

Energy down, momentum up

A study of the current levels of energy-efficient equipment investment, affordability, and relevant financing techniques



Siemens cross sector Financial Services (SFS), October 2010

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1. Management Summary

- 42% of companies say that over half their business equipment is now energy-efficient, according to a study conducted in the UK, France, Germany, USA, China, Poland and Turkey
- The main business motivation for upgrading to energy-efficient equipment is that energy savings can be offset against the cost of upgrading, providing an attractive payback period
- Energy cost savings may be gained in the industrial and the office context, although the most considerable savings are to be made in industry, specifically in the areas of industrial motors and drives, along with heating, ventilation and air-conditioning (HVAC)
- Companies also wish to align their upgrade costs with monthly energy cost savings, rather than tying up capital, and are turning to financing arrangements such as leasing to achieve this alignment
- Organisations looking to set up major facilities, such as a new energy-efficient manufacturing, or a local power generation unit, are embracing project finance structures
- Affordability remains an issue. 60% of companies across the same seven countries are currently delaying any further investment in energy-efficient equipment because they do not consider them affordable or sufficiently supported by government incentives
- Capital for equipment investments remains scarce in Western economies, with companies keen to preserve as much cash as they can. Therefore they are looking for means to afford energy-efficient equipment upgrades without having to commit scarce capital
- In the East, companies appear to have observed the recent crisis in the West and probably do not want to have to face the same kind of situation themselves at any point. Therefore they are keen to find financing methods that can be aligned with outputs, revenues and profits.

- It is not just end user companies that are turning to asset financing techniques to make such investments affordable. The same is true of equipment vendors and Original Equipment Manufacturers, who are increasingly turning to integrated asset finance offerings to encourage corporate customers to invest
- Investors have to introduce greater use of performance management instruments, so that original return-on-investment models for energy-efficient solutions can demonstrate that they actually deliver the expected payback

2. Introduction

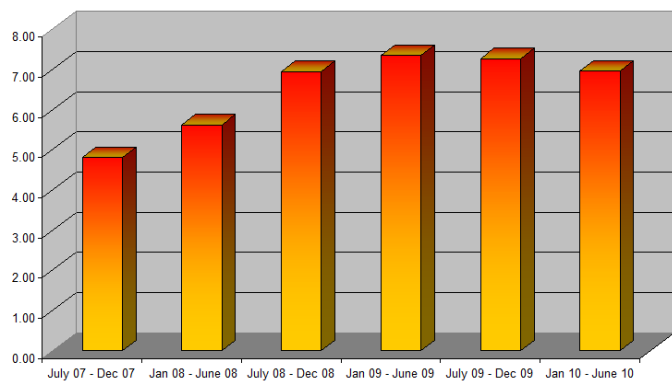
Investing in 'green', energy-efficient technologies is now a mainstream policy for companies around the globe. Accordingly, government policies increasingly seem to be coming into line to support such initiatives, manifested in: the green investment bank in the UK¹; soaring greentech investment in China²; significant growth from green investments across the U.S. economy³; a €1.35bn renewable energy investment programme in France⁴; leadership in sustainable technology transfer in Germany⁵; a particularly active market in solar energy in Spain⁶; the 'greening' of Poland's tram system⁷; and solar technology manufacturing in Turkey⁸.

The advantages of energy efficient technology investments are also becoming widely recognised. An attractive payback period is often provided through savings in energy costs – costs which have risen very sharply over the last three years. Moreover, research has shown that buyers of business products and services will differentiate between otherwise parallel offerings from competing suppliers on the basis of their 'green' credentials, making energy efficient environmental friendliness an important marketing tool⁹.

However, although energy-efficient products and solutions often pay for themselves within an economically reasonable timeframe, they usually require an initial investment that cannot be underestimated. The recent global financial crisis slowed what had previously been a growing momentum in energy efficient investments. Seeking to understand the impact of the global financial-market meltdown on clean energy initiatives, a study published by the Siemens cross sector Financial Services (SFS) in March 2009¹⁰ highlighted that green targets and business rules were already becoming established within the private sector. Nevertheless, the cost of upgrading equipment to its energy-efficient alternatives remains an obstacle to companies adopting green procurement policies. The same study revealed that respondents were nevertheless keen to accelerate their energy efficient and green equipment investments if they could overcome this cost obstacle.

In this context, asset financing is playing a critical part in helping businesses overcome the 'affordability' obstacle, enabling the transition to a greener business environment, especially in countries where credit remains scarce.

