Energy Efficiency Trends

Essential insight for consumers and suppliers of non-domestic energy efficiency

Includes special feature on Energy Performance Contracting
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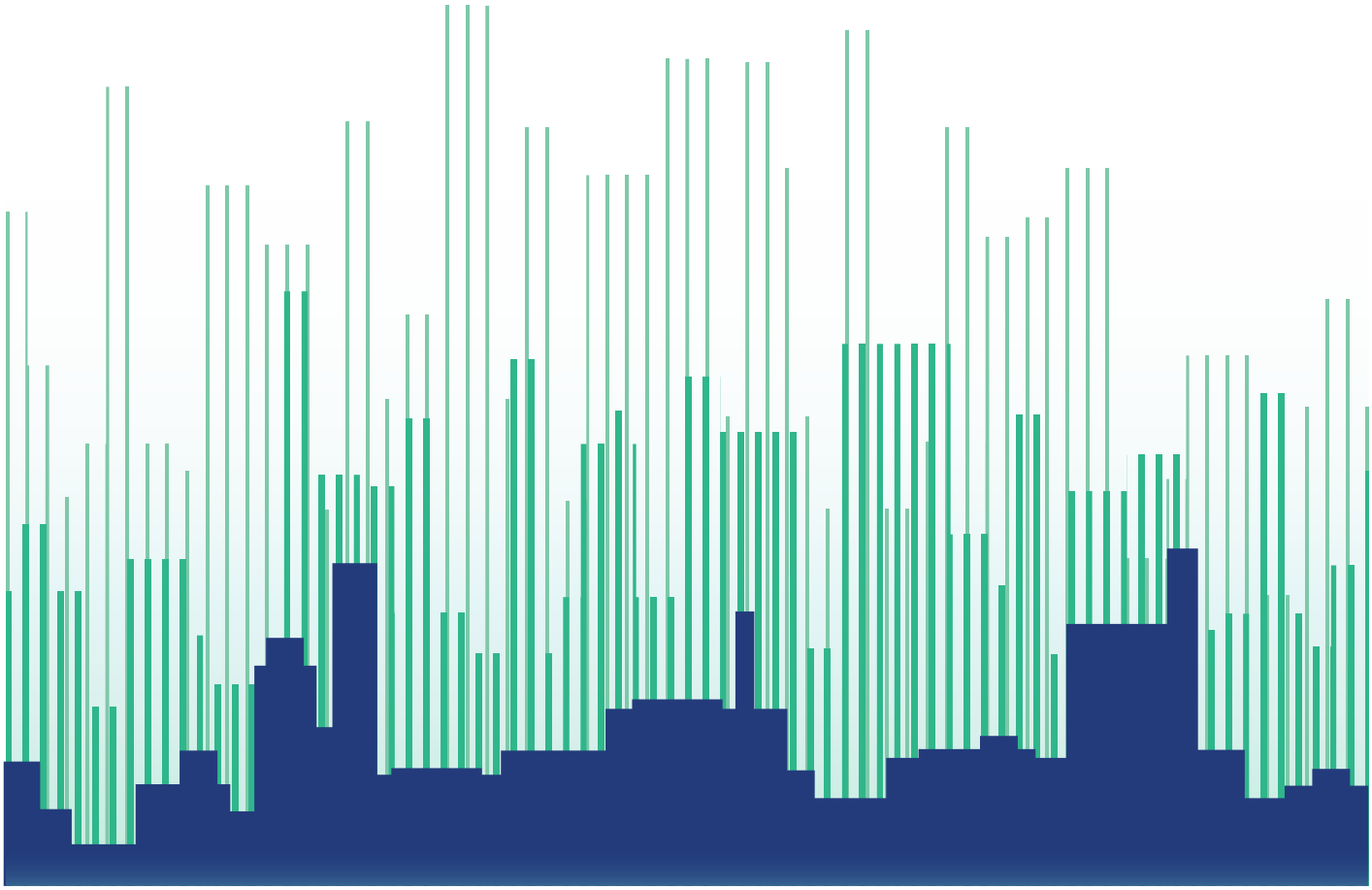


February 2013

About EEVS

EEVS is a leading global provider of independent performance information and analysis services for energy efficiency.

Our core service is high quality performance measurement and verification for energy efficiency projects, such as building retrofits or single technology installations. Since 2011 we have evaluated the performance of over 400 energy-saving schemes to the global good practice standard – the International Performance Measurement and Verification Protocol (IPMVP).

This impartial and good practice analysis is vital to the industry's development – enabling suppliers to prove their performance credentials, whilst giving consumers all-important comfort that they are getting value for money from their investments.

Our wider information services complement this project-level analysis and aim to support greater market transparency – improving the attractiveness of energy efficiency as an investment and accelerating the uptake of the best performing technologies and services.

For further details about EEVS and the services we provide, please visit www.eevs.co.uk

Preface

Welcome to the second instalment of Energy Efficiency Trends – collated survey feedback from energy efficiency consumers and suppliers, providing a balanced snapshot of the state of the non-domestic energy efficiency market today, as well as the outlook for the future.

For the benefit of first time readers, the main aim of the report is to monitor and track market activity, highlighting key changes and trends that occur over time. By doing so we hope to help suppliers better understand and respond to consumer needs, whilst helping consumers to gain better knowledge of the evolving market – and in so doing, hopefully remove a key barrier to entry.

We repeat the survey each quarter (March, June, September and December) and report the results soon after. This edition also includes a discrete section on the use of Energy Performance Contracting – a mechanism for financing transformational energy efficiency improvements.

Thank you once again to everyone who completed the survey – over 200 of you. Your efforts continue to make a valuable contribution to both our knowledge base and to improved industry transparency. I hope that you find this quarter's results useful and compelling.

