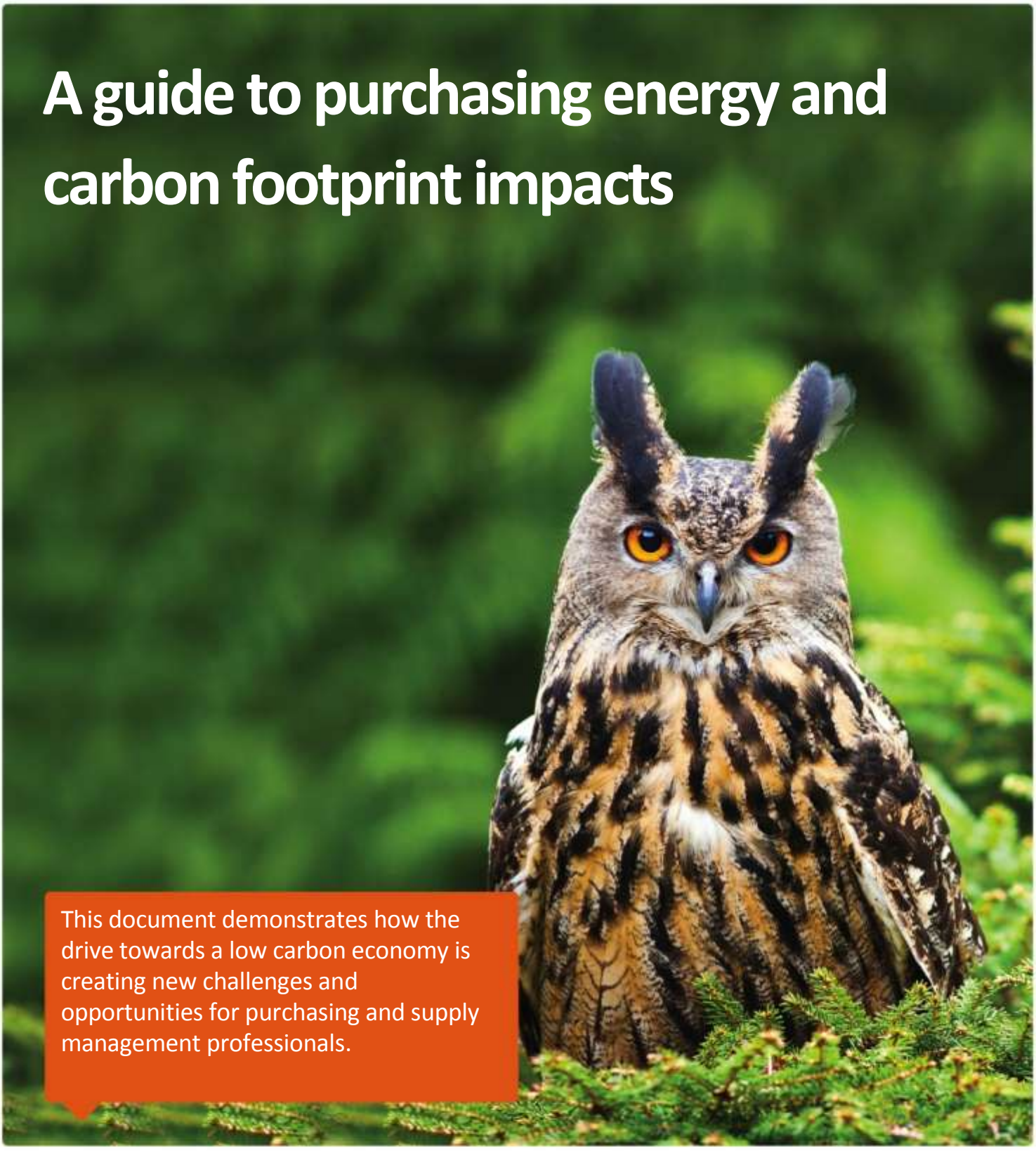
Knowledge Summary

A guide to purchasing energy and carbon footprint impacts



This document demonstrates how the drive towards a low carbon economy is creating new challenges and opportunities for purchasing and supply management professionals.