EU 27 Median Electricity Prices (EUR/KWh)



¹ Financial Times, Green investment bank plans to be unveiled, 28th June 2010

² *Who's Winning the Clean Energy Race?* The Pew Charitable Trusts, March 2010

³ U.S. Department of Commerce, *Measuring the Green Economy*, April 2010; *U.S. Carbon Dioxide Emissions and Intensities Over Time*, April 2010

⁴ Scientific American, *France launches €1.35bn Renewable Energy Programme*, 19th August 2010

⁵ UNCTAD, *World Investment Report 2010*

⁶ UNEP, *Sustainable Energy Finance Initiative*, July 2010

⁷ EBRD, *200 million PLN loan to modernise tram system in Warsaw*, 11th May 2010

⁸ Green Technology Investment, *Turkey positions for large scale DSC manufacture*, 16th April 2009

⁹ Source: Pitney Bowes research

¹⁰ Siemens Financial Services, *Maintaining the in Green Momentum*, March 2009

This paper is based on 2010 research that quantifies the proportion of businesses that have slowed their investment in energy-efficient and green technology across the UK, France, Germany, the USA, China, Poland and Turkey, because of the affordability issue. It also publishes research figures on the proportion of companies that now can boast that over half their business equipment is energy efficient. These figures indicate the seriousness with which the private sector is taking energy-efficient technology investment.

Having described the size and seriousness of the green technology affordability gap, the paper goes on to describe the asset and project financing tools that forward-thinking companies are utilising to make their energy-efficient investments affordable, in light of the continuing tight credit conditions in the West, and the determination not to take on inappropriate borrowings in the East. These techniques are illustrated by several real-life examples.

3. Energy-efficient Investment – key technology examples

Before describing this paper's research outcomes, it is worth examining briefly some key energy efficient technologies, the motivations and opportunities for investing in such energy-efficient equipment, as well as pointing out some of the challenges around constructing a return on investment (ROI) model from energy cost savings.

There are several possible motivations for investing in energy-efficient equipment:- the desire to reduce energy costs; the need to comply with legislation; the drive to engage with some form of national or international 'carbon credit' system; or simply the desire to be, and be seen to be, a good corporate citizen.

The strongest business motivation for energy-efficient investment is, of course, pay-back from energy cost savings. The second, however, is the availability of affordable methods of investing, which allows the user to pay for the equipment at a similar rate that energy cost savings are accruing. But what are typical examples of such energy-efficient technologies for the private sector?

Office technology is the fastest growing energy user in offices, currently accounting for around 15% of total office energy consumption, and set to double by 2020¹¹. Energy saving schemes, of which the best known is the worldwide EnergyStar labelling scheme, have really taken hold in the last few years, becoming a de facto requirement for almost all branded PC sales. Power management software for desktop and laptop computers is also becoming the norm. Furthermore, many organisations are conducting a wholesale migration from desktops to laptops for employees, as they can consume as little as one tenth of the energy used by their desktop equivalent. However, it is in the very high power consumption computing locations – data centres, processing centres, server farms – that lower power, lower heat emission CPU technology is making a real contribution to energy saving. Analysis from Gartner has noted that the global IT industry generates as much carbon emissions as the global airline industry.¹²

The real focus for energy saving in the office, however, is imaging technologies – scanning, printing and copying. Here, a number of technology innovations are helping organisations to reap energy efficiencies. Software developers have released applications which feed all appropriate office printing into a central production centre, where energy consumption and output costs achieve industrial economies of scale. Equally, other applications are now available which queue non-urgent printing for production in batch, reducing the need for equipment to power-up and power-down so frequently, one of the greatest users of energy. At least one copier and printer manufacturer¹³ has managed to drastically reduce the heat requirement for fusing toner onto paper, and has also come up with technology that can power-up and down in just ten seconds. Others have managed to improve the energy-efficiency of the drives which transport paper through the equipment in the printing process. However, the single greatest energy-saving initiative in office technology is the emergence of multi-functional devices, where the same basic engine is being used to scan, print and copy.

¹¹ Source: National Energy Foundation (www.nef.org.uk)

¹² Gartner, *Symposium 2007 – Emerging Trends*

¹³ See, for instance, Canon, Ricoh, et al

There are some technologies that can be upgraded to a more energy-efficient alternative more easily than others. Replacing IT is relatively straightforward, in that the servers in a major data centre (the main IT consumers of energy) take the form of component units that can be easily replaced, and in any event are subject to regular upgrades and replacements.