Ian Jeffries, EEVS Insight

Survey results

quick facts & key trends this quarter

563 energy efficiency projects were deployed by 149 non-domestic consumers in the final quarter of 2012

That's c£115 million of new investment

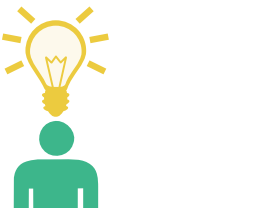
up

- **Strong Demand** – 7 out of 10 consumers continued to purchase energy efficiency products and services.
- **Industry Optimism** – 7 out of 10 suppliers expect positive growth for 2013.

- **Lighting** continues to be the industry-leading technology, accounting for 22% of all projects.

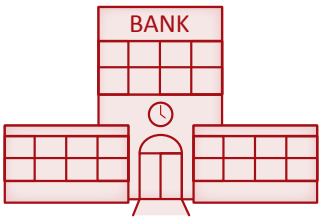
steady

- **Technological Choice** – consumers were able to choose and deploy 25+ energy saving technologies / measures.
- **Consumer Returns** – organisations continue to expect a high ROI and for projects to payback within 5 years.



down

- **Performance measurement** and verification of energy savings remains under-utilised and poorly understood by consumers.
- **Third Party Finance** continues to be largely unused by consumers who preferred in-house capital sources.



- **Energy Performance Contracting** has seen low take up. Uncertainty and low understanding were reported as key barriers.
- **Solar PV** – low levels of take up within this once-buoyant renewables sub-sector.

Executive Summary

The EEVS *Energy Efficiency Trends Survey* was conducted between 5 December and 27 January 2013. There were 214 respondents from a wide range of consumer organisations (149) and energy efficiency technology and service providers (65). The majority of respondents were UK-based, with a small number of responses from European territories.

Consumer Trends

- Commercial and public sector organisations have maintained consistently high take up of energy efficiency with 7 out of 10 commissioning energy saving initiatives in the last 3 months. Positively, 76% of respondents expected to commission further projects in the first quarter of 2013.
- Expectations for financial returns remain high, with 8 out of 10 organisations expecting their energy efficiency investments to payback within a maximum of 5 years.
- Once again, lighting is the most popular energy efficiency technology. Of the 563 projects commissioned in the last 3 months, lighting (high efficiency and controls) accounted for almost a quarter (22%). This trend looks set to continue.
- Offices and public buildings were the principal property types being upgraded (26% and 10%)
- Trends in project costs remain stable; 60% of projects cost less than £100,000, a material 19%, however, had capital costs exceeding £500,000.
- Funding trends have also remained steady, with the majority of energy efficiency projects (7 out of 10) continuing to be financed using in-house sources of capital. Third-party finance continues to experience load take-up by consumers (7%).
- Robust performance measurement remains an issue within the sector, with only 3 out of 10 projects incorporating good practice measurement and verification (M&V) of savings.

Supplier Trends

- Level of customer demand remains the biggest concern for almost half of supplier respondents (38%), although policy and subsidy concerns (17%) have also moved up the industry's agenda in the last 3 months.
- The industry was upbeat on growth prospects; 45% of suppliers reported outright growth in national orders in the last quarter (compared to 32% previously), with 70% expecting outright growth in home markets in the first part of 2013. Overseas orders were reported to be stable (54%) or growing (34%) and this trend is expected to continue.
- Following on from Q3 2012, no respondents reported a significant fall in head count in the last 3 months. By contrast, 9 out of 10 reported status quo (57%) or growth in staff numbers (32%). This cautious optimism is expected to continue into 2013 with no respondents reporting plans for significant growth in headcount in the short term.
- Low volatility in sale prices. Almost 7 out of 10 suppliers kept pricing unchanged in the last quarter. This status quo trend is expected to tighten further into 2013 and no major price fluctuations are expected.
- Support for government action remains limited, with only 2 out of 10 respondents considering governments to be effective in relation to energy efficiency and the wider economy.

Special Feature – Trends in Energy Performance Contracting

- Only 20% of customers reported using Energy Performance Contracts (EPC) in the last year.
- Looking ahead, this trend is set to continue with only 16% of consumers planning to undertake an EPC in 2013. More positively, consumers are prepared to be convinced, with 45% reporting that they are as yet undecided. Issues around uncertainties over value for money (21%), poor understanding of the benefits (21%) and perceived contract risk (16%) were reported to be holding consumers back.
- Reflecting this low take up, almost a third of active EPC suppliers reported that they had not delivered a single project in the last year, whilst almost half (44%) had only delivered 1-3 projects.
- Of the projects that did proceed, almost half of suppliers reported 11-20% annual savings, while a quarter reported year-on-year saving in excess of 30%.
- Good practice measurement and verification (M&V) of energy savings was only utilised in around half (56%) of all EPC projects, leaving a large proportion unmeasured. The resulting uncertainties over performance are perhaps reflected in the consumer feedback above.
- The industry's outlook for growth is optimistic however. Around 6 out of 10 suppliers expect the market to show clear growth in 2013, in both national and overseas territories.

What is an Energy Performance Contract (EPC)?

An EPC is essentially a finance mechanism to help drive transformational energy efficiency retrofits.

It usually involves a long term partnership (5+ years) between a consumer and an energy services company (ESCO) enabling improvements to take place without any upfront capital cost to the consumer. The ESCO will finance – or arrange finance – for the upgrade on behalf of the client. The ESCO will also implement the range of energy saving measures, typically guaranteeing a level of energy (and cost) saving that is sufficient to pay off the capital investment over the agreed time period. Once this is paid off, the financial savings transfer entirely to the client.

As EPCs are performance-based, throughout the life of the contract the ESCO is incentivised to ensure the client's building is efficiently operated and maintained, or risk non-delivery of the guaranteed saving. Depending on contract terms, the ESCO could be required to make up the difference to the consumer.

High quality Measurement & Verification (M&V) is an important part of EPCs, helping to build trust and credibility in reported energy savings.