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A guide to purchasing energy and carbon footprint impacts

Organisations are spending more on energy than they have ever done before. This document demonstrates how the drive towards a low carbon economy is creating new challenges and opportunities for purchasing and supply management professionals. The CIPS Positions on Practice, and hints and tips, will be useful in strategic planning and will, also, assist in developing tenders for electricity, gas and water/effluent services.

Introduction

With increasing awareness of the impact of climate change and the need for sustainable production and development, the future of energy supply in the United Kingdom continues to dominate the news. It is essential for the purchasing and supply management professional to have an awareness of current issues and trends in the marketplace. A level of understanding then enables more effective strategic management of energy and carbon in the supply chain.

In an increasingly integrated global marketplace, the supply of oil, arguably the most high profile hydrocarbon affects, and is affected by, political, economic and social factors. Energy is the lifeblood of industry, commerce and human development. Development, especially urbanisation, fosters changes in societal behaviour and even demographic changes; in an interconnected world we are all affected.

The high cost of supply of energy continues to have a sustained impact on the global economy. Crude oil prices have risen from around US$25 per barrel in 2001 to around US$95 per barrel. The impact can be felt throughout the supply chain, whether on the demand or the supply side. Increasingly, economic success is influencing political decisions, especially where the successful organisations are owned by the state. Oil producers, mainly member countries of OPEC (the Organisation of Petroleum Exporting Countries), find that they need a good home for their petro-dollars. Large energy users have not fared so well and are having to adjust to the realities of globalisation in the 21st century.

Purchasing energy in a volatile marketplace It is possible to plan for rational economic behaviour in the global marketplace. However, it is increasingly difficult to plan for environmental and political factors that impact energy prices. This makes it all the more important for purchasing and supply management professionals to be aware of the interdependent global and political environment in which their organisations operate.

Generally, countries in Asia are enjoying strong economic growth. In China, due to the requirements of industrialisation, natural resources are being secured by trade agreements with other countries, whether they are in Africa, Australia or in the Middle East. There are numerous examples, but to give one, the China Natural Petroleum Corporation has established a presence in Sudan. And recently China signed a 20-year agreement to take liquefied natural gas (LNG) from Shell in Australia. So China is taking security of supply very seriously. It is also an excellent means of utilising its assets built up through trade and current account surpluses with Western economies.

Why energy prices continue to rise

The availability of energy is a key driver of economic development; with the International

Monetary Fund confirming that the global economy is growing at over 5% per annum (11.5% in the case of China), demand for energy will increase. OPEC maintains close control of oil production from its member countries, with daily production surpluses of only around 2 million barrels per day above a daily demand of 82.5 million barrels per day.

Geopolitical unrest (in Iraq and Nigeria, and to a lesser extent in Venezuela and Columbia), combined with depletion of strategic reserves (in the United States) have further driven prices skywards. Speculation in the oil markets has proved profitable for several banks in the UK. It is easy to become desensitized to price rises as each new benchmark becomes established.

Activity at the macro-economic level flows through to the industry and organisation. Energy prices have also increased as a result of disruption to supply chains, either through planned or unplanned downtime. Refining capacity has been affected by unplanned events, such as Hurricane Katrina in 2005, which affected the ability of oil and gas to beach on the east coast of the United States. In another example, a fire at the Buncefield storage facility in Hertfordshire, near London, caused major problems with the supply of aviation fuel to London airports; and the restriction of gas supplies to the Ukraine by Russia further illustrates vulnerabilities in the supply chain. The normal demand curve would suggest a peak in demand to occur during the winter months in the northern hemisphere, followed by a period in the summer with lower demand. Planned maintenance activities for onshore and offshore facilities normally occur during this period, but there is evidence that summer energy demands are increasing to meet cooling and ventilation needs of consumers. This is supported by the Institute of Engineering and Technology who, in estimating that 7% of the UK's electricity from the National Grid is consumed by IT equipment, provides evidence that heating and cooling are major areas of energy use within organisations.

