

Sherwood Forest Hospitals



NHS Foundation Trust

Dynamic Energy Procurement Proposal

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Contents

1	Introduction	3
1.1	Description of the Initiative	3
2	Current Position	3
2.1.1	Baseline Spend p.a.	3
	Actual Spend 2013/14.....	3
2.1.2	Current Supply Base	4
2.1.3	Current People, Process and Systems Employed.....	4
2.1.4	Current performance	5
2.1.5	Issues and Challenges	6
3	To Be Approach.....	8
3.1	High level Strategy and Outcomes.....	8
3.2	To – Be Description (Including Options)	8
3.2.1	Proposed Supply Base.....	11
3.2.2	Proposed Process, Systems and People Employed.....	11
3.2.2.1	Procurement with > 0% Headroom / Capital at Risk	11
	Concept.....	12
	Graph representing conceptual model.....	12
3.2.2.1.1	Performance with a 10% CaR value	14
3.2.2.1.1.1	– Gas performance.....	14
3.2.2.1.1.2	– Electricity performance.....	14
3.2.2.2	Procurement with 0% Headroom / Capital at Risk	15
3.2.2.3	Corporate Governance Systems & People	16
3.2.2.4	Exit Strategy	16
3.2.2.5	Contract Management.....	16
3.3	Key Cost Drivers	17
4	Timescales.....	17
5	Procurement & Financial	17
5.1	Procurement	17
5.2	Financial	17
6	Next Steps	18
6.1	Sign-Offs & Approvals	18

1 Introduction

1.1 Description of the Initiative

This initiative sets out to improve the cost effectiveness of Sherwood Forest Hospitals NHS Foundation Trust (SFH) procurement of gas and electricity supplies.

SFH currently procure energy using the short term 'day ahead' method from suppliers on the Crown Procurement Service frameworks. This method of procurement 'fixing day prices for one month ahead' exposes the Trust to short term volatility in market prices. This is essentially an uncontrolled and unlimited exposure and offers no longer term market price protection for the trust.

Cost Improvement Performance reference 6.2.2, 'Energy Purchasing', approved by PMO on 14th April 2014, suggests the move to the purchasing of gas and electricity by a dynamic risk management solution operated by a third party specialist which can realise significant savings over the medium and longer term. The model is based on fixing and unfixing monthly tranches of energy purchase throughout a forward horizon up to 36 months ahead based on parameters set for the current and future financial years within a 'capital at risk' model. This model includes a financial tolerance or ceiling above the expected annual spend on energy to accommodate short term sentiment impacting future market pricing. The application parameters of the capital at risk model will be agreed with the Trusts Finance Department and subsequently is managed by a specialist third party and Crown Commercial Service framework provider, Schneider Electric.

2 Current Position

2.1.1 Baseline Spend p.a.

Actual Spend 2013/14

Utility	Kings Mill Hospital, spend, £	Newark Hospital spend, £	Total spend, £
Gas	2, 428, 237	151, 393	2, 579, 630
Electricity	1, 124, 927	179, 032	1, 303, 959

2.1.2 Current Supply Base

Supply Contract Supplier	Contract Expiry Date
EDF (Electricity)	7 th February 2015
Corona (Gas)	31 st March 2015

2.1.3 Current People, Process and Systems Employed

The Trust is contracted with a third party, Crown Commercial Services, to provide risk management services until 7th February 2015 for Electric and 31st March 2015 for Gas.

Crown Commercial Services provides the Trust with an approach to procurement whereby they manage the purchase of energy throughout a six month buying window that immediately precluded a 12 month fixed price contract. The fixed price was made up of a weighted average based on purchasing decisions made by Government Procurement Service during the six month buying window.

Since September 2012 the Trust has established fixed price agreements in each of the supply contracts reaching agreement to purchase all the energy in the days leading up to the delivery period.