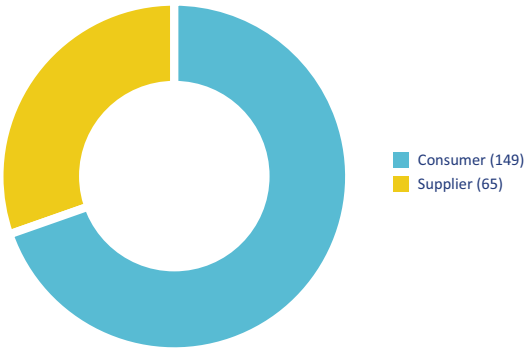
Full Results

The report below presents the results of the EEVS *Energy Efficiency Trends Survey*, a quarterly update on the status of the energy efficiency market and the outlook for the future from both consumer and supplier perspectives.

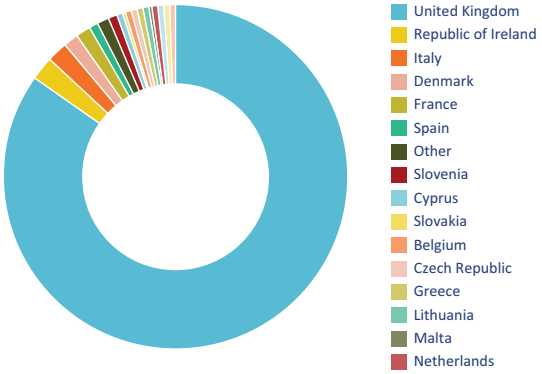
The survey was undertaken between 5 December 2012 and 27 January 2013 and was completed anonymously by a total of 214 respondents.

Introduction

Who completed the survey?



Respondent location



These context-setting charts show that the majority of responses were from UK based organisations (85%), with a small group of responses from other mostly European countries. Also the majority of respondents were consumers (149 public or private sector organisations purchasing energy efficiency), while 65 were energy efficiency technology and service providers ('the industry').

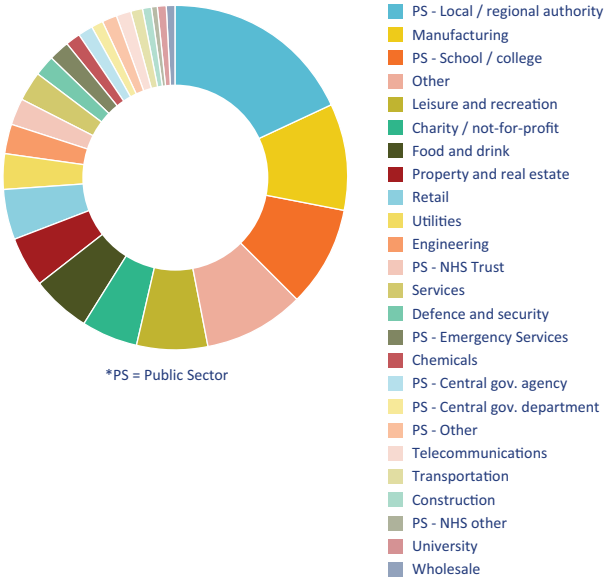
Part 1: Consumer Trends in Energy Efficiency

This part of the report presents feedback from energy and environmental professionals within public and private sector organisations ('Consumers') who are purchasing energy efficiency technologies and services for the built environment.

The questionnaire was completed by 149 consumers between 5 December and 27 January 2013.

Overview

Chart 1.1 – Consumers by Sector



*PS = Public Sector

Chart 1.2 – Consumer Size (No. of Employees)

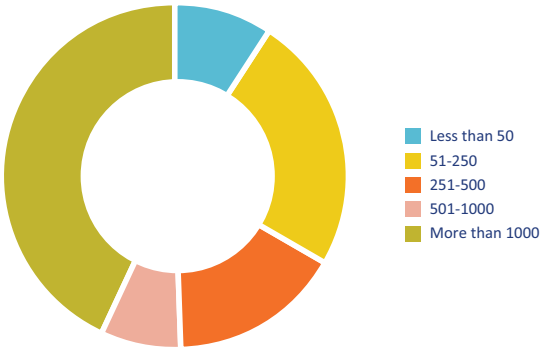
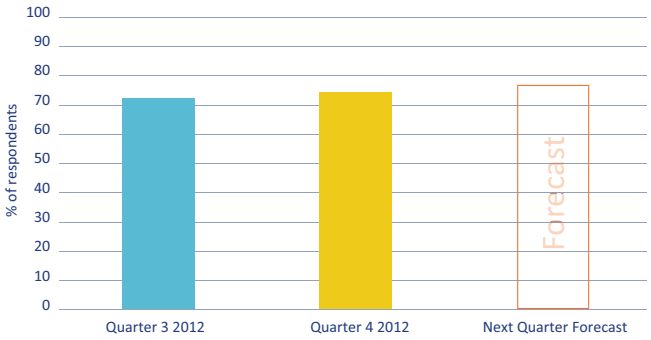


Chart 1.1 shows that the survey achieved good coverage across a wide range of sectors (25+). Slightly more public sector organisations responded to this edition of the survey, moving a broad 70-30 split between private and public sector respondents towards a c60-40 split respectively. Local authorities remain the biggest single respondent grouping, with manufacturing maintaining its position as the lead private sector grouping, perhaps reflecting the priority given to energy efficiency within an energy intensive user group.

Chart 1.2 shows that the survey sample also remains well balanced in terms of organisation size; SMEs are well represented (34%), with large organisations (1000+ employees) the principal respondent grouping (moving from 38% to 43% in the latest results).