As part of its sustainable production and development plans, the European Commission have stated their desire to steer citizens within member states of the European Union to live in a carbon free world. As a consequence of the policy to levy a carbon tax, another dimension for consideration has been added to the economic rationale in the supply of energy.

Buying utilities differs greatly from buying components for manufacturing production or support services. In part this is due to the actual purchasing process and the unique regulatory environment. To this is added the environmental cost of either using a primary fuel as a source of energy, for example natural gas, or burning a primary energy source, such as coal, gas or oil to generate a secondary energy source, for example electricity.

Green energy, generated from renewable resources are promoted by energy providers as alternatives to burning hydrocarbons. Their use should be supported, but an analysis of the data suggests that the demand for energy outstrips supply by renewable methods. Thus the use of technology such as carbon capture and storage is seen as a tool to reduce the carbon impact of using fossil fuels. At the same time, there is the realisation among experts that the supply from renewable resources is inadequate to meet demand and generation through nuclear fission is required, at least in the medium term. Where security of supply is a prime consideration, the urgency stems from the timescale of around 15 years before a new nuclear facility is commissioned. CIPS, through its Positions, advocates the need for a variety of energy sources to meet demand.

The burning of hydrocarbons (fossil fuels such as oil, natural gas and coal) produces a number of gases harmful to the environment. Collectively these are known as greenhouse gases (GHG's) and governments, from the European Commission to the governments at member

state level, have decided to tax carbon emissions in an attempt to limit the effects of anthropogenic climate change. In communicating with consumers, this is expressed as the 'carbon footprint' - the volume of CO2 generated by a particular activity.

The essential question for the purchasing and supply management professional is how they can help their organisation compete effectively on the global stage and manage their 'carbon footprint'.

Legislation as a driver for change

The United Nations Intergovernmental Panel on Climate Change (IPCC) 4thAssessment Report and the Stern Review on the Economics of Climate Change have firmly established the need for action on climate change. Legislation transposed (enacted) within member states of the European Union under EU Directives are seen as a primary driver of physical and behavioural change in business and the supply chain.

In the UK, through the Climate Change Bill and the Energy Bill, the purchasing and supply management professional will have to maximise the opportunities and minimise the risks of purchasing energy in a sustainable low carbon economy. In other words, managing the carbon footprint becomes a strategic activity.

The Climate Change Bill will give statutory force to the Government's targets for cutting emissions by 60% by 2050 and 26-32% by 2020, against a 1990 baseline. The Bill will introduce five-year carbon budgets, which will require the Government to set, in secondary legislation, binding limits on carbon dioxide emissions during five-year budget periods, beginning with the period 2008-12.Emission reductions purchased overseas may be counted toward the UK's targets, consistent with the UK's international obligations. The Bill will also allow for the establishment of a carbon committee to work with the Government to reduce emissions over time and to set out improved monitoring and reporting arrangements. It will advise on the level of carbon budgets, reduction effort needed by sectors of the economy covered by trading schemes, and on the appropriate balance between domestic action and international trading in carbon allowances. Every five years, the committee's report will contain an explicit review of the UK's performance over the last budget period, and the implications of this for meeting future targets and budgets.

The Energy Bill drills down into the some of the detail proposed in the Climate Change Bill. The bill proposes the creation of a regulatory framework for carbon capture projects and alters the framework to encourage private sector investment into gas supply security. There will also be measures to ensure owners of new nuclear power stations pay their share of decommissioning and waste costs. However, it must be emphasised that much of the detail has yet to be finalised. For example, the Energy Bill supports the creation of a regulatory framework to enable private sector investment in carbon capture and storage (CCS) projects. To date there are no commercial CCS projects in operation.

