods are quick and lighting accounts for up to 40% of a company’s total electricity bill, according to the Carbon Trust,

a UK government-funded consultancy.

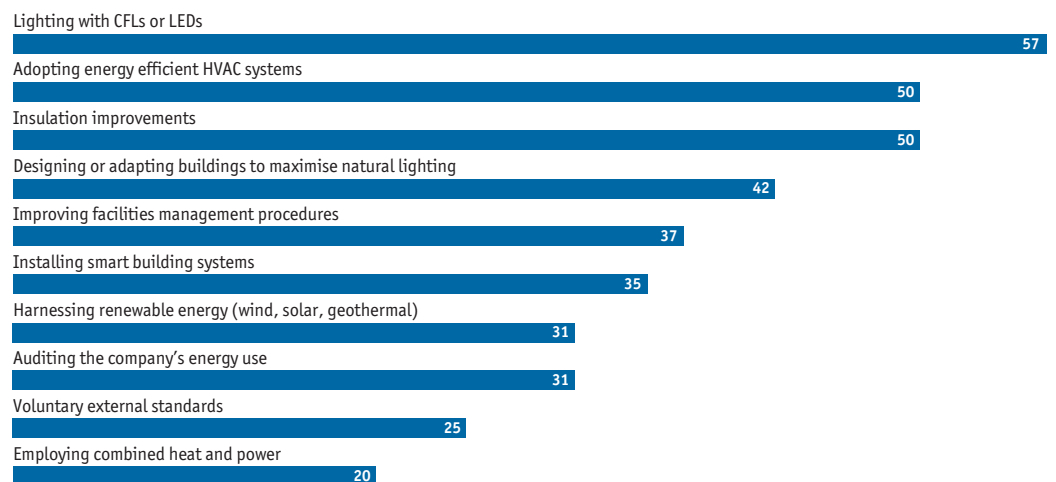
Companies can now tap into a range of technologies beyond compact fluorescent lamps or light emitting diodes (LEDs). Mr Caraghiaur cites everything from advanced dimmable electronic ballasts to photo-sensors and wireless controls that operate the lights in parking lots. “We are also investing in intelligent building systems that turn lights off and adjust temperatures based on the level of use,” he says.

Addressing lighting does not mean only purchasing new equipment, however. Maximising natural light is another way of cutting lighting



Lighting is just one measure as companies invest in energy efficiency

What energy efficiency measures is your company currently undertaking in new or existing buildings?
(% of respondents who chose each option)



Source: Economist Intelligence Unit survey, June 2012.

energy costs (42% of companies are focusing efforts on this area). To take advantage of daylight, building designers need to consider everything from where to site buildings to how to create roof openings that maximise the inflow of daylight. “We use a lot of natural lighting in our construction through clerestories or skylights,” explains Mr Caraghiaur.

The scope of adoption varies widely across companies and geographies. Mr Schwartz highlights that all of Global Logistic Properties’ facilities in China either already employ skylights to reduce daytime energy consumption or are currently building them. The company uses these more rarely in Japan, but it is exploring options to install solar panels in roughly 20 of its facilities. In contrast, Peter Couch, chief operating officer of Grainger, has expressed interest in using more sunlight in both new buildings and retrofits, but has taken no action to roll out a large-scale

investment in daylight harvesting. He points to regulatory uncertainty and a lack of long-term government commitment as the primary obstacles.

While the case for lighting is compelling, efficient heating, cooling and ventilation are also an area of substantial potential savings. Companies are responding, improving their HVAC equipment (50%) and building insulation (50%). Over one-third (35%) of respondents say their company is investing in smart building systems.

New technologies and systems—from the ability to adjust lighting levels for individual users to a range of automated and wireless controls—mean companies can do more than reduce their emissions. They can also improve quality of life for building occupants. But if they do not look at how different systems interact and how to persuade users to change their behaviour, the building sector may miss both business and climate change mitigation opportunities. ■

3

Smart energy management and business strategies

Whatever the energy-saving strategy, energy management is as important as technology. Nearly four in ten survey respondents say their company is working to improve facilities management procedures. A similar percentage is investing in smart systems to improve operations.

As energy efficiency becomes more widely accepted, companies are seeing their investments in a more holistic way, taking a longer-term view of investments. This gives cause for optimism. When companies move beyond equipment upgrades and integrate energy management into their business models, the potential energy savings increase

dramatically.

There is evidence that this is happening: companies are becoming more flexible towards energy efficiency investments, often tolerating longer payback times. For fully one-half of respondents, the maximum payback time is five years or longer. Although one-quarter will only accept one- or two-year paybacks (a timeline that corresponds with previous research), nearly as many (18%) have payback periods of ten years or more. Europe and China stand out: 30% and 19% of respondents, respectively, say their company tolerates payback periods of more than a decade.

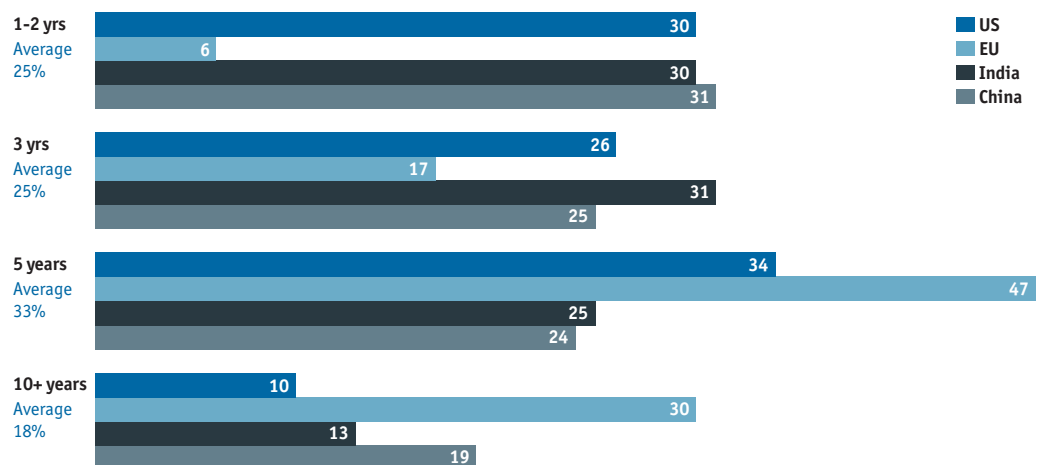
“
If we are doing a new development, energy efficiency would be considered as part of the entire cost of the project.”

”
Peter Couch, Chief Operating Officer, Grainger



Longer payback periods on energy efficiency projects become more acceptable

What is the maximum payback period acceptable to your company when deciding on energy efficiency investments?
(% of respondents)



Source: Economist Intelligence Unit survey, June 2012.

This may vary according to the type of project. "For Vinci, it also depends on the operation period," says Maxime Trocmé, the French construction company's head of sustainable development. "For example, Vinci Facilities operates equipment over short contractual periods (less than five years generally); in a PPP (public-private partnership), the return on investment period may be longer."

Often, energy efficiency investments can be fused with general improvement expenses, making it easier to find financing for efficiency measures when they are part of an overall retrofit budget. "If we are doing something today and it saves us money in the future, we don't impose an ROI threshold across the board on investments in energy efficiency," states Mr Couch. "And if we are doing a new development, energy efficiency would be considered as part of the entire cost of the project."

In this broader approach to energy efficiency, the human element is critical. "More than two-

thirds of the savings that can be achieved in energy efficiency in any corporation comes from human behaviour," says Mr Caraghiaur. "And that is a very conservative number."

The human side of energy efficiency requires a multi-pronged strategy, however. To obtain the best performance from equipment, facilities managers must set it up and operate it properly. Equally important is changing the behaviour of building occupants, fine-tuning temperature levels and ensuring that equipment is switched off or unplugged when not in use. This may require new relationships between landlord and tenant.