Uptake of Energy Efficiency

Chart 1.3 – Consumers commissioning energy efficiency projects



Technologies and Measures

Chart 1.4 – Technologies commissioned

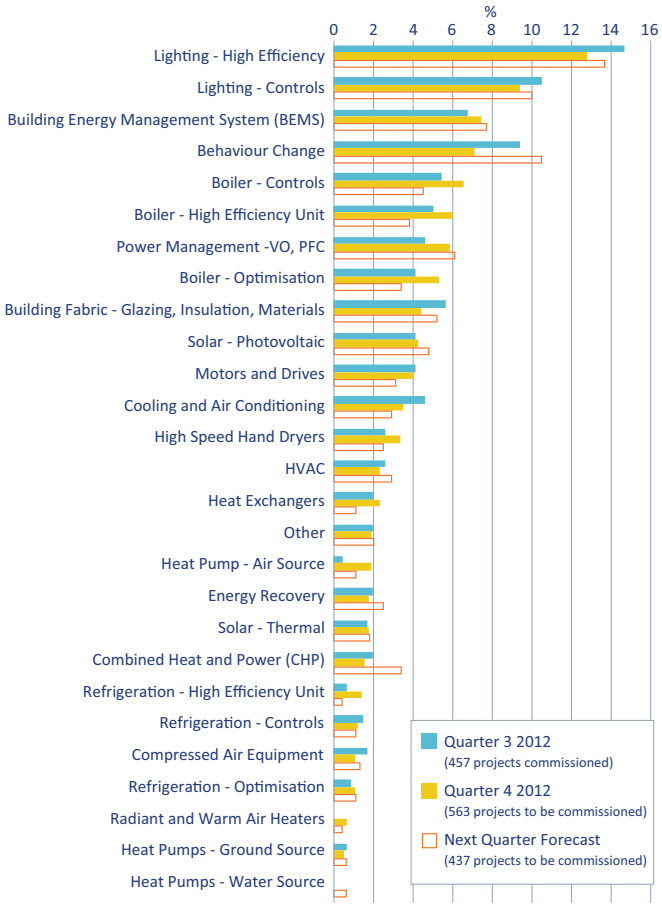


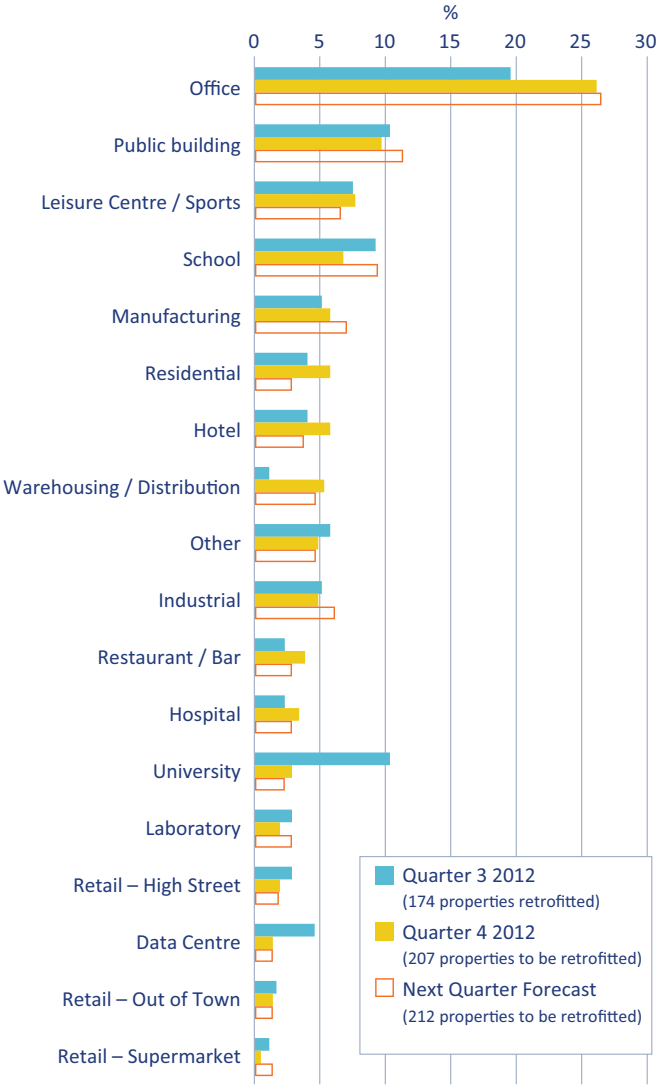
Chart 1.3 – The previous trends report indicated that energy efficiency had been widely embraced, with over 70% of respondents reporting that they had undertaken improvements. This trend has continued into Q4 2012 with 74% of respondents having undertaken projects in the last 3 months, and looks set to continue with over 76% expecting to commission projects in the first period of 2013.

Chart 1.4 shows that a wide range of energy-saving technologies (27) were/are being deployed by consumers. High efficiency lighting and controls maintain their position as the most popular choices, accounting for almost a quarter of all energy saving deployments. Indeed, the chart shows that the broad sector-wide trends are largely stable with no major fluctuations over the last 6 months. It is notable, however, that consumers do expect an uptick in CHP and behaviour change projects in the first part of 2013, while renewable solar PV technology has once again seen only modest take up, which is expected to continue.

Other deployed technologies not listed but mentioned by respondents included: *"Full cell technology" – "Low friction oil trial in injection moulding machines" – "VSD & linked pool water treatment control" – "Pump efficiency, process optimisation" – "Air Curtain" – "Mimicmetering" – "Sub-metering of power distribution busbars".*