In contrast, heating, ventilation and air conditioning (HVAC) systems can often only be cost-effectively replaced during a building refurbishment, a relocation or a restructuring. In this case, air conditioning technology – itself the single biggest consumer of energy in the average business – may be best upgraded to the greener alternative whilst other work is also happening. So planning across several technologies – perhaps air conditioning, lighting, security, IT, and more – is becoming increasingly paramount, with the result that supporting finance arrangements often need to be able to encompass all these elements.

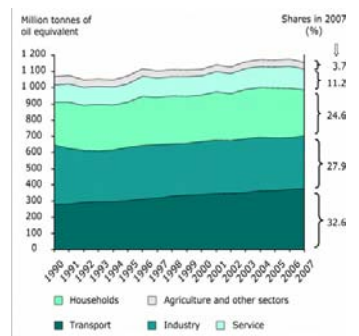
HVAC is relevant to both the office and the industrial context. Much more significant, however, for industrial organisations' energy-saving initiatives are drives and motors. Energy-efficient upgrades in the industrial context also require careful planning. Drives of various sorts, whether they are part of a production line, turning a printing press or moving chemicals, are typically a major focus for energy-efficient upgrades in industry, as they are major consumers of power, and can therefore provide rapid payback from energy cost savings.

Worldwide, there are approximately 20 million industrial motors—with vast potential for saving energy¹⁴. In 2007, industrial electricity consumption in Europe alone was around over 900 TWh—which is approximately equivalent to the output of 400 fossil-fueled power generation plants. Drive technology accounts for two-thirds of this amount¹⁵. The potential is there—especially for auxiliary processes that do not serve production directly. Such processes include, for example, the preparation and transport of auxiliary materials, air conditioning and waste removal. The largest industrial consumers are compressors, conveyor belts, and mixing and milling systems, as well as pumps for heating, ventilation and air conditioning. In the paper industry, for example, a medium-sized operation will have more than 3,000 motors running 24 hours a day, seven days a week.

The technology for saving exists - but high acquisition costs for energy-efficient industrial drives can put off many managers, as witnessed in the key findings from this survey. However, when viewed in the context of total costs, the acquisition price becomes a relatively insignificant factor. Given that these drives have a service life of ten years, in an example where there are 2,000 hours of operation annually, the purchase price accounts for less than 3% of total costs. Energy costs, by contrast, account for over 95%. Factor in a financing option that allows the new drives to be paid for on a form of pay-to-use basis, and the energy cost savings are effectively paying for the acquisition cost, at an affordable rate, and without tying up scarce capital.

Fig. 1: Final energy consumption by sector in the EU-27, 1990-2007

Note: Final energy consumption by sector in the EU-27, 1990-2007
 Data source: Eurostat: Supply, transformation, consumption - all products - annual data
<http://app.eurostat.ec.europa.eu/portal/page/portal/energy/data/database>
 Downloads and more info



¹⁴ Source: European Copper Institute

¹⁵ Source: Siemens

However, the replacement of industrial drives does need to be viewed in the context of every process they are powering for the best outcome to be obtained. For instance, the extraction of hot air and dangerous fumes can often be harnessed to capture and recycle energy within a plant. Again, financing arrangements need to be available to embrace several interlinked equipment investments, and therefore harness multiple energy savings for the company.

Local power generation is also tied up with the more efficient processing of industrial waste. Micro power plants are being sited close to major manufacturing complexes in order to prevent waste having to be transported to a remote site, thereby consuming unnecessary fossil fuels and generating large quantities of CO₂. However, such micro power plants are of too small capacity to be interesting to the major utilities, and therefore tend to be developed by smaller businesses. These smaller, often younger businesses, that typically have relatively poor access to capital, need to find financial arrangements that allow them to fund the development of these facilities in the first place. More detail on the range of available financing tools may be found later in this paper.