The Energy Bill intends to strengthen the market framework to help ensure secure and affordable energy supplies and encourage a diverse, secure, supply of electricity. The UK government has set a target that 10% of energy requirements should be generated from renewable resources by 2010, and 20% by 2020. Currently only 2% of energy requirements come from renewable resources. Companies producing electricity from renewable sources, such as wind and biomass, generate renewable obligation certificates (ROC's) that are tradable in a similar fashion to the European ETS. Due to their shortage, ROCS are currently trading at a

premium price.

Under the European Union's CO2 emissions trading scheme (ETS), emissions for the United Kingdom will be capped at 246.2 million tonnes (2008-12).Allowances must be bought (at 18 euros per tonne of CO2 generated, during Phase 2 of the ETS) or offset against investment in approved environmental projects around the world. Phase 2 of the ETS (2008-2012) place caps at 7% below that proposed by 10 of the 27 Member States of the EU.

From legislation to implementation

The message for energy producers and industrial and commercial (I & C) consumers in the supply chain is that unsustainable production and consumption of energy may financially impact the organisation. Contingency planning becomes a priority to mitigate against risk. This risk may take several forms – it may be related to a proposed change in the source of supply, which may affect the security of supply or increase input costs. For example, legislation may restrict the supply of gas and electricity generated by burning fossil fuels. At the same time, demand for biofuels may create supply constraints and push up commodity prices and inflation. A good example of this is that governments in both the USA and China have stipulated that livestock have priority over biofuel users for corn feedstocks, (corn feedstocks being used to produce ethanol).

The impact of legislation within the supply chain is growing. Certain city councils in the UK plan to introduce a green standard for contractors (on construction related work), to help reduce the carbon footprint. Failure to meet the standard may result in the loss of work. In this instance, the customer is driving the sustainability agenda. Some large energy users have managed supply chain risk by taking control over the generation of electricity and moving to on-site generation using renewable sources (such as wind power).

In a business climate demanding increasing agility and flexibility from suppliers and increasing use of the internet for communications, transportation and distribution costs will warrant close attention. For example, the Renewable Transport Fuels Obligation in the UK requires that 5% of all road fuel supplied is generated from renewable resources by 2010.The Road Haulage Association confirms the massive implications of this for a business sector that relies on energy for 32% of its operations.

The supply chain professional can influence the organisation to deliver environmentally friendly solutions and support product differentiation or increased market share. Often these solutions are supported by Government, lobbying and educational bodies.

For example, domestic, commercial and industrial buildings account for 47% of total UK carbon emissions. Recognising this, Constructing Excellence in the Built Environment, together with research establishments, such as the School of the Built Environment at the University of Nottingham, are making great strides towards achieving carbon neutral dwellings. In another example, audits throughout the supply chain are already identifying target areas for increasing energy efficiency. Already in place are Part L of the Building and Approved Inspectors (Amendment) Regulations 2006 which amended the Building Regulations in England and Wales with effect from 6April 2006.These regulations govern the amount of CO2 that can be emitted from buildings.

Other influential bodies in the UK include the Local Authority and Government Utilities Resource (LAGUR) and the Carbon Trust. The Carbon Trust is a UK government funded body

charged with helping business and the public to cut carbon emissions and support the development of low carbon technologies. The Energy Saving Trust and the Energy Information Centre are among several resources available to both industrial, commercial and domestic users. In the USA, the Green Buildings Council is a respected resource for the sustainable design, build and operation of buildings.

The CIPS Position

In influencing the strategic direction within their organisation, the purchasing and supply management professional needs to conduct an audit of the carbon footprint generated within the organisation, both at an operational level, and in relation to the end products or services delivered to the market. The goal of achieving 'carbon neutrality' in business organisations will apply to all industrial and business sectors. The Association of British Insurers recently stressed the importance of managing and acknowledging publicly the social, environmental and ethical risks that companies face, and the inclusion of nonfinancial data in corporate reporting.

For large energy users (for example, extractive industries, steel and cement manufacturers) represented by the Energy Intensive Users Group, issues take on critical strategic importance, with industry considering relocating globally to where carbon costs are lower.