Property Types

Chart 1.5 – Energy efficiency retrofit by property type



Project Costs

Chart 1.6 – Capital cost of energy efficiency projects

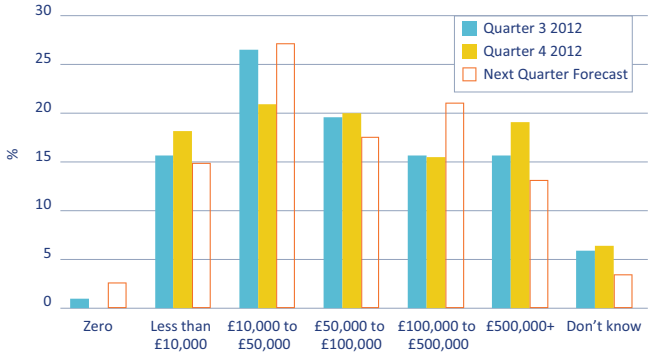
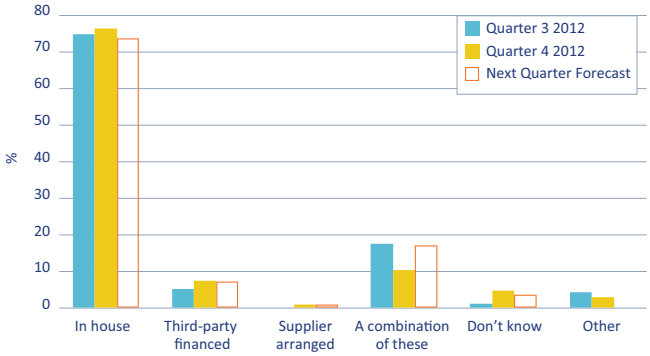


Chart 1.5 shows that offices have maintained and extended their position as the main commercial property type to benefit from energy efficiency upgrades (26%). Public-facing buildings, leisure and schools have also remained a key focus, with a jump in warehousing retrofits recorded. University projects have dipped, although this is possibly due to fewer respondents from within that sector.

Chart 1.6 shows that the broad range of project cost has remained stable. Lower cost projects were again the most numerous with 6 out of 10 costing less than £100,000. Larger scale projects, costing in excess of £500,000, continue to be commissioned however and represent around 1 in every 5 projects.

Project Finance

Chart 1.7 – Finance models for energy efficiency



Financial Payback

Chart 1.8 – Expected payback period for energy efficiency

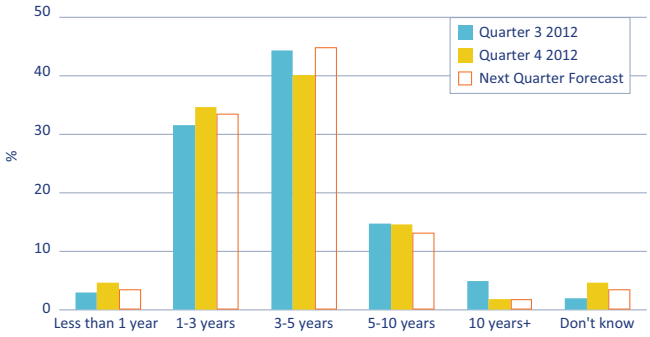
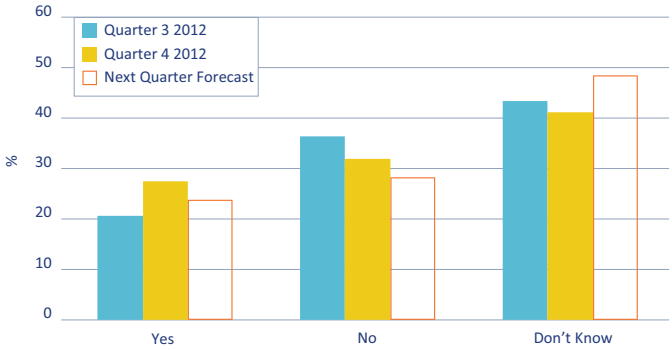


Chart 1.7 shows little change in the funding arrangements of energy efficiency projects with the vast majority being financed using in-house sources of capital (74%). Third-party finance continued to be largely unused with only 7% of the consumers utilising the capital markets. These trends looks set to continue into 2013.

Chart 1.8 shows that the trend towards a short payback requirement for projects – less than 5 years – is set to continue, with 80% of projects expected to payback within this time period. Projects with longer payback horizons of 5+ years account for less than 20% of projects, perhaps reflecting only modest take up of more complex Energy Performance Contracting and multi-technology retrofits (see our special feature on Energy Performance Contracts in Part 3 page 16).

Measurement & Verification

Chart 1.9 – Use of good practice measurement and verification for energy efficiency projects



Consumers not undertaking energy efficiency

Chart 1.10 – Reasons for not undertaking energy efficiency

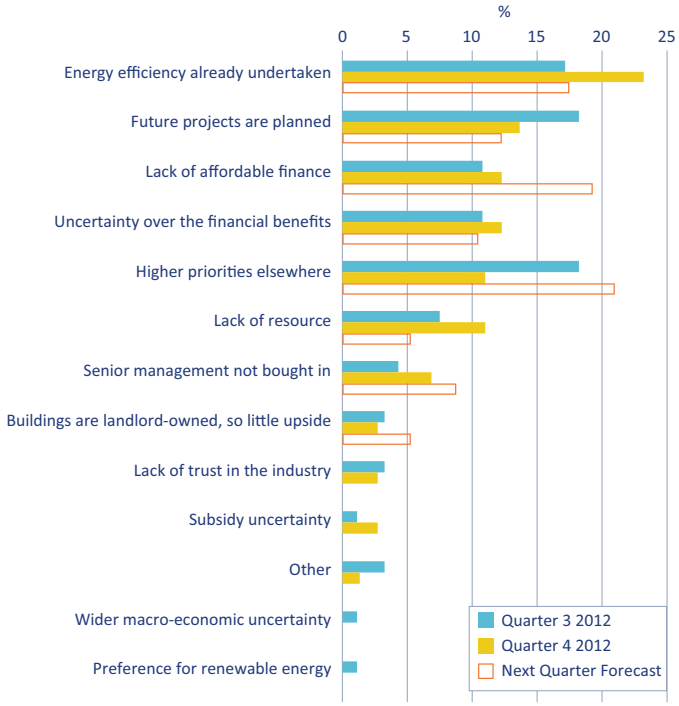


Chart 1.9 shows that 7 out of 10 consumers still do not utilise IPMVP-quality performance measurement in their energy efficiency projects. Smaller projects – generating relatively modest financial savings – may not be deemed to require this performance analysis, but for confidence that larger capital investments are delivering the energy savings and financial paybacks that are expected, robust performance measurement is part of a good practice approach.