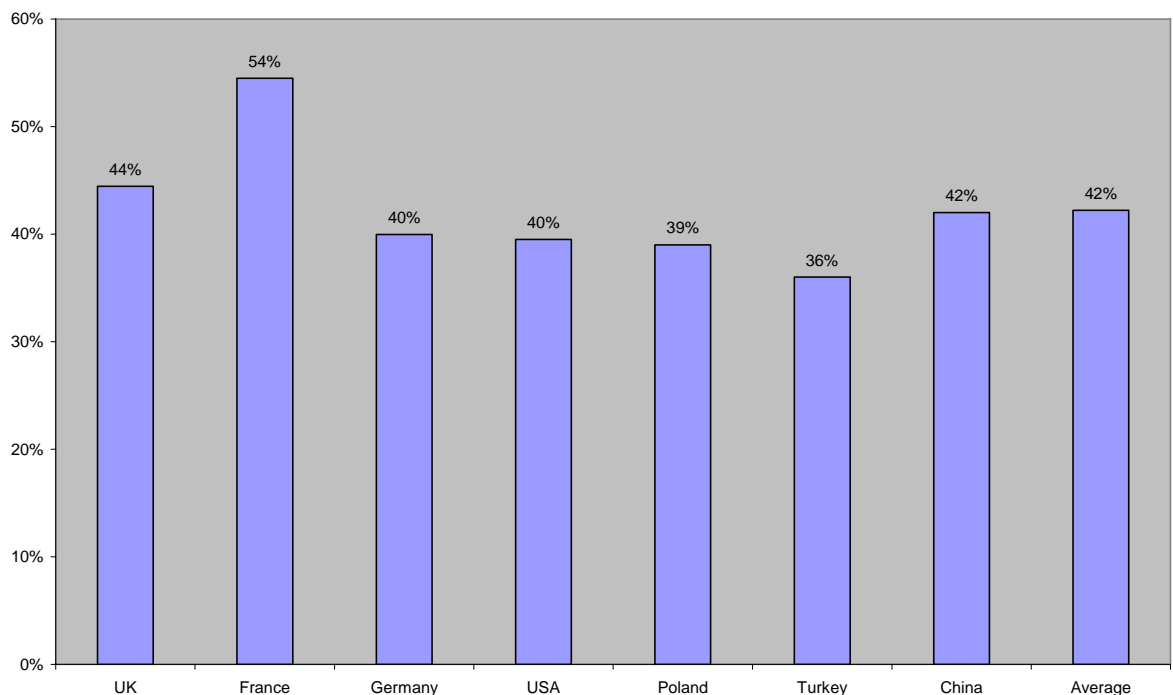
Finally, companies investing in energy-efficient equipment need to think about the subject of energy performance management. Most investors in energy-efficient equipment will have constructed, often with expert help from the technologists themselves, a return on investment (ROI) model, where energy cost savings pay for (or subsidise) the investment over a given period. However, the reliability of such ROI models is only robust where their various dependencies are well understood and managed. For instance, a dependency might be that: certain doors remain closed 90% of the time; or that heating is strictly controlled by an automatic shut-off system; or that variable speed equipment is always set to match the actual production cycle speed. Other external factors may affect the ROI model, such as an unseasonably hot or cold summer or winter, or unforeseen fluctuations in the price of electricity. In all events, companies are well-advised to have their facilities audited, and understand the dependencies of their ROI calculations, so that they know which rules need strictly implementing, and can recognise when external circumstances may affect their rate of payback from their energy-efficient investments.

4. Equipping Businesses: The current energy efficient landscape

Across the studied geographies, 42% of companies say that over half their business equipment is now energy-efficient. It is clear from this finding that businesses are doing an increasingly better job of meeting the increasing green legislative burdens being placed on them, such as the carbon reduction commitment (CRC), EU ETS and CCL.¹⁶

Siemens research shows that France (54%) is leading the way in terms of organisational energy efficient equipment usage compared to the other countries studied. French businesses have been particularly successful at investing in energy efficient equipment indicating that the Grenelle initiatives¹⁷ and legislation by the French government are paying dividends. Furthermore, in December 2008, the French government announced its 26 billion Euro economic revival plan - the climate-relevant portions of the plan amount to more than 20%, the highest in the EU.¹⁸

Graph 1: % companies who confirmed that over half their business equipment is energy efficient (Survey: September/October 2010)



Significant improvements can still be made when it comes to reaping the rewards of 'greener' equipment usage by businesses. Although energy costs vary for organisations, it is generally accepted that, on average, energy accounts for 12% of a com-