Yet even before reaching this stage, companies need to sell the concept of energy efficiency internally. "No one misses a saving that is not there," says Mr Caraghiaur. "And there is no risk in continuing spending on something that people don't know can be saved. So the first step is to spread knowledge about the potential impact and importance of energy efficiency." ■

4 Gap in knowledge of energy realities

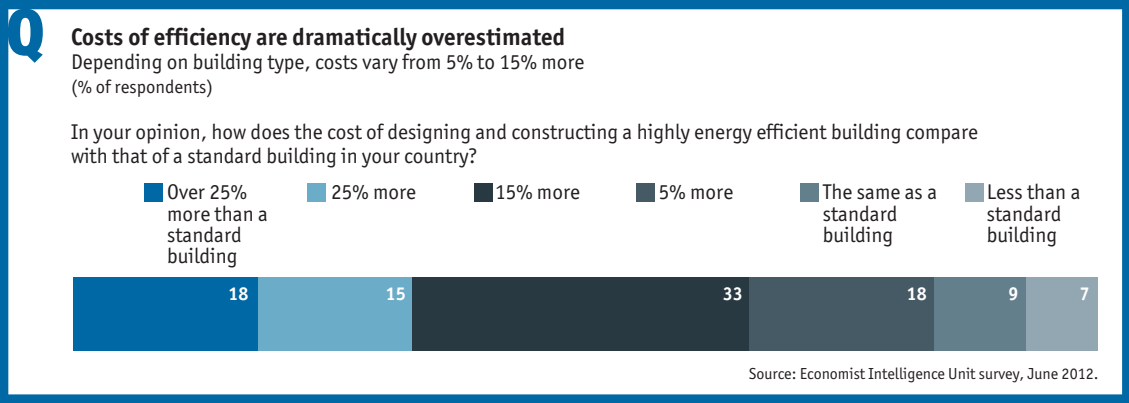
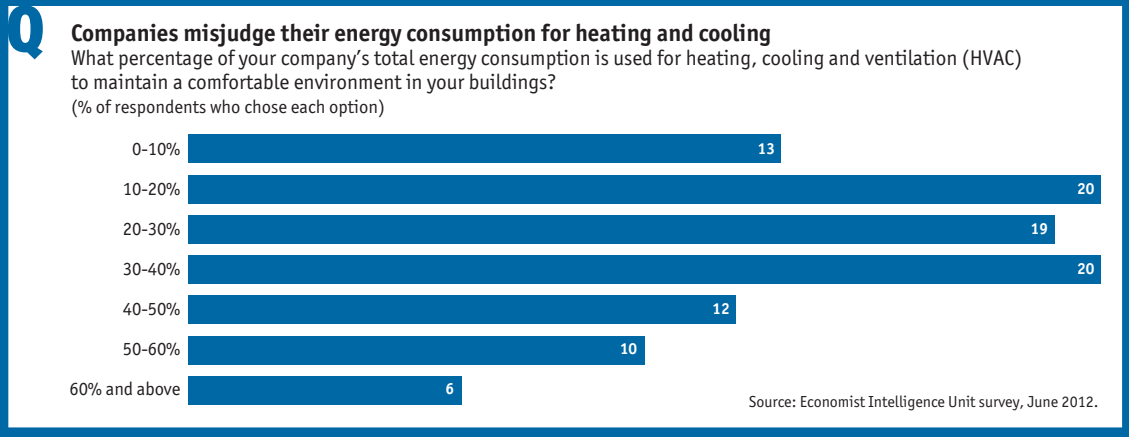
“I’m driving across Asia-Pacific a complete platform from air-conditioning to heating to lighting—every measure that makes it possible to save energy.”

Kenneth Fong, Asia-Pacific Director of Engineering Operations, Hilton Worldwide

Compared with the complexity of emissions trading or investments in renewables, energy efficiency is a relatively simple carbon-reduction strategy. It is therefore surprising that senior executives in the real estate and construction sectors remain poorly informed about energy realities.

One-third of surveyed building sector executives

significantly underestimate the energy cost of their heating and cooling use. According to building energy experts, heating and cooling account for between 20% and 60% of total energy use in a building, depending on a building’s efficiency. Yet a sizeable minority (33%) of respondents say it accounts for less than 20%. Companies are not only



misjudging energy expenditure, but they are also unclear about the costs of efficiency investments. Two-thirds of respondents say that energy-efficient buildings cost 15% or more to build than a standard structure, and 18% estimate the difference as more than 25%. The actual cost varies by building type, climate and expertise, but should fall between 5% and 15%.

It is unsurprising that companies are doing little to track consumption given misconceptions

of energy costs. Only 31% audit energy use and just 7% cite energy audits as highly influential in their decisions to invest in efficiency measures. Furthermore, only a minority of companies (25%) adhere to externally audited standards such as LEED or BREEAM, which provide guidance on audits. Companies may be missing an opportunity, since tracking energy use across an enterprise is often the best first step towards controlling energy use.

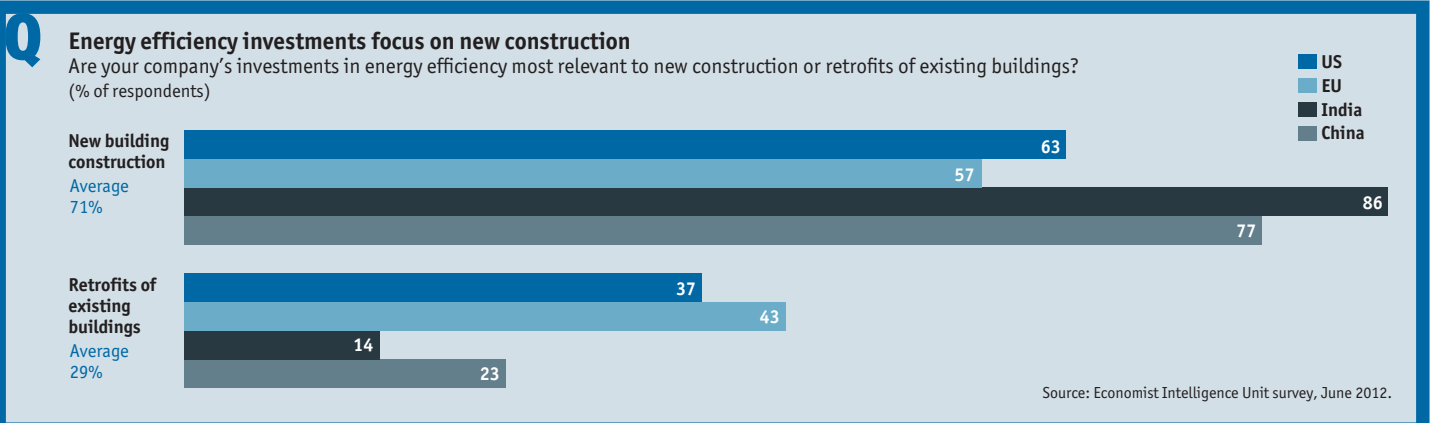
New versus old: energy efficiency in existing buildings

Existing buildings are responsible for the lion's share of energy use. Since older buildings are generally less efficient than new structures, increasing the rate of retrofitting offers a substantial opportunity for policymakers to profitably advance low-carbon objectives. Because retrofits get less attention than new, green buildings, however, this is not an easy goal to achieve.

Most companies (71%) are investing more heavily in energy efficiency for new buildings than in retrofits. Surprisingly, this is the case worldwide. Emerging markets are experiencing rapid construction and growth, so this emphasis is to be expected. What is unexpected is that energy efficiency efforts in the US and Europe—highly urbanised markets with relatively low volumes of new construction—are also focused on new buildings. This is problematic because less efficient buildings will continue to waste energy for a long time to come. In New York, structures in place today are still expected to make up 85% of the city's buildings in 2030. In India and China, in contrast, much of the building stock that will be standing in two decades is yet to be built.