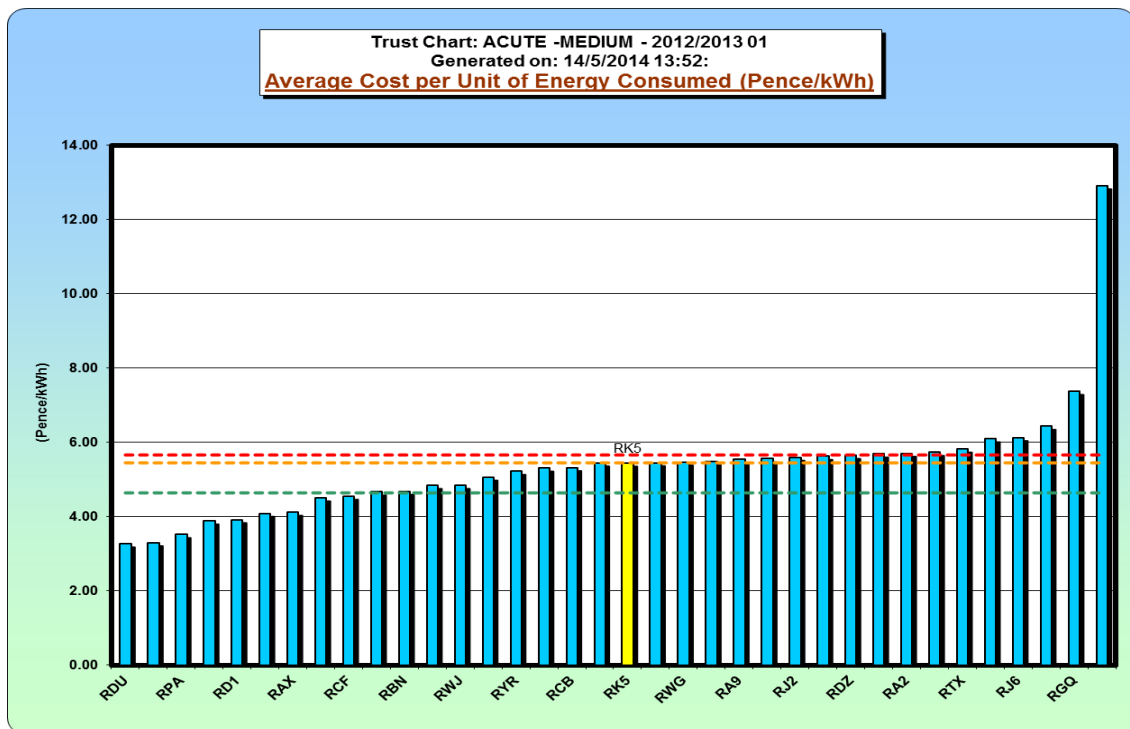
Crown Commercial Services, on the Trust's behalf used a risk strategy that employed a buying period immediately prior to a twelve month energy delivery period. All energy requirements for the delivery period were purchased during the buying period and a price was fixed prior to the point at which the delivery period starts.

2.1.4 Current performance

When compared to other medium sized acute Trusts nationally, using the Estates Return Information Collection (ERIC), SFH has a upper median performance for average cost per unit of energy consumed (pence/kWh) when benchmarked, see graph 1, below.