¹⁶ EU Emissions Trading System, ec.europa.eu/environment/climat/emission.htm

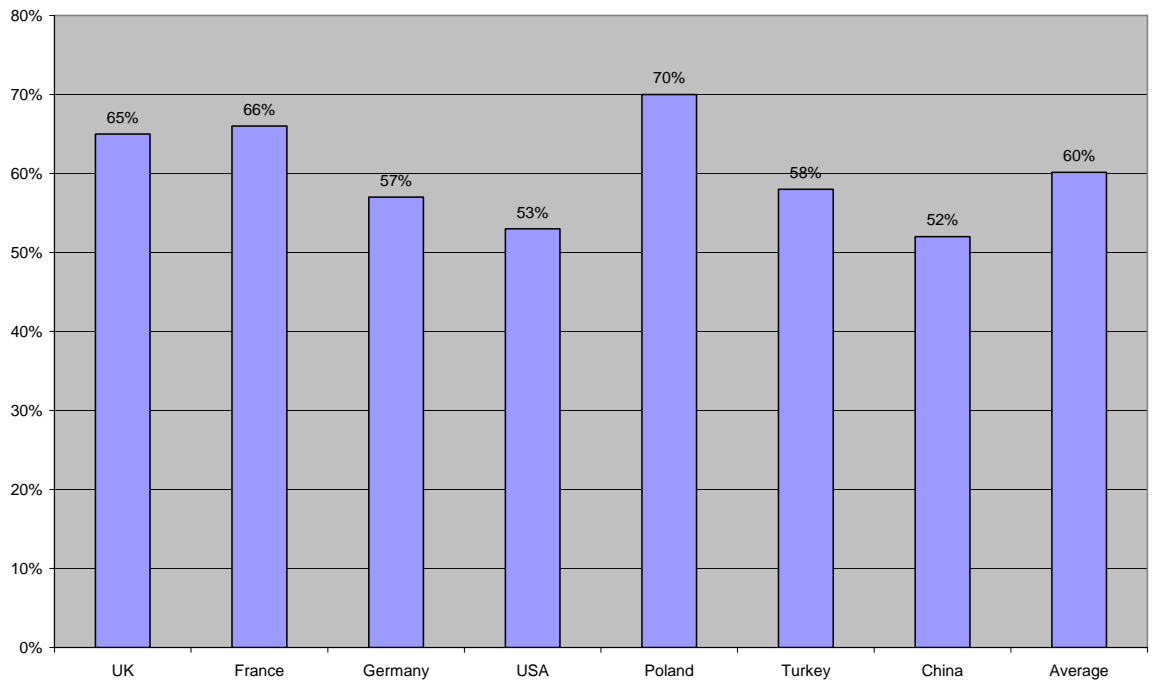
¹⁷ Republique Francaise, Ministere de l'Ecologie, de l'Energie, du Developpement durable, et de la Mer, <http://www.legrenelle-environnement.fr/spip.php?article1307>

¹⁸ http://www.invest-in-france.org/Medias/Publications/152/Argumentaire%20Grenelle_UK.pdf

pany's total costs (much higher for manufacturing industry). When the instability of energy prices and the volatile energy supply market are considered, the incentives for continual investment in energy efficient equipment are both highly attractive and urgent for enterprises across the globe.

Looking at the next twelve months, however, this study also reveals that 60% of companies across the same spread of countries are delaying further investment in energy-efficient equipment because of affordability issues.

Graph 2: Percentage of companies delaying further investment in energy efficient equipment because they do not feel they can afford it (Survey: September/October 2010)



Capital for equipment investments remains scarce in the Western world. The latest bank lending survey (BLS) found that Euro area banks have reported an increase in the net tightening of credit standards, exceeding expectations from the previous survey. Looking forward, Euro area banks anticipate credit standards on loans to enterprises to tighten somewhat). Renewed constraints in banks' access to funding and liquidity management are reported as key factors underlying the tighter credit policy.¹⁹ Companies will therefore be keen to preserve as much cash as they can and will need to look for different means to afford energy-efficient equipment upgrades without having to commit scarce capital.

Polish companies will suffer most from the tightening of credit – 70% of enterprises are to delay their investment in green equipment according to this survey. This certainly correlates with recent Siemens research which highlighted that 74% of Polish businesses were expecting the cost of credit to rise in 2010.²⁰ The lack of credit is compounded by the minimal green elements of the Polish government's economic

¹⁹ European Central Bank, *The Euro Area Bank Lending Survey*, July 2010

²⁰ Siemens Financial Services, *Navigating Uncertain Waters*, August 2010

stimulus package²¹ providing virtually no incentives or support for Polish businesses to invest in greener equipment.