The fact that companies are focused on new construction is somewhat understandable as the investment can be more easily amortised over the lifecycle of the building. Fitting a structure with the latest energy-efficient heating and cooling systems, high-performance windows and insulation is far easier when starting on a new project than when dealing with an existing structure. In older or historic buildings, means of entry can limit the size of equipment that can be brought in. Moreover, in existing buildings, it may be necessary to work while parts of the building remain occupied.

What is needed to get the buildings sector to turn inefficient buildings into structures that save energy and contribute to carbon emissions reductions? Policymakers can help by implementing measures that remove obstacles to retrofitting projects. These might include facilitating the contracting out of efficiency retrofits to energy service companies, streamlining project approval procedures or providing technical assistance. Coming up with the right incentives will require careful thought, and measures may need to be adapted to individual markets and climates. ■



Ignorance of energy realities persists in the sector. Yet leading companies are becoming better informed of the costs and are harnessing the benefits of efficiency investments. In fact, costs have fallen dramatically. "I have focused on this for almost seven years," says Mr Schwartz. "And if you are building something to LEED Gold standard level, compared with a normal building, the incremental cost has probably dropped by half."

Technical and procurement expertise can further reduce costs even in the case of developing

countries where the market is nascent. "When companies don't have any knowledge about the supply chain, the additional cost [of a green building] is 12% to 18%," says Mr Beary. "But we are in the system and we know how to choose the right materials, so for us it is about 8% to 10%."

More knowledge of energy use prompts companies to go further in their measures to reduce consumption, including rigorous measurement of a business's energy footprint. In Asia-Pacific, for example, Hilton plans to engage a

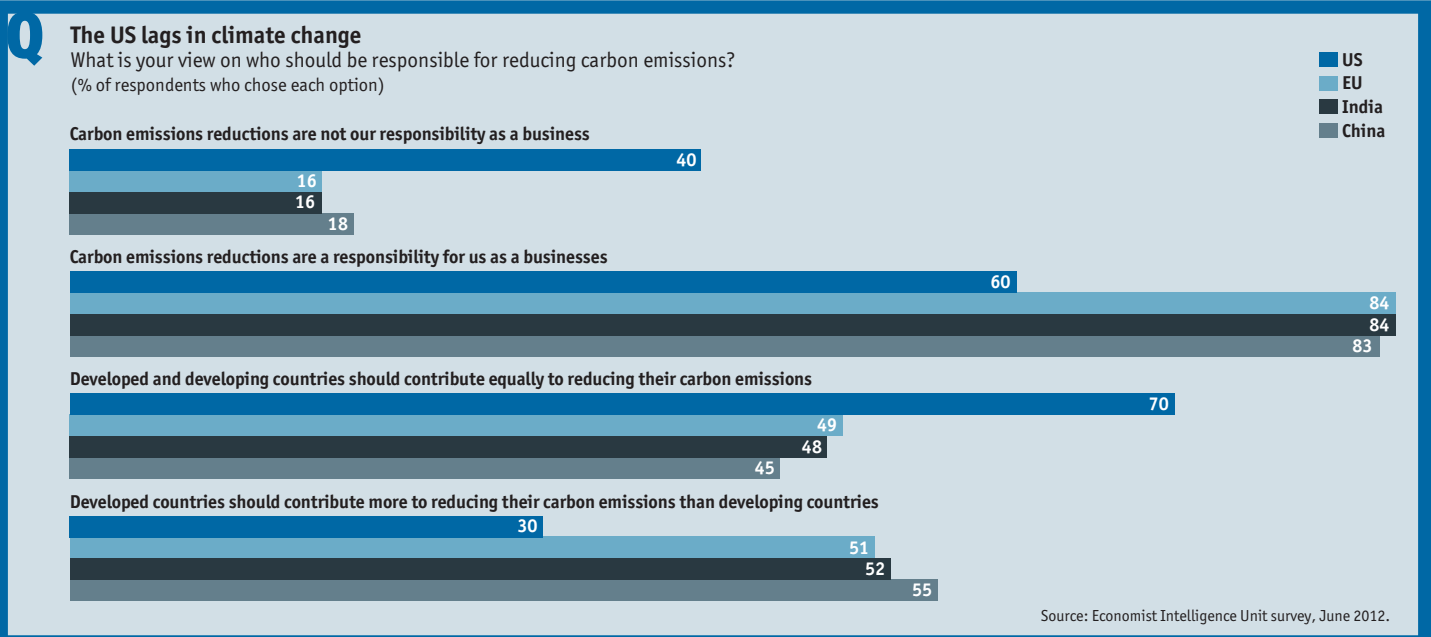
The US avoids addressing climate change

Soaring summer temperatures, severe storms and intense droughts are powerful evidence of the effects of climate change. Furthermore, a global consensus is emerging that addressing greenhouse gasses is a critical goal. The notable exception: the world's largest economy.

The US offers unique challenges. Forty percent of survey respondents from the building sector accept no business responsibility for carbon emissions. In Europe, China and India, 84% of respondents cite emissions reductions as an important business responsibility. The attitude of US respondents is mirrored in the country's political process and the relative weakness of energy efficiency legislation.

The US is also an outlier with regard to taking responsibility for its vast emissions to date. Only 30% of respondents believe that developed markets should contribute more to addressing climate change than the poorer developing economies. Respondents from Europe, India and China are more evenly divided: 50-55% acknowledge that developed countries should contribute more.

The question for policymakers becomes how to put energy efficiency more firmly on the corporate agenda. This is particularly challenging as the low price of natural gas and domestic supplies of fossil fuels reduce US energy imports for the first time in decades, thus pushing issues of energy security out of mind. ■



company to conduct an energy audit in all its hotels in the region. “I’m driving across Asia-Pacific a complete platform from air-conditioning to heating to lighting—every measure that makes it possible to save energy,” says Kenneth Fong, Asia-Pacific director of engineering operations at Hilton Worldwide.

Savvy companies are also taking advantage of the guidance that comes with working to a voluntary certification standard. In India, Tata Housing, part of the Tata Group, uses a certification developed by the Indian Green Building Council. “And all our projects are at least Gold-certified,”

says Brotin Banerjee, managing director and chief executive. In the UK, all Vinci facilities are certified under ISO 50001 (which requires implementing, maintaining and improving an energy management system). British Land uses the BREEAM certification system, while Global Logistic Properties uses the LEED standard to rate its buildings in Asia.

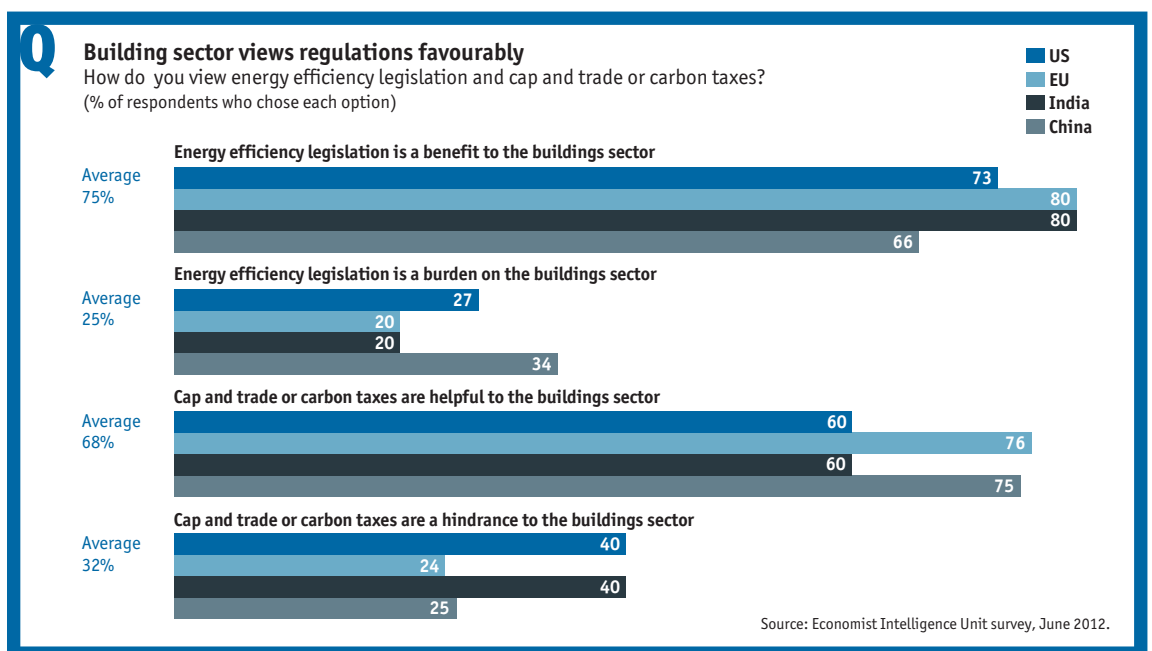
The experience of these companies suggests that greater use of mandatory energy audits by policymakers—or, as a first step, incentive programmes to help cover auditing costs—would influence the sector’s approach to energy efficiency. ■