CIPS' views, opinions and beliefs are stated throughout the document; however, the broad practice statements that underpin the text are as follows:

- CIPS recognises the importance of a secure energy supply for UK industry, and supports the call for additional investment in infrastructure to meet future energy requirements.
- CIPS recognises that there is an immediate requirement for increasing generating capacity, involving an integrated Government-led strategy to avoid supply restrictions
- CIPS does not prescribe one form of energy generation over another, but supports a mix of different forms of energy generation for short- and long-term energy solutions.
- CIPS believes that a technology led low carbon economy should be the aim of the UK economy, involving the promotion of renewable energy and the use of carbon capture and storage technologies.
- CIPS advocates that all investment decisions should pay regard to sustainability issues and consider the social and environmental impact of energy generation methods.
- CIPS supports EU negotiations around liberalisation of the EU energy markets.
- CIPS encourages the Government to promote a stronger engineering skills base for the energy industry.
- CIPS encourages the UK government to ring-fence environmental tax receipts for use in sustainable and environmentally sound projects.
- In an increasingly global world, CIPS encourages purchasing and supply management professionals to be ahead of the game by considering the carbon footprint of a supply chain/network as a key factor in the total cost of acquisition.

- CIPS encourages purchasing and supply management professionals to think out of the box to manage the greenhouse gases their organisations generate. CIPS encourages companies to work with other companies or sectors (competitive or non-competitive) to reduce their (companies) and sectors greenhouse gases.
- CIPS encourages purchasing and supply management professionals to work towards reducing their carbon footprint by using less, recycling more, and considering the whole life costs of goods and services procured, including their disposal where applicable. Carbon off-setting, where used, should be to the gold standard, using reputable organisations.
- CIPS is working with professional institutes, trade bodies and government departments in the UK and European Union to encourage good practice.
- Where appropriate, CIPS encourages and supports the formation of labelling standards to clarify to purchasing and supply management professionals, and consumers, the environmental aspects of the products and services they buy.
- CIPS recognises the added complexity in the buying side of purchasing and supply chain management and advocates increased training to meet these skills.
- In relation to the use of third party intermediaries, CIPS insists that transparency always be present in the best interests of the customer.

The following sections give the reader the background and suggest hints and tips when sourcing energy.

The supply of electricity

Electricity supply in the United Kingdom operates in a competitive environment. Supply of electricity is defined as selling electricity to the end user, the customer. To enable competition to develop, a licensed supplier can supply electricity to a customer in any part of England, Wales or Scotland. The supplier has to pay for the electricity, pay for transmission and pay for distribution. A profit margin can then be added to the offer price to a customer. Competition in supply is generated by the supplier being allowed to be a generator as well as a distributor of electricity (from the National Grid system to the customers' premises).The cost of electricity transmission through the National Grid is not negotiable.

Electricity is measured in units, where a unit is defined as one kilowatt hour. A watt is the basic unit of power, with one kilowatt equating to 1000 watts. The electricity consumed when operating at 1000 watts for an hour is called a kilowatt hour. A megawatt hour (Mwh) is 1000 kilowatt hours and a gigawatt hour (Gwh) one million kilowatt hours. Where electricity is purchased in small amounts an all-in price might be offered by the supplier. However, purchasing and supply management professionals dealing with larger contracts should have an outline knowledge of the following elements:

- The energy charge is the major element of the electricity price. It is sometimes referred to as the power station gate price. This, together with the profit, is the only negotiable element. The energy rate can be directly compared between offers, for different premises

and between companies. The most important aspect of the electricity energy price is the time of day when the electricity is used.

- Transmission charges are derived from the electricity used by a customer at certain times (called the triads). There is also a regional factor, low in the north of England, but much higher in the south. This reflects the availability of generation in the north. In addition, the price quoted by the supplier allows for transmission losses.