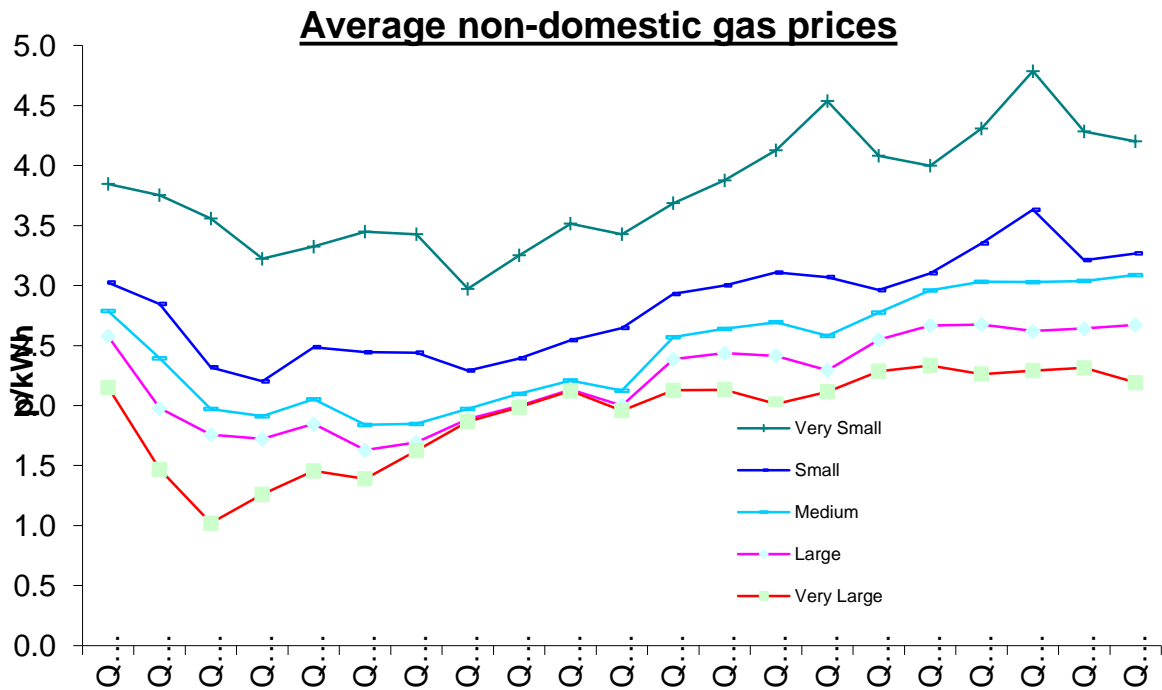
Graph 1: Average cost per unit of energy consumed (pence/kWh) for medium sized acute Trusts, highlighting SFH performance

Source (HSCIC, 2014)

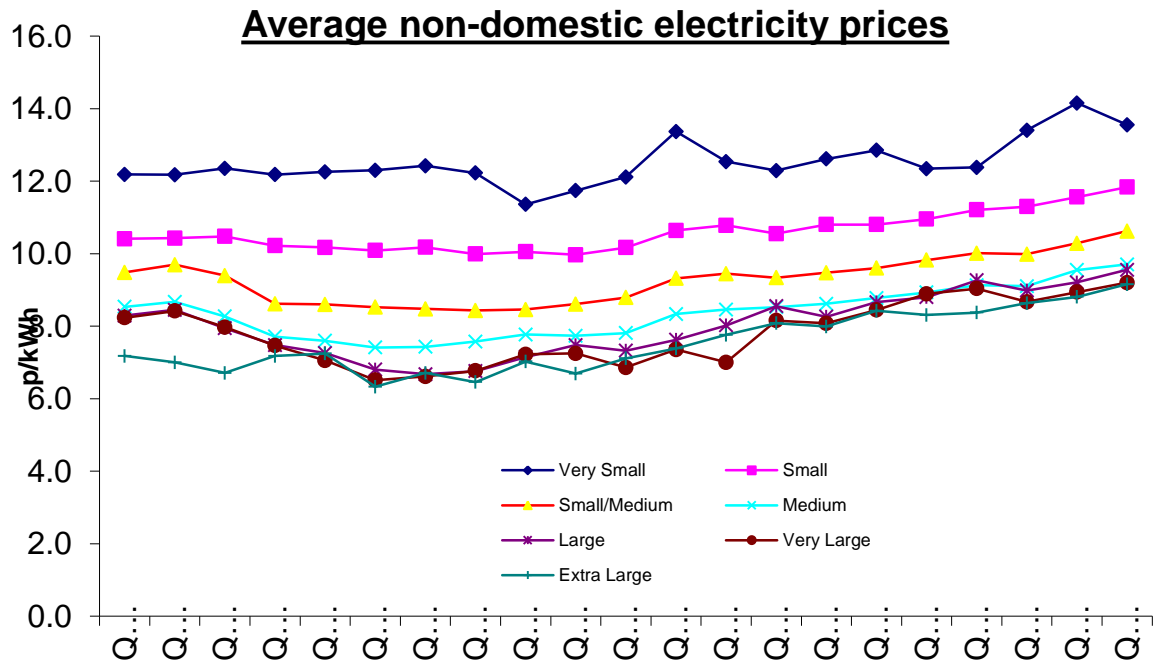


2.1.5 Issues and Challenges

The graphs below show the volatility of the UK energy market and the upward trend. The Trusts risk of exposure to market prices is essentially uncontrolled and unlimited. The Trusts limited influence over its energy procurement strategy results in inflexibility and offers no long term view.