5 Carrots and sticks: companies welcome legislation

The good news is that companies generally favour legislation. Many see it as a means of levelling the playing field, thus strengthening the business case for energy investments. Others are looking for clarity and certainty before investing. A positive view of regulation makes it easier for governments to use policy tools to advance efficiency goals. The challenge will be to provide the kinds of tools that promote, rather than hinder, corporate action to increase building energy efficiency.

The time is ripe for regulation. Current energy efficiency legislation benefits the buildings sector,

according to 75% of survey respondents, while 34% say a lack of enforcement of existing regulations is a leading obstacle to investments in efficiency. Most (68%) see cap-and-trade or carbon taxes as helpful, and the same proportion believes that global agreements limiting carbon emissions would create a level playing field for businesses. Mr Fong of Hilton Worldwide agrees. "To get things moving at a faster pace and for everyone to buy into this, governments must press for it as mandatory or impose penalties for not complying with certain energy levels," he says. "That is when



“Governments need to understand how they can influence the market.”

Justin Snoxall, Head of the Business Group, British Land

things will be a lot easier for us.”

Regulations can also help to shape corporate expectations. While few survey respondents consider climate change-related legislation a major risk, senior executives interviewed for this report say that the prospect of such legislation is a driver of energy efficiency investments. “By planning and responding, you are getting ahead of the game—the game being that this legislation will come in,” says Grainger’s Mr Couch.

Monetary incentives are the most popular form of regulation. But while many companies favour tax rebates and grants, expedited permitting for energy-efficient buildings can be a significant non-financial incentive, particularly in the commercial segment.

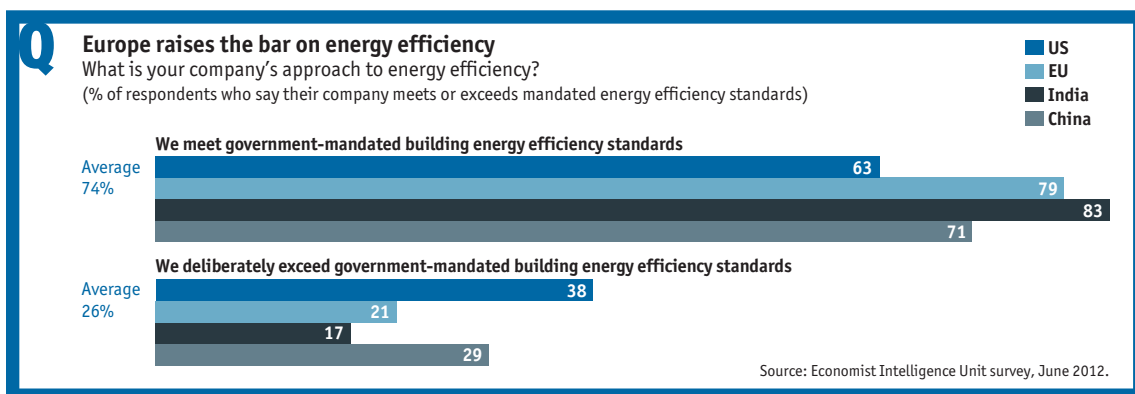
Despite the general acceptance of regulation, not all of it is considered effective. “Legislation can be a clumsy tool,” warns Mr Couch. Mr Snoxall agrees. He argues, for example, that mandatory building efficiency ratings are only effective if sub-metering is also introduced. “If you are going to improve efficiency in buildings, you have to understand at a granular level how buildings are operating,” he says. “But if you can’t report individual tenants and landlord-influenced areas of a building, you are never going to get to grips with this.”

Absence of regulation can be as much of a barrier as poorly designed measures, notes Mr

Banerjee. “The industry lacks a universal definition of what constitutes a green building as well as consistent data sources and metrics on green buildings,” he says. “This makes implementation of green projects difficult and therefore the sector does not contribute as much as it should to controlling CO₂ emissions.”

This suggests that policymakers need to think carefully about both the appropriate areas to target with regulation and the best way to craft energy-related policies. This might mean, for example, combining requirements for efficiency levels with incentives to invest in sub-metering. “Governments need to understand how they can influence the market,” says Mr Snoxall.

There is clear evidence that legislation can in fact shape market behaviour. This is demonstrated most powerfully in Europe, where strict standards have led a large proportion of companies (49% of respondents) to audit their energy use. The European experience suggests not only that policymakers can use regulatory tools to promote energy efficiency investment, but also that by combining mandates with incentives, they can facilitate competition for higher-efficiency buildings. More Europeans (38%) deliberately exceed government standards, compared with only 23% in other regions. Policymakers’ challenge is to identify the right carrots and sticks—those likely to maximise their influence on market behaviour. ■



6

Conclusion

Companies have come a long way in their approach to energy efficiency. Most are tackling their energy footprint with measures to improve HVAC and lighting. And many are going further—incorporating energy consumption into their overall strategy, including it in risk management and taking a longer-term view of their investments. Yet both the private sector and policymakers can do much more.

To start, the buildings sector needs to better understand its energy consumption and potential reductions. This requires knowledge of the cost of energy investments, adoption of auditing and potentially the use of voluntary standards audited by third parties. Companies also need to do more to enhance the efficiency of existing structures. Government, in turn, can do more to raise consumers' awareness of the social and economic advantages of low-energy buildings, thus stimulating market demand.

Increasingly sophisticated technologies and systems can help to remove many of these barriers and increase the return on investments in efficiency. IT-enabled energy systems can create buildings that are not only more efficient but are

also healthier and more pleasant places in which to live or work. For both owners and tenants, this not only lowers electricity bills—it also lowers absenteeism and helps to attract top talent.

Policymakers can play an important role in shaping energy use in the real estate and construction sectors. Measures could include wider use of mandates, auditing, incentives for sub-metering and the introduction of building performance ratings systems. But incentives can only go so far. While the survey shows that most companies prefer carrots, at some point governments also need to wield the stick.