Chart 1.3 (see page 9) shows that approximately a quarter of respondents were not planning to deploy energy efficiency at present – this trend continues from Q3, 2012. And in a slight shift on this previous quarter results, **Chart 1.10** shows that within this grouping the principal reasons were; respondents already having undertaken energy efficiency investments (23%) or waiting for future projects to begin (14%). Finance and resource-related barriers were also flagged by 36% of consumers as reasons for not undertaking energy efficiency.

Other reasons stated by respondents included: *"Long term development plans"* and *"School shut for 6 weeks out of the 12 week period".*

Part 2: Supplier Trends in Energy Efficiency

Part two of *Energy Efficiency Trends Survey* presents the survey results for the supply-side of the industry – organisations delivering the broad range of building-related energy efficiency technologies, measures and services to the non-domestic market.

The survey was completed by 65 supplier organisations between 5 December 2012 and 27 January 2013.

Overview

Chart 2.1 – Breakdown by Supplier Type

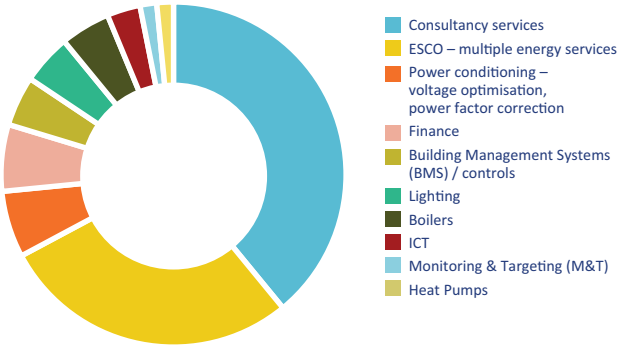


Chart 2.2 – Organisation Size (No. of employees)

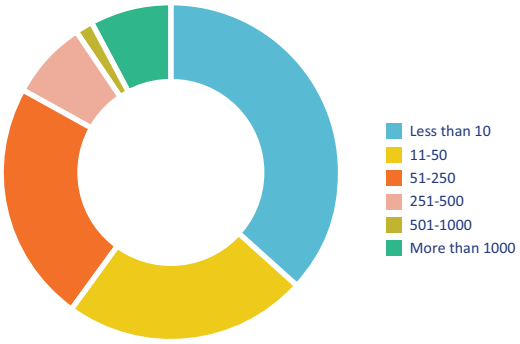


Chart 2.1 shows that consultancy services form by far the largest part of the sample (39%) with providers of multiple energy efficiency products and services also comprising a major proportion (28%). A range of single technology suppliers account for much of the remaining sample.

Chart 2.2 shows that these organisations tend to be SMEs, with 83% employing less than 250 staff.

The Order Book

Chart 2.3 – Orders received from national customers

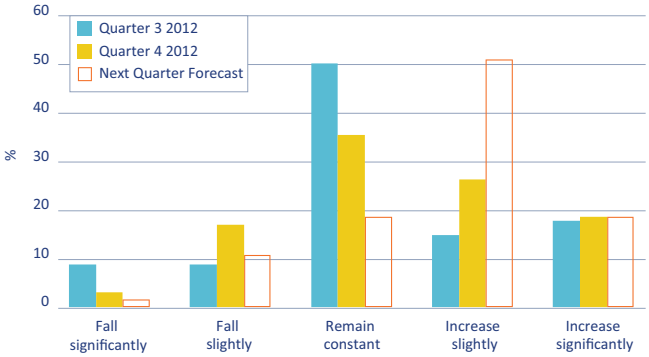
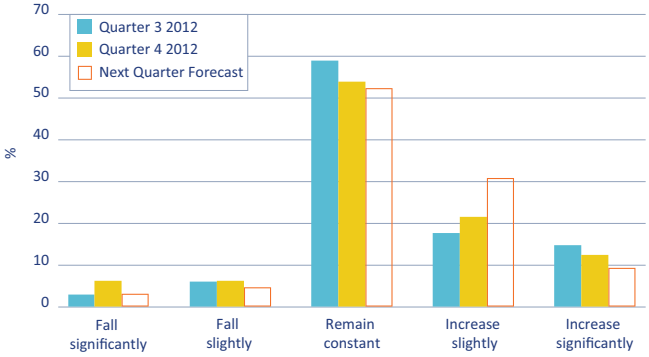


Chart 2.4 – Orders received from overseas customers



Staff Numbers

Chart 2.5 – Staffing trends in the energy efficiency sector

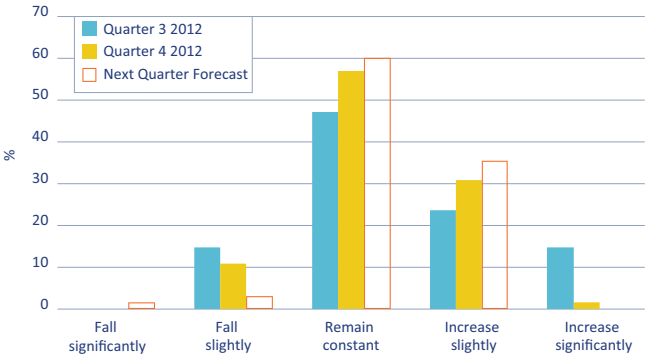


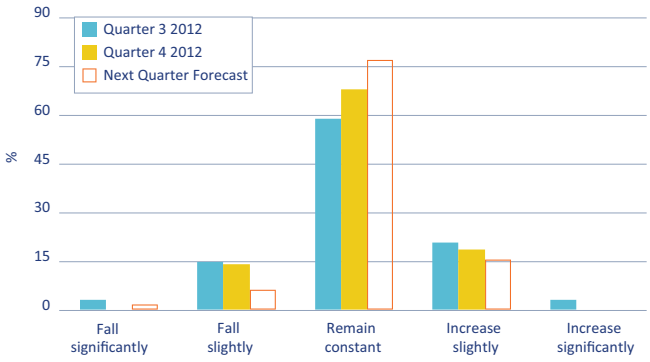
Chart 2.3 shows a positive trend with suppliers' own-country order books remaining largely constant or growing over the last 6 months. The industry is also increasingly positive about future prospects for growth with almost 70% anticipating positive growth in their national market in the first quarter of 2013.