It is perhaps surprising for **France** to be the next country in this survey to have such a high number of businesses delaying further investment in energy efficient equipment. We have already seen how the substantial green portion of the stimulus package and Grenelle policies are the most comprehensive in Europe, affecting particularly the travel and transport, green technology and property sectors.²² However, with two thirds of French companies saying they will delay energy-saving equipment investment, the inclination to commit scarce capital is clearly not strong. The recent strikes and predicted government austerity measures have also worked to undermine business confidence in France which could in turn affect private sector investment confidence.²³

The **UK** follows closely behind as 65% of businesses plan to delay investment in energy efficient equipment. It may be that stimuli across a wider range of technologies and equipment types need to be introduced to accelerate green equipment investment. With low levels of business confidence²⁴ and lending actually tightening²⁵ it is no wonder that British business remains somewhat conservative about energy efficient equipment. Recent SFS research shows that among the three largest European economies, the UK had the highest level of companies (65%) who thought that credit availability would contract in the following twelve months.²⁶

Turkey's results reveal the lowest levels of energy-efficient equipment penetration by the business community at 36%. Meanwhile 58% of companies also said that they were to delay expenditure on green equipment. This could be due to the minimal green business support attributed in the economic stimulus package.²⁷ This lack of investment in energy efficient technology could leave Turkey lagging behind in the long term. Despite Turkey bouncing back relatively well from the global economic recession²⁸, the rewards may not be filtering down to ordinary businesses in the form of available credit.

German businesses fall just below average with 40% of respondents reporting that over half of their equipment is now energy-efficient. Known for its engineering, technology and clean energy sectors, these results indicate that there may be a gap between national manufactured output of green technologies and the level of actual investment in those same technologies by German firms. In terms of forward investment, 57% of companies said they were to delay expenditure on green equip-

²¹ OECD, *Green Growth: Overcoming the Crisis and Beyond*, 2009

²² Ibid

²³ Bloomberg Business Week, *French Business Confidence Stagnates as Sarkozy Budget Looms*, 8 September 2010 (<http://www.businessweek.com/news/2010-09-08/french-business-confidence-stagnates-as-sarkozy-budget-looms.html>)

²⁴ ICAEW / Grant Thornton UK Business Confidence Monitor, Q3 2010 (http://www.icaew.com/index.cfm/route/151990/icaew_qa/en/Members/Business/Business_Confidence_Monitor/ICAEW_Grant_Thornton_UK_Business_Confidence_Monitor_BCM)

²⁵ Bank of England, *Trends in Lending*, August 2010

²⁶ Siemens Financial Services, *Navigating Uncertain Waters*, August 2010

²⁷ HSBC, *Building a Green Recovery*, 2009

²⁸ International Business Times, *While Greece Slides, Turkey Soars*, 6 August 2010 (<http://www.ibtimes.com/articles/41594/20100806/turkey-greece-gdp-economy.htm>)

ment. The generous green economic stimulus provided by the German government could well help to overcome the current performance of the country.²⁹ However, the results still show that a significant number of German companies – over half – are not confident enough to invest in energy efficient equipment. Once again, tight bank lending could be a major contributing factor, with over a third of German business expecting credit limits to be capped this year.³⁰

Like Germany, the **USA** is facing a two-pronged concern over energy efficient investment. US businesses which have over half of green equipment account for 40% - a little below average for the countries studied. Nevertheless, the economic stimulus package which specified a USD 59 billion budget for green technology investments could be behind the better performance of US businesses in terms of forward investment in energy efficient equipment. However 53% of companies in the USA say they are to delay expenditure on green equipment – this is still too large if the benefits of energy-efficient technology are to be felt by this key economy. The collapse of major US based banks in recent years created a huge downward snowball effect in terms of global lending patterns. This year has also seen bank lending in the States fall at the fastest rate since records began³¹, making it increasingly difficult for companies to look to the banks for credit availability for their green investments.