- Distribution charges vary as to the regional location of the customer, on electricity used and when; they also reflect the amount of electricity supply capacity (availability) held for the customer. This is the maximum rate of use of electricity allowed. Some companies also have a related charge for the maximum demand taken in peak periods. Distribution charges are much higher for low voltage (LV) customers. This is because the distribution company has to reduce the voltage from its high voltage (HV) supply and charges accordingly. Again, the price to the customer allows for distribution losses.

- For larger users of electricity, usage may be recorded in half-hour periods.

Preparing the tender document

From the enquiries that the knowledge team at CIPS receives, it is evident that not all purchasing and supply management professionals managing energy are aware of the notice periods required when switching suppliers. The notice period can be as long as three months and the failure to recognise this leads to contracts rolling over.

The data required for compiling a tender depends on the meter system installed. For consumers with half-hour recording meters the following information is required:

- Company and/or site name, together with address and postcode. The MPAN (Meter Point Administration Number) is also required. This is shown on all invoices.

- The capacity and voltage. The former is agreed with the regional distribution company. The latter can be given as low voltage (LV),high voltage (HV) or EHV (extra high voltage) or the actual voltage.

The maximum demand reached during the previous 12 months (where available).

- It is important for pricing that potential suppliers know when electricity is consumed. Electricity usage for each month, covering the previous year, split into night and day, should be given. This is normally the basic data required. It may be beneficial to segment electricity usage into half-hour periods of consumption where possible.

- The length of the contract required. This may be for a year, or it could be longer. CIPS are often asked what the ideal duration of a contract should be. There is no definitive answer, as a variety of factors need to be considered in making an informed decision.

- The tender should include the name of a contact person and the tender return date.

- In line with good procurement practice, ensure that information from the supplier is compared on a like-for like basis.

The supply of gas

As with the supply of electricity, the provision of gas is based on a competitive market. Gas sourced from the North and Irish Seas (and that flowing through the Bacton- Zeebrugge interconnector) is beached and then piped by National Grid to customers. Since the gas distribution system is a near monopoly, National Grid's prices are regulated and are calculable. The distribution system is operated under the Network Code. This is a very complex document written, managed and operated by National Grid.

Customers are metered, the largest consumers using daily metering (DM).Consumers without daily metering are termed non-daily metered (NDM).Gas was traditionally billed in therms, and many still refer to these units, especially in the trading markets. However, gas is now invoiced in kilowatt-hours (Kwh), like electricity. There are approximately 29.3 kilowatt-hours to a therm. The price paid for the gas consists of a price for the gas itself (the supply price) and a price for transportation through National Grid's transportation system. The customer will pay a total price to its supplier. Often the customer will not see these components separately. The price of gas varies between summer and winter as does the transportation charge. In the UK gas is supplied on a 'firm' or an 'interrupted' basis. Gas supplied on an interrupted basis to industrial and commercial organisations (I & C) cost less, but the organisations agree to an interruption in supply at short notice as specified in their contract. This would occur when there is a shortage of gas in the market and this is done to ensure continuity of supply to vital services (such as hospitals) and domestic consumers.

Preparing the tender document

It is important to make tenders attractive to potential suppliers by ensuring clear and accurate data presentation, together with realistic time-scales for response. It is important to make telephone contact with those suppliers. No supplier can quote for all the potential business, so they need help in selecting which ones to quote. Buyers need to do a selling job on suppliers.

Preparation of the tender documents should start at least ten weeks before the current contract ends. Any relevant notice period must also be given to the existing supplier.

For large gas suppliers the following information is required:

- The name and address of the site including the postcode.
- The M number, which is the unique identifier for the gas supply point. It is required by potential suppliers in order to obtain data from National Grid.
- Monthly usage over the previous twelve months, with any potential changes in the near future.
- Maximum use on any day (if this information is available from the current supplier).
- Whether the gas is supplied on a firm or interruptible basis.
- The type of offer required. In most cases this would be a fixed overall price to include supply and transportation to the customer's premises. It is useful if quotations show the

transportation element separately for comparison purposes. Other stipulations may include no commercial interruptions and no take or pay clauses.