Chart 2.4 shows a trend towards status quo in relation to overseas orders, with over half of respondents expecting no material change. Positively, however, around one third of suppliers reported increasing orders in the last 3 months with more growth expected in the first quarter of 2013.

Chart 2.5 shows that staff levels have remained largely constant and that this trend is expected to continue for most suppliers. The balance is however in favour of growth and around one-third of respondents have reported some increased headcount – a trend that is expected to continue.

Sale Prices

Chart 2.6 – Sale prices achieved



Industry Risk

Chart 2.7 – Key issues of concern to the industry

Government Effectiveness

Chart 2.8 – Industry views on Government energy efficiency policy & management of the wider economy

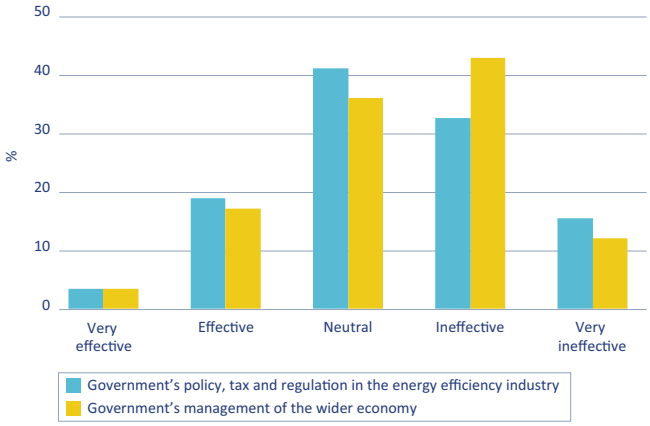


Chart 2.6 shows that sales prices within the sector remain broadly constant, and this is set to continue. Positively, the sector has not reported, and does not expect the first quarter of 2013 to generate, any major volatility in pricing levels.

Chart 2.7 shows that customer demand remains the key issue of concern for the sector. Policy and subsidy issues have, however, moved up the industry's agenda over the last quarter (17%). The chart also shows that the pressure to reduce costs has eased over the last 6 months, while finance remains a leading concern for many (14%).

Following on from last quarter (Q3 2012) **Chart 2.8** shows that 80% (from 85%) of supplier respondents were either neutral or negative towards the Government's management of energy efficiency policy. Respondents were more negative this quarter about Government management of the wider economy, with a shift from neutrality towards more negative views.

Part 3: *Special Feature*
Trends in Energy Performance Contracting

As part of *Energy Efficiency Trends* we aim to include a quarterly special feature in order to 'zoom in' on a discrete part of the energy efficiency space outside the scope of the standard questions we repeat each quarter. In this edition we've asked a short series of questions in relation to Energy Performance Contracting (EPCs) – a mechanism for delivering transformational retrofits which, anecdotally, is seeing increasing interest from both the market and policy makers. Below, however, is our evidence-based analysis of the market:

Consumer Trends

Chart 3.1 – Consumer take up of EPCs in last 12 months

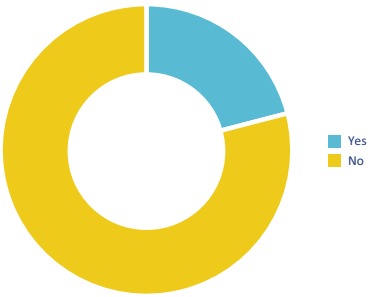


Chart 3.2 – Appetite for EPCs in the next 12 months

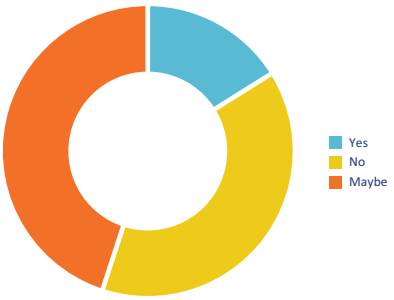


Chart 3.3 – Barriers to greater take up of EPCs

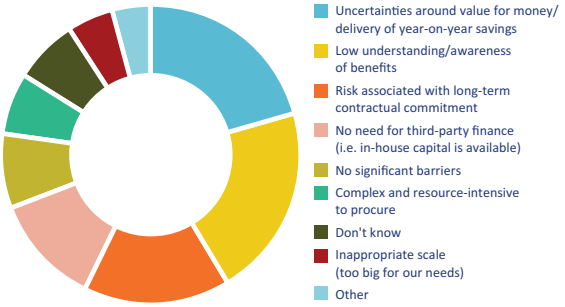


Chart 3.1 above shows that Energy Performance Contracting (EPC) had only modest take up in the last 12 months – 1 in 5 respondents (21%) having commissioned an EPC. The appetite for future use is also mixed and **Chart 3.2** shows that only a small proportion of consumers (16%) are planning to undertake EPCs in the next year. Almost half of consumers (45%) are still undecided. A positive interpretation would suggest that there is significant opportunity for suppliers to better engage with consumers in order to convince them of the benefits.

Indeed, **Chart 3.3** shows that the main reasons for not undertaking EPC projects were uncertainties around value (21%), poor understanding and awareness (21%) and contractual risk (16%). This suggests that the EPC industry needs to do more to address customer concerns and to more effectively communicate the benefits of EPC. It is notable that only 8% of customers considered that there were no significant barriers to take up.