Obstacles to investment seem to be lowest in **China where** just 52% of companies say they will be delaying investment in energy efficient equipment. China is emerging as the world's clean energy powerhouse. Last year saw the US lose its top spot in clean energy finance and investments for the first time, making way for China with its investments of \$34.6 billion.³² China has not only built a strong manufacturing base and export market for clean energy equipment, it has also set itself ambitious targets in the pursuit of green energy. Furthermore, in the East, companies appear to have observed the recent crisis in the West and may not want to have to face the same kind of situation themselves at any point. Therefore they are keen to find financing methods that can be aligned with outputs, revenues and profits.³³

²⁹ The Guardian, *Can the economic rescue also save the planet?*, 24th February 2009

³⁰ Siemens Financial Services, *Navigating Uncertain Waters*, August 2010

³¹ The Daily Telegraph, *US bank lending falls at fastest rate in history*, 17 February 2010

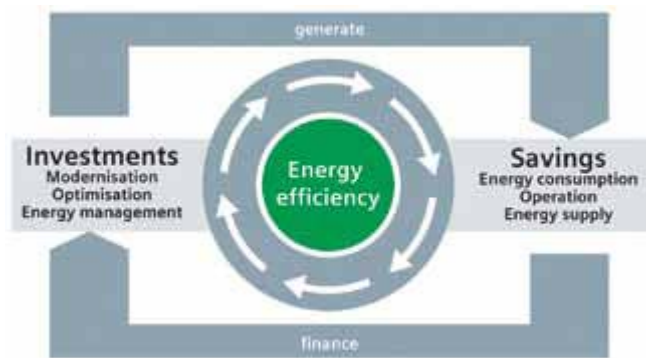
(<http://www.telegraph.co.uk/finance/economics/7259323/US-bank-lending-falls-at-fastest-rate-in-history.html>)

³² The Pew Charitable Trusts, *Who's Winning the Clean Energy Race?*, March 2010

³³ Siemens Financial Services, *Navigating Uncertain Waters*, August 2010

5. The Alternative Finance Solution

In every country surveyed, it seems that access to credit for energy-efficient equipment investment is the greatest barrier. The exception to this rule is China where Siemens research shows that Chinese businesses have been savvy in their exploration of alternative finance methods in order to continually benefit from green equipment usage. In a recent survey, 92% of companies polled in China said that they were particularly looking at increasing their use of asset finance solutions.³⁴



Asset finance options are becoming a desirable financing alternative for organisations looking to invest in greener equipment. Banks on the whole will tend to lend on a short term, variable basis and will often require additional security or impose credit caps when economic circumstances worsen. In contrast, asset finance arrangements will tend to be fixed for the whole period of the agreement, guaranteeing usage of the technology so long as monthly payments are met. This helps to eliminate the volatility of shorter-term economics (interest rates, inflation, credit conditions) and market dynamics, providing a reliable, fixed agreement over the useful life and payback period of the energy-efficient equipment.

Key influencers in the financing market for energy-efficient equipment are larger equipment manufacturers and equipment vendors. This is not only because they wish to finance their own sales. In fact, for many manufacturer-financiers, a proportion of their business comes from financing third party equipment, especially in the energy-efficient equipment market which has a high proportion of specialist equipment manufacturers. The advantage that these financiers have over non-specialist finance providers (such as banks) is that their technical knowledge allows them to more accurately assess the role that energy-efficient equipment will play in the client business, along with the robustness of each client's business plans, payback models, etc. This knowledge also allows them to more accurately equate the benefits of the use of the equipment through its lifecycle and factor that into the financing arrangement.

For much larger projects, such as setting up a new energy-efficient manufacturing unit, creating a wind farm, building a local waste product recycling plant, or building a local power generation facility, project finance structures are becoming increasingly popular. Project finance is defined at the end of this section.

³⁴ Ibid

In terms of the financing tools available for energy-efficient equipment investment, appropriate financing agreements come in a number of guises. More traditional forms include options such as:

Finance Lease – An agreement where payments are made over the lease term. Leasing is flexible and can often allow for equipment upgrades and refreshes. Monthly payments are fixed at the beginning of the term and may not be varied by the lessor, whatever the changes in economic or financial markets.

Operating lease – Where the lessee pays to use the equipment, without full amortisation of the original value, as the residual-value and resale risk is borne by the lessor. Plus, the additional benefit that an operating lease may currently qualify as off-balance-sheet financing under international accounting standards, such as IFRS.

Masterlease - An easy to use and cost efficient facility that makes placing an order for new equipment over a period of time very simple. A Masterlease combined with a working credit line (for larger projects) that once established can be used to acquire equipment required. With only one set of terms and conditions, this avoids the need to set up a new finance agreement each time you require a new piece of equipment.

Additionally, specifically with the energy efficiency topic in focus, other financing options have also been developed, such as:

Pay-to-use/energy savings approach – A form of leasing which incorporates both the cost of the equipment and service elements. Payments can be fixed or adjusted periodically to reflect the usage of the equipment. The primary benefit of this approach is that it allows organisations to link closely the cost of using the equipment over time with the associated energy savings.