- The length of contract required.
- The closing date for quotes. Hints and tips when buying electricity and gas • Familiarise yourself with your contract in good time to allow tender preparations and negotiations. It is vital to know when the contract expires.
- If the contract starts in the spring consider an 18-month deal. This will give two periods of summer low prices, and one of high winter prices, giving overall savings. Obviously this advantage can only be gained once.
- Have a good knowledge of the markets. A large proportion of energy related enquiries CIPS handles are members seeking validation on market developments. As 40% of electricity is generated by burning gas, any volatility in the price of gas or oil will be reflected in electricity prices (though not necessarily immediately). Trends suggest that carbon permit prices will escalate in phase three of the European Union's emissions trading scheme. Premium prices on renewable energy have led several organisations, such at BT, to implement strategic investment decisions with renewable energy. In this example, BT plan to develop 250MW of wind power by 2016.
- Consultants can be used to provide expertise beyond the knowledge of the purchasing and supply management professional. It is important to establish how the consultancy services will be funded. If a third party intermediary is used, insist on full transparency.
- It cannot be stressed enough, know where your contract is held within your organisation and when the contract expires.
- Ensure compliance to all European Union public procurement legislation.
- Register to receive regular updates from OFGEM, the Regulators for gas and electricity markets in the United Kingdom. The OFGEM website gives a full list of electricity and gas suppliers for England, Scotland and Wales. OFREG is the utilities Regulator in Northern Ireland.
- The Energy Committee section of the CIPS website contains a wealth of information on energy related issues.

The supply of water and sewage/effluent services

The water industry was privatised in 1989 and it was hoped that one of the chief benefits of this, in common with other utilities at that time, would be a competitive market for water. Eighteen years later, and after a number of measures aimed at facilitating water competition, this has not happened. It is not the remit of this Knowledge Summary Paper to detail why those early hopes have yet to come to fruition. Suffice it to say that OFWAT believes competition is fundamental as a driver of efficiency, choice and value and is reviewing why competition is not working and proposing ways to change the framework to promote success. This will

all take some time and water competition will probably not happen, in any meaningful way, for at least another three years.

A competitive market is just one way of reducing water charges. There are many other opportunities, within the current system of supply and disposal of water, to identify high usage and cost areas and to implement measures to reduce these. Start by understanding the charges levied against you by your incumbent water and sewage company.

Each water company has a virtual monopoly in its own area. Revenues are determined by OFWAT (the Office of Water Regulation).Water prices have risen well above inflation in recent years to pay for renewal of the infrastructure and to meet European Directives relating to water quality. However, larger users have been subjected to lower price increases than smaller users. OFWAT, under its rules of non-discrimination for or against any customer, will only allow any negotiated price agreements between supplier and customer if not unduly preferential. Customers generally pay the published tariffs.

Tariffs for water supply contain a fixed charge, usually based on meter size, and a volumetric charge. For sites not metered, a charge is made based on rateable value. The volumetric charge is the same for all customers supplied by a water company, with the exception of large users, who are able to take advantage of lower tariffs.

Before you can reduce your water supply and disposal costs you need to know what those charges are. Ask yourself two questions:

- How much water do we use?
- How much does it cost?

Then, with that knowledge to hand, start on a systematic and focused investigation of each and every element of that volume usage and associated cost. Amongst the areas for investigation are:

- Water consumption at times when it should be at a minimum level. To do this read your revenue meters either side of a shutdown period and if there is anything other than a minimum usage, find out why. Is it perhaps due to a below ground leakage and/or above ground wastage?
- Have the site surveyed, repair any located leakage and install corrective measures to prevent wastage.
- If the site has no manufacturing processes and uses water for purely domestic purposes carry out a “rule of thumb” calculation to see if current consumption can be justified. To do this, multiply the number of staff by 25 litres per day to obtain an average daily usage indication.
- If there is a canteen on-site the average daily use will increase by another 25 litres per meal cooked.
- Four water companies (Northumbrian, Severn Trent, United Utilities and Yorkshire) levy a separate charge for surface drainage that is based on the surface area of the site and when that drainage is to public sewer. If you are being charged in this way check that:
- Your drainage is to sewer and not directly to a watercourse.