Other reasons stated by respondents included: *"Local Authority does not allow third party financing" – "Our in-house expertise allows us to obtain finance, manage & deliver projects" – "Little investment on present site due to future development plans" – "Decision maker coordination" – "Complexity/ bureaucracy of measuring & verifying savings" – "They must be making money somehow - so why do we not make that money ourselves, and self-finance."*

Supplier Trends

Chart 3.4 – Suppliers of EPCs

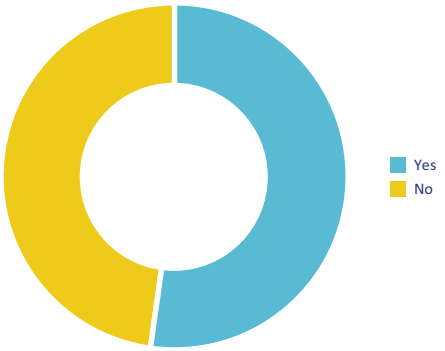


Chart 3.6 – Annual energy savings from EPCs

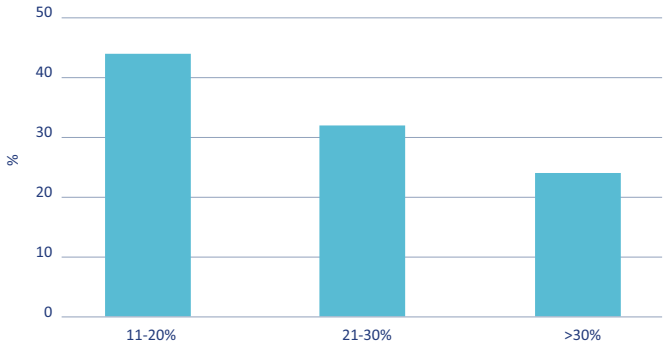


Chart 3.5 – Number of EPCs delivered in last 12 months

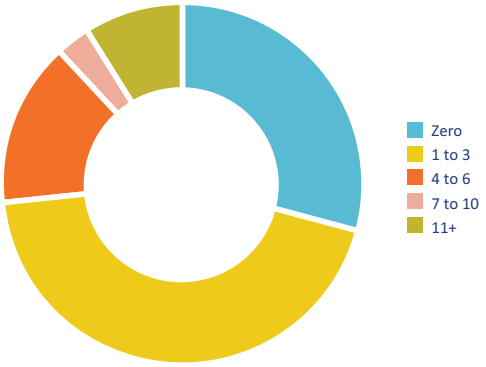


Chart 3.4 and 3.5 show that while around half of suppliers could deliver EPCs, in practice the market is yet to develop significantly, with almost one-third (29%) reporting no EPC projects in the last 12 months and 44% reporting delivery of only 1 to 3 projects. Positively, however, around a quarter (26%) of active suppliers did report higher levels of activity, delivering four or more EPCs in the last 12 months.

It will be interesting to see how the market develops – and how these trends have changed – as we propose to repeat these questions in 12 months' time.

Supplier Trends

Chart 3.7 – Use of IPMVP Measurement and Verification in EPCs

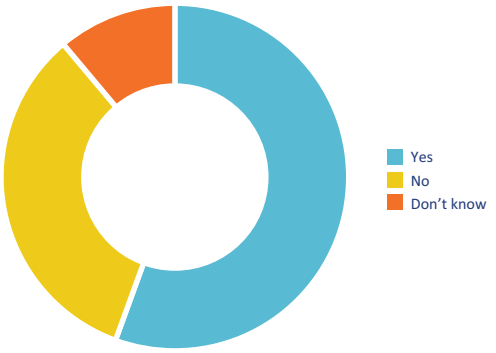


Chart 3.9 – EPCs growth prospects in 2013

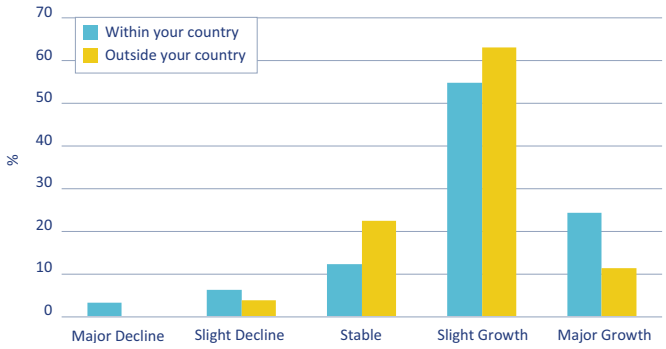


Chart 3.8 – Use of performance guarantees

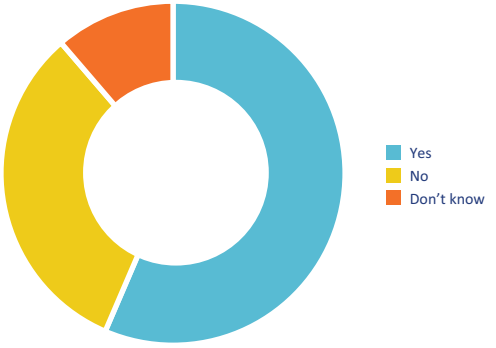


Chart 3.7 shows that for suppliers active in the EPC space, around half (55%) have project savings performance measured and/or verified to global good practice standards (IPMVP). A material 44%, however, reported either not using good practice M&V or were unsure about its use, suggesting strong potential to address key consumer concerns (see Chart 3.3 page 16) over value for money and contractual risk. Interestingly, **Chart 3.8** shows that a similar proportion of suppliers (56%) also offered guaranteed savings performance, perhaps reflecting the additional certainty that is achievable through robust IPMVP-standard performance analysis.

Finally, **Chart 3.9** shows that the industry is upbeat about the prospects for Energy Performance Contracting over the next 12 months, with almost 8 out of 10 suppliers (79%) expecting positive growth in their national market; 74% expecting positive growth in overseas markets.

Contact us

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Energy Efficiency Trends

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February 2013