Striking the right balance between incentives and restrictions is not easy. Excessive red tape and mixed messages are costly to business and slow the adoption of more efficient technologies. The market needs clear long-term signals, rational expectations and opportunities for a reasonable return on investment. But with buildings responsible for such a large proportion of global greenhouse gas emissions, it is a task that should be embraced with urgency by both governments and the private sector. ■

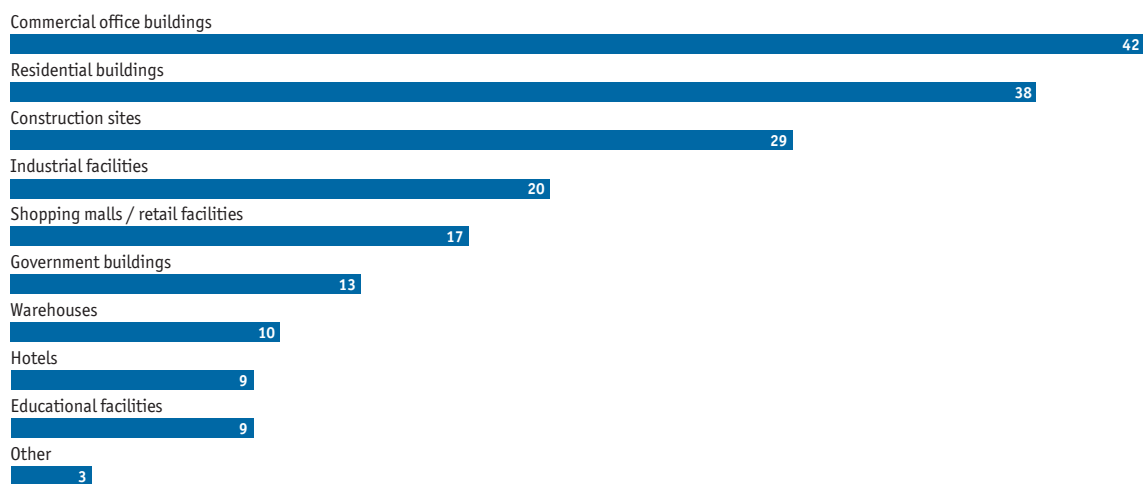
Appendix: survey results

Percentages may not add to 100% owing to rounding or the ability of respondents to choose multiple responses.

What kind of buildings are responsible for the largest share of your company's total energy consumption?

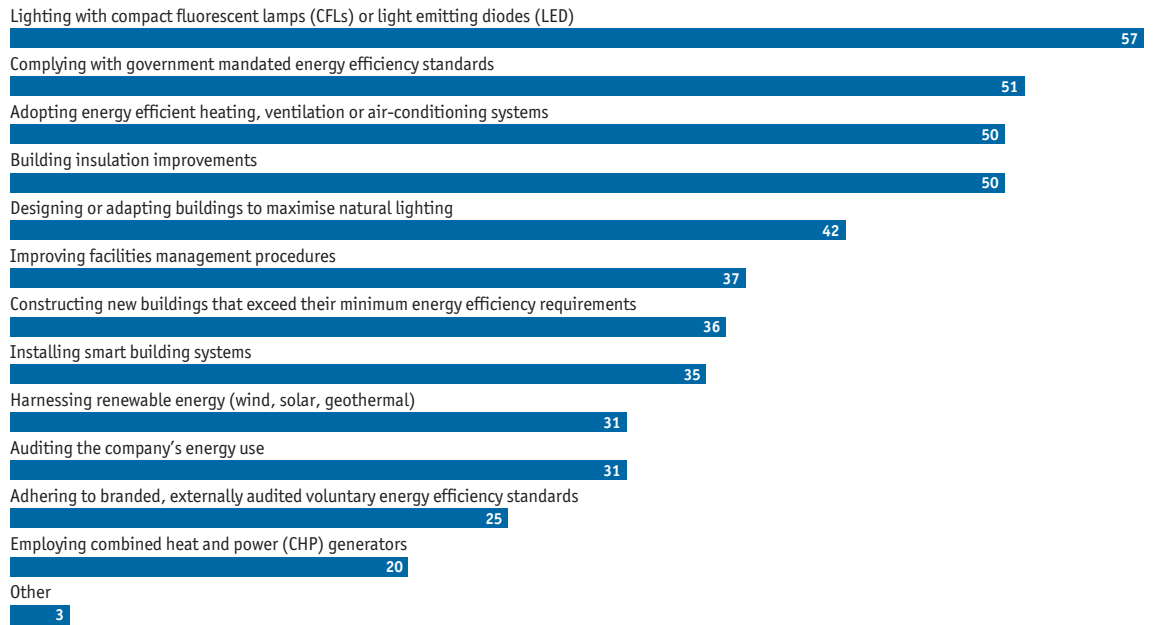
Select up to three.

(% respondents)



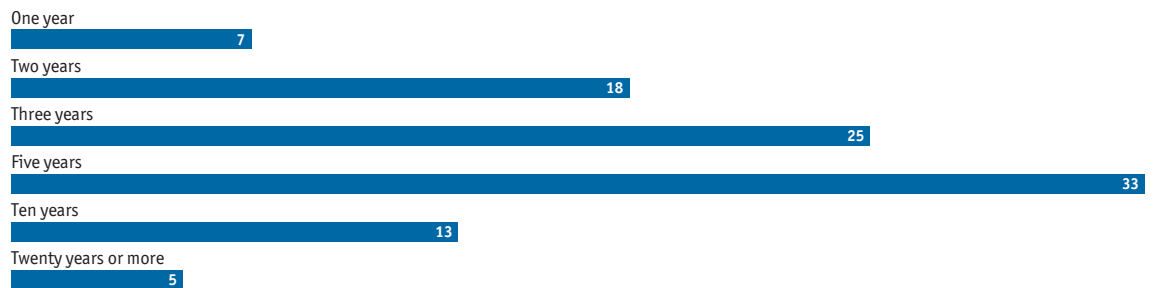
What energy efficiency measures is your company currently undertaking in new or existing buildings?

Select all that apply.
(% respondents)



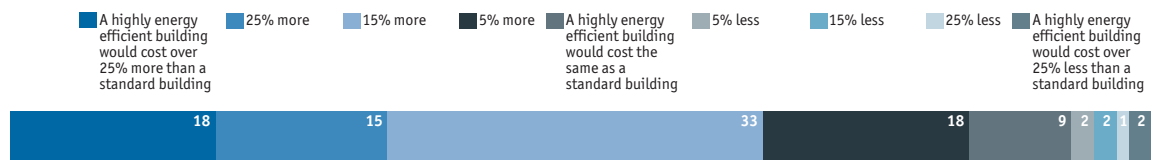
What is maximum payback period acceptable to your company when deciding on energy efficiency investments?

(% respondents)



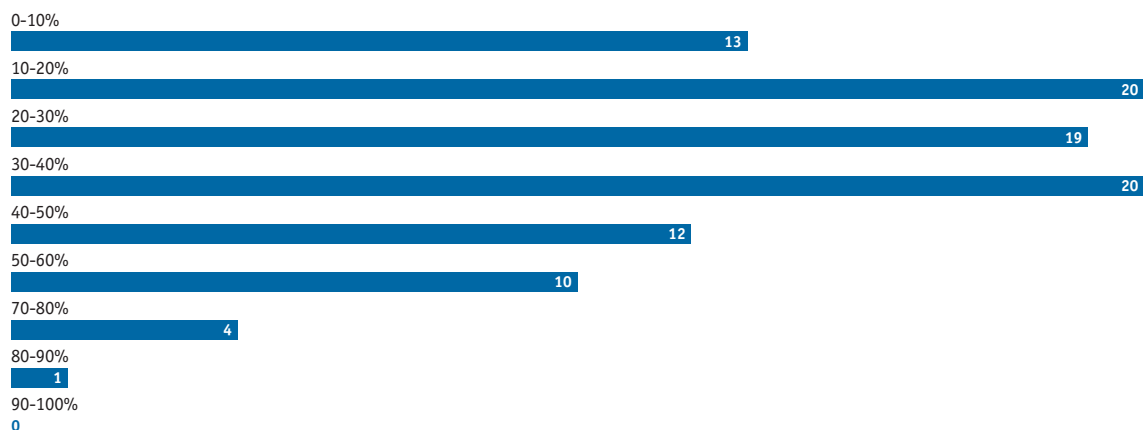
In your opinion, how does the cost of designing and building a highly energy efficient building compare with that of a standard building in your country?