- The site area that you are being charged against is correct and that any areas that are self-draining (for example soft ground areas, including gardens and playing fields) have been deducted from the charged for areas.
- For those sites where surface drainage charges are related to the rateable value of the property, check that the correct RV charge is being used.
- Most industrial and commercial sites are charged for water against a metered volume, with only a few being charged against a RV charge. If you fall into this category it could be worthwhile to consider changing to a revenue meter.
- Some revenue meters are over-sized and, if the meter size can be reduced, lower standing charges should result. It may also be possible to reduce standing charges by reducing the number of revenue meters by combining separate meters into one.
- Where you have a trade effluent discharge that is charged for by reference to the Mogden Formula, consider simple on-site treatment, prior to disposal, to reduce those elements of the formula that are either chemical-oxygen demand and/or suspended solids based.
- Sewage is not metered but its volume charge is based on that of the supplied water volume and, generally, it is assumed to be returning at the same volume as that supplied. This is not always the case, as water is often consumed in product and/or lost by evaporation in air conditioning and boiler-feed systems. Always ensure that your water company credits you with the correct non-return allowances.
- Install water control equipment such as urinal controls, cistern dams and flow restrictors.
- If you have an un-used borehole, consider bringing it back into supply. If you don't have one, is it something that might be considered?

Conclusion

Buying energy is a strategic supply chain activity. This Summary paper has informed the reader of some of the economic and political considerations for the dramatic rise in energy prices. The paper suggests that legislation is one of the drivers creating the opportunities and challenges for purchasing and supply management professionals in managing their carbon footprints. The paper concludes by giving guidance and hints and tips to consider when purchasing electricity, gas, water and effluent services. The sustainability agenda is dynamic and guidance is available from the Knowledge team at CIPS.

Websites Resources

Department for Business Enterprise & Regulatory Reform: www.berr.gov.uk

Carbon Trust: www.carbontrust.co.uk

Chartered Institute of Purchasing & Supply: www.cips.org

Constructing Excellence in the Built Environment: http://www.constructingexcellence.org.uk/

Energy Information Centre (EIC): http://www.eic.co.uk/

Energy Saving Trust: http://www.energysavingtrust.org.uk/

Environment Agency: http://www.environment-agency.gov.uk/

Intergovernmental Panel on Climate Change: http://www.ipcc.ch/

International Energy Agency: http://www.iea.org/

Major Energy Users Council (MEUC): http://www.meuc.co.uk/

OFGEM (the Regulator for Electricity & Gas in England, Wales and Scotland): https://www.ofgem.gov.uk/

OFREG (the Utilities Regulator in Northern Ireland): http://www.uregni.gov.uk/

OFWAT (the Water Regulator in England and Wales): http://www.ofwat.gov.uk/

Organisation of Petroleum Exporting Countries (OPEC): http://www.opec.org/opec_web/en/

Stern Review on the Economics of Climate Change: http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/sternreview_index.htm

Sustainable Construction: http://www.bre.co.uk/

UK Energy Research Centre: http://www.ukerc.ac.uk/support/tiki-index.php

UK Green Building Council: http://www.ukgbc.org/

Books

Gas and Electricity Purchasing Principles and Practices **-** *Robin Welsby / Mark Callaway* - This is a book of value both for those coming to the subject for the first time and for those who need a helpful refresher and update for new legislation

Preparing the Company Energy and Carbon Plan: - *Mervyn Bowden* - From "Getting Started" to "Implementing the Plan" this easy to read guide by the Head of Energy Management at Marks & Spencer takes you through the steps you need to take to get to grips with, and maintain control over, your organisation's energy expenditure.

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