Retrofit financing – An option that allows users to upgrade part of an existing installation with a new more efficient equipment and thereby benefit from the financing and the improved efficiency savings.

In addition, there are financing options appropriate for larger and more complex projects, particularly:

Project Finance - The long term financing of a project which is repaid from the cash-flow of that project, typically within special purpose companies or joint ventures ("SPC") with interested parties. Project finance, sometimes referred to as debt financing, is different from asset finance because the financier principally looks to the revenue and profits generated by the project in order to secure and service the loan

In summary, financing energy-efficient equipment investment using one or more of these financing tools offers the following benefits:

- Large amounts of capital are not tied-up or 'frozen' through up-front purchase
- Regular payments align with actual payback from lower energy expenditure
- Financing arrangements are separate from other lines of bank credit, and therefore do not restrict the company's access to liquidity
- Arrangements can accommodate technology upgrades and avoid technology 'lock-in'

6. Conclusion

European businesses are evidently serious about investing in energy-efficient technology, with a substantial proportion having already done so. The spend-to-save argument, where energy cost savings offset the cost of the equipment over time, is certainly compelling. Yet is evidently not enough in its own right to keep the energy-efficient upgrade trend moving ahead strongly. There is danger the momentum built up over the last few years may slow down considerably, unless embedded or otherwise available financing options become more widespread. Companies are becoming unwilling to commit more up-front capital to purchasing energy-efficient equipment. Forward-thinking end users have already sought out financing plans for their energy-efficient equipment requirements, often finding that they can obtain flexible arrangements that can easily grow to accommodate their developing needs. As a result, the 'affordability' of their energy-efficient investments has eased, and their outgoings have been aligned with their energy savings, releasing pressure on capex budgets, and providing a transparent spend-to-save mechanism. Similarly, enlightened vendors are increasingly embedding finance as a key selling point for their solutions, and thereby gaining competitive advantage with customers and prospects.

7. Case study spotlight

7.1 CHINA - Beijing Chaoyang District sets a 'Green Role Model'

Government of Chaoyang District in Beijing, China, has been fervently promoting energy saving and emission reduction to meet the target of the 11th Five-year plan of reducing energy consumption by 20%. Government and public buildings, with great potential for energy conservation, have topped the "green" agenda of the local government.

In October 2009, Beijing Chaoyang District Government joined forces with Siemens to promote energy saving and emission reduction in public buildings and other relevant sectors in the District. The project provides Chaoyang District Government with an equipment leasing solution from Siemens Finance and Leasing (SFL), over the course of five and a half years. This allows project costs to be met wholly from the savings achieved through reduced energy consumption and better operational efficiencies.

With an estimated annual savings rate of at least 12%, the partnership is diagnosing, retrofitting and upgrading selected government buildings to boost the development of environmental local industry and will set a "green" role model for energy saving in infrastructure and construction in China.

Through the lease financing solution and the guaranteed energy savings, the leasing solution is helping Chaoyang District Government improve the energy and operational efficiency without the burden of high initial capital expenditure. This creates a solution whereby the costs for the lease are lower than the saved energy costs, so the investment pays for itself and creates additional cost savings.

7.2 FRANCE – Making energy efficient manufacturing a reality

A large manufacturing organisation was looking to replace the drives on its production lines. The business had two options. Continue to operate its existing manufacturing line or replace the drives with an energy efficient solution from Siemens.

- The incumbent unit would cost €60,000 p.a. in energy and service
- The energy efficient solution was priced at €100,000
- But the annual cost of energy and service is only €15,000 - €45,000 p.a. less than the incumbent.

SFS was able to provide a solution by constructing a five year pay-as-you-use model. The basis of this would be an operating lease in which SFS would take residual value risk saving the manufacturer in the region of 20%.

Put simply, the costs on this model are 20% less compared to using cash over the useful life of the equipment, particularly when lower support costs provided by the Siemens solution are factored in. Over the planned life, the lease agreement and new installation savings total 40% of the new solutions price. The payback period can be further justified, as there are additional benefits in the form of tax-efficiency and other financial ratios.

8. Research Methodology

Over 7,000 company executives were interviewed during the period May – September 2010. Two key questions were asked: (1) what proportion of your key business equipment is now energy-efficient?; (2) Are you delaying further investment in energy-efficient business equipment? If so, why? The countries covered by this study were: Germany, France, UK, USA, China, Poland, Turkey.