(% respondents)



What percent of your company's total energy consumption is used for heating, cooling and ventilation (HVAC) to maintain a comfortable environment in your buildings?

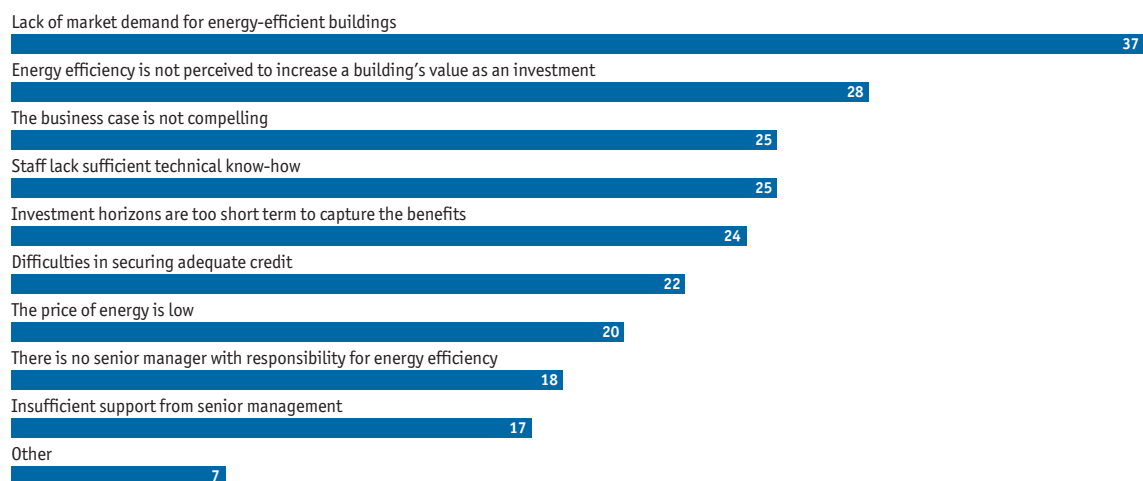
(% respondents)



In your company, what are the biggest obstacles to energy efficiency investments?

Select the top three.

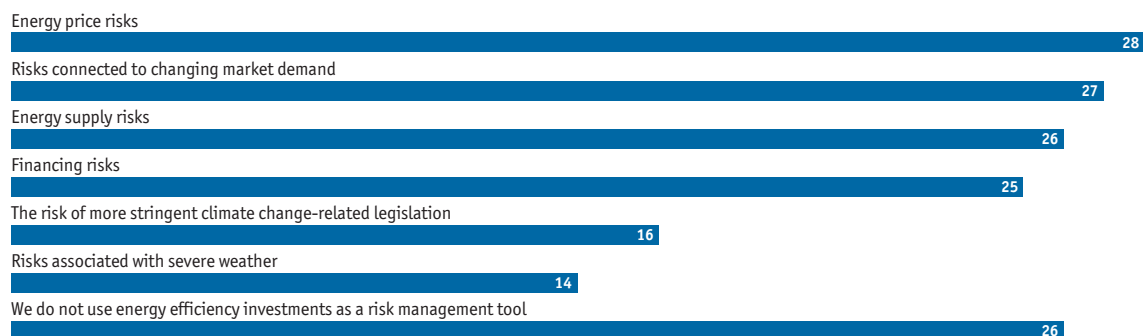
(% respondents)



How does your company use energy efficiency investments as a risk management tool?

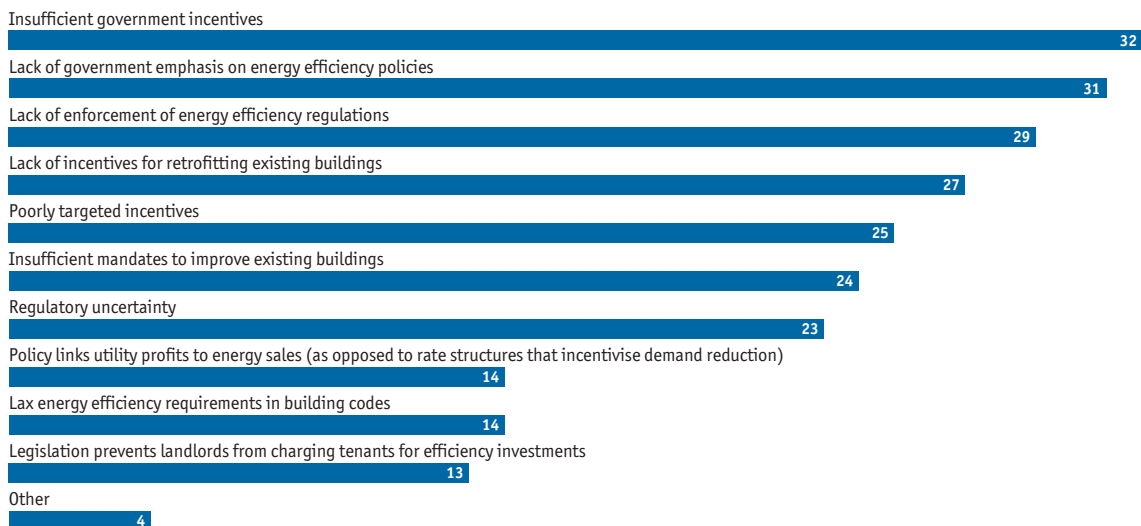
Select all that apply.

(% respondents)



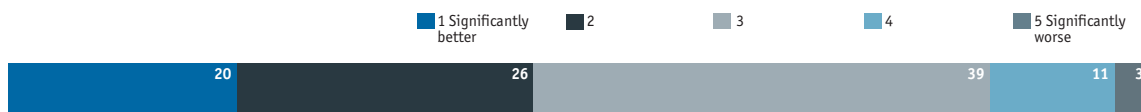
In the country in which you are based, what are the biggest policy barriers to energy efficiency in the buildings sector?

Select the top three.
(% respondents)



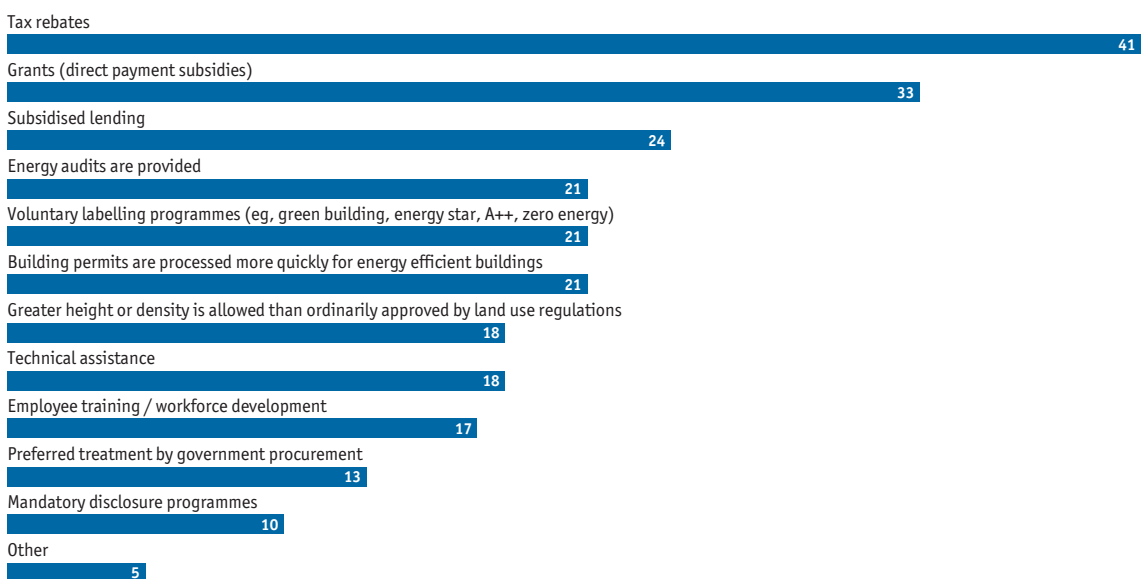
How would you rate your company's financial performance in the last 12 months?

Rate on a scale of 1 to 5 where 1=Significantly better than your competitors and 5=Significantly worse.
(% respondents)



Which of the following incentives for building energy efficiency are offered by government (at the local, state, provincial or national level) in the country you are based?

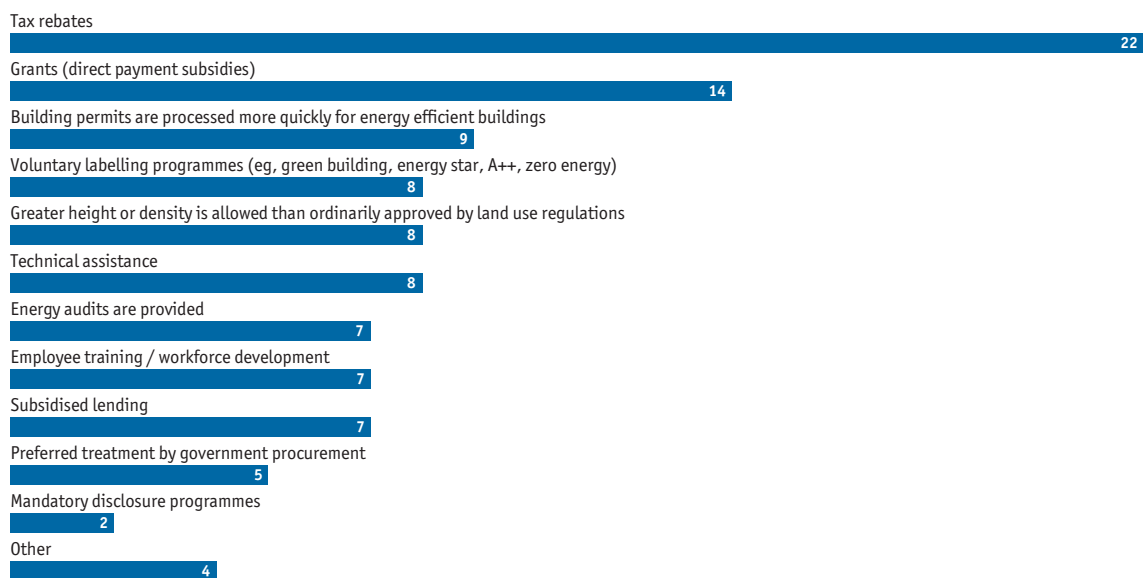
Select all that apply.
(% respondents)



Of the incentives offered by government (at the local, state, provincial or national level) which has your company used in the last twelve months on a new building or major renovation?

Select all that apply.

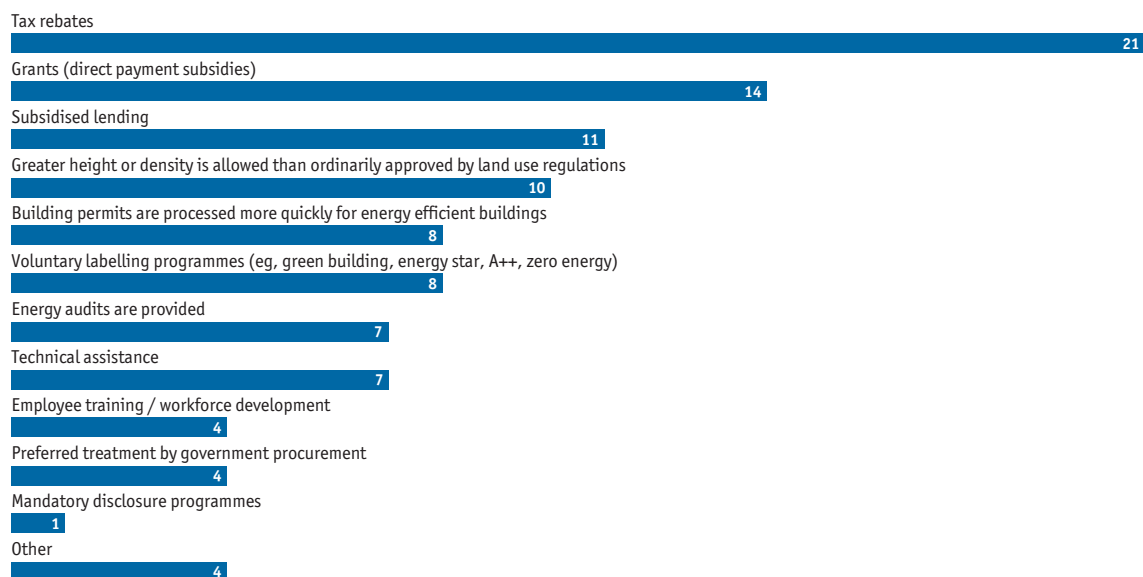
(% respondents)



Of the incentives offered by government (at the local, state, provincial or national level) which does your company employ most frequently when investing in a new building or major renovation?

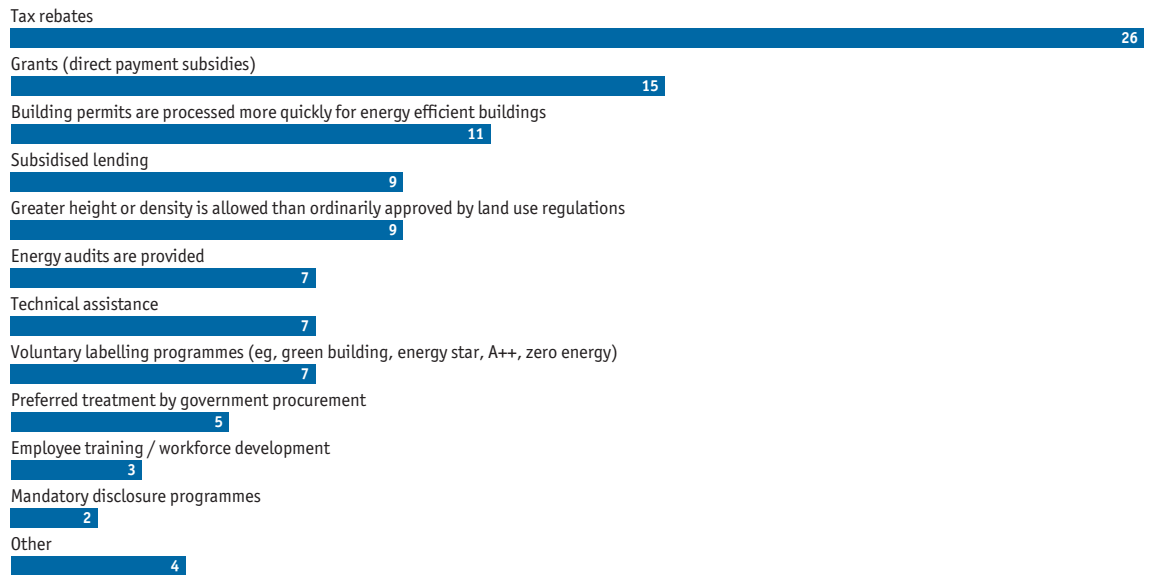
Select the top three.

(% respondents)



Of the incentives offered by government (at the local, state, provincial or national level) which are most influential on your company's decision to invest?

Select the top three.
(% respondents)



How strict are government requirements (at the local, state, provincial or national level) for energy efficiency in the country in which you are based compared with international standards?

(% respondents)



Please indicate your level of agreement with the following statement: "Government incentives are a major driver behind my company's energy efficiency investments."

Please rate on a scale of 1 to 5 where 1=Strongly agree and 5=Strongly disagree.
(% respondents)



How important have government energy mandates been for your business when considering new buildings or major renovations?

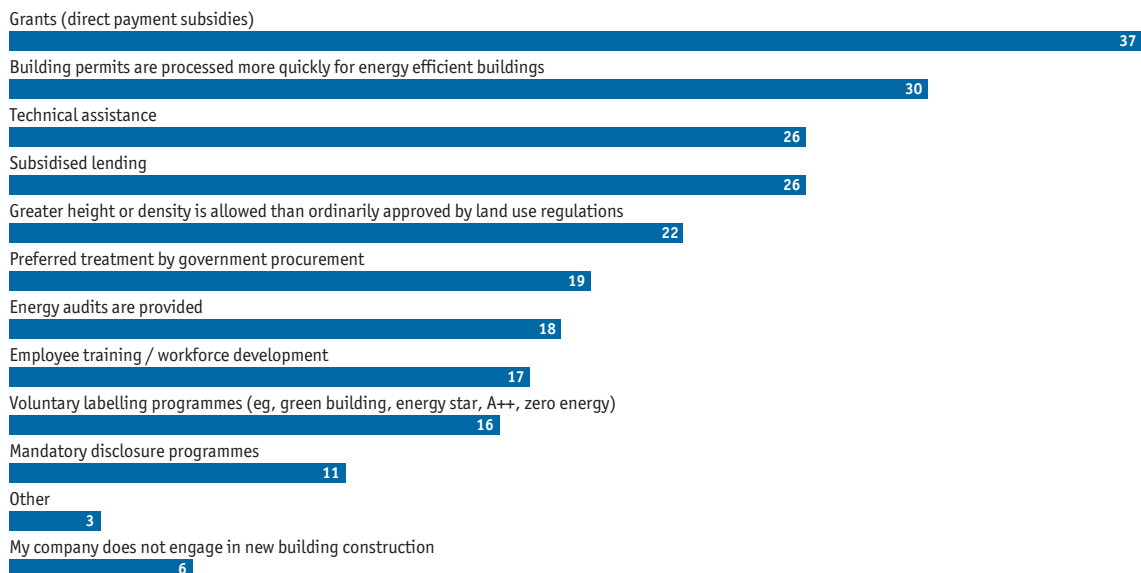
Please rate on a scale of 1 to 5 where 1=Extremely important and 5=Extremely unimportant.
(% respondents)



What incentives would make your company exceed the level energy efficiency demanded by building codes for new construction?

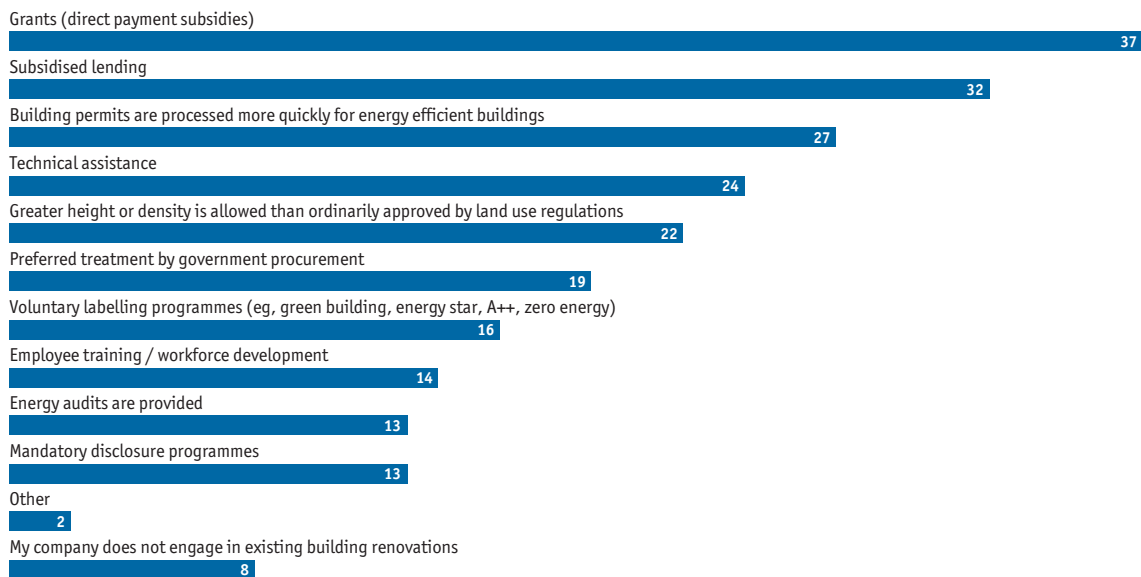
Select the top three.

(% respondents)

**What incentives would be most important for your company to invest in major energy efficiency renovations?**

Select the top three.

(% respondents)



Select the statement that best describes your company's approach to energy efficiency.

Select one statement from each pair.
(% respondents)



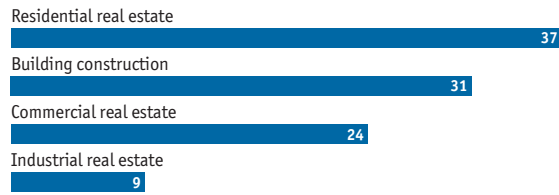
Select the statement that best describes your perspective on wider issues of government regulation and the environment.

Select one statement from each pair.
(% respondents)



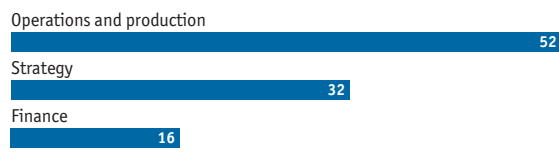
What is your primary industry?

(% respondents)



What is your primary function?

(% respondents)



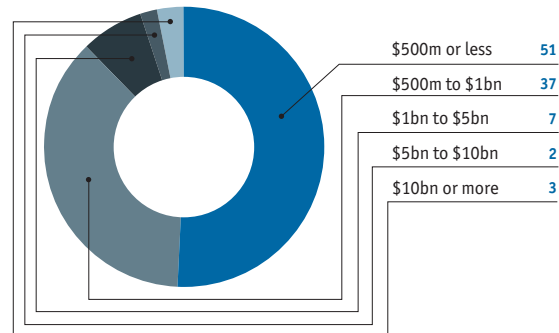
Where are you personally based?

(% respondents)



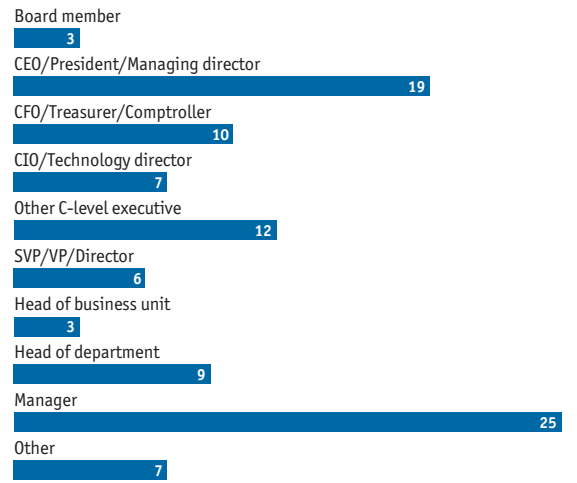
What are your company's annual global revenues in US dollars?

(% respondents)



Which of the following best describes your title?

(% respondents)



About Global Buildings Performance Network

The Global Buildings Performance Network (GBPN) addresses the mitigation of GHG emissions from the building sector. It is a global partnership organisation that advances knowledge and expertise on building energy efficiency and performance. The GBPN operates a global centre based in Paris and four regional hubs in the US, Europe, China and India. Through its network, the GBPN helps decision makers and business leaders adopt best practice policies to achieve the abatement potential of the building sector.

Whilst every effort has been taken to verify the accuracy of this information, neither The Economist Intelligence Unit Ltd. nor the sponsor of this report can accept any responsibility or liability for reliance by any person on this white paper or any of the information, opinions or conclusions set out in the white paper.

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