Source: www.gov.uk (2014)



Source: www.gov.uk (2014)

Strategically, purchasing over the longer term based on fixing and unfixing resulting from evolving energy market fundamentals is a more appropriate route to energy cost management. This is particularly valid in the current times of a potentially volatile oil price, challenging economic growth/energy supply chain investment and unstable supply/demand profiles.

3 To Be Approach

3.1 High level Strategy and Outcomes

The procurement strategy centres around two strands:

1. Introducing the flexibility to both buy and sell energy as part of the improved risk management strategy. In practise this would be likely to involve purchasing, selling then re-purchasing different volumes of energy for different delivery dates. This cycle may be repeated a number of times prior to the energy being delivered to sites. Intense risk management would be required to carry out this process. The Trust will need to take a flexible, long term approach to buying gas and electricity from the wholesale market in order to achieve the best possible price with the agreed risk management approach. This approach is the key to mitigating the cost of energy at the Trust against the widely expected trend of increased energy prices.
- 2.0 Introduce risk controls by increasing the Trusts control over the risk management strategy. Risk management defines the strategy employed in buying on the wholesale market to achieve the organisation's purchasing objectives, e.g. lowest cost, budget surety. This includes how much volume to buy, in what market and when. The increase in control would be realised by the Trust being in a position to define its own purchasing objectives and decide the process by which it is most likely to achieve them.

3.2 To – Be Description (Including Options)

An expert third party contractor would be utilised to assess the energy markets and provide information on a daily basis that is specific to the Sherwood Forest Hospitals NHS Foundation Trust profile for the given energy market. The contractor will present advice as to when is best to purchase energy, and if appropriate, when best to sell, with a view to achieving a lower energy price than would have otherwise been available. The contractor would be empowered by a 'risk policy agreement' agreed by the a risk management committee, see 3.2.2.3, comprising of the third party contractor, Schneider, Trust Procurement, Finance and Estates & Facilities representatives, to undertake the appropriate purchases (and as appropriate, selling) of energy on the behalf of the SFH.

To be able to achieve savings this proposal suggests using the financial management technique referred to as “capital at risk” to be adopted by the SFH. This could take one of two forms:

1. Capital is allocated in addition to the existing energy budgets perhaps from outside of the revenue budget.
2. Capital is taken as the difference between the actual energy spend and the energy budget (if possible).

This capital would act as 'headroom' on top of the energy budgets, enabling greater flexibility for setting (purchasing) and un-setting (selling) energy. This headroom can be anything from 0-10% of energy spend, the higher the capital commitment the greater the potential savings. The essential difference between a provision of a 2% and 10% capital at risk would be the amount of opportunities the Trust would have to approach the market. By providing 10% capital at risk the Trust would not be more likely to spend up to this threshold but more likely to spend below it.

A Capital at Risk (CaR) value of 10% is considered reasonable and one which will realise maximum benefit of this incentive. This percentage is subject to finance approval. The CaR will be reviewed at monthly risk committee review meetings to assess the exposure to the Trust and adjusted accordingly.

When compared to energy supply products offered by Government Procurement Service this approach provides greater transparency and control. The approach proposed also avoids the cost of purchasing a physical cap to the market which although it can be offset by including a lower price collar, this could limit savings that would be achievable should the market price of energy drop below the lower limit.

This method of purchasing energy is a method adopted by many large commercial entities such as BT Plc (7th largest buyer of Energy in the UK) and represents a step further on from the arrangement that the Trust had with Government Procurement Service. The intention is that savings will be made by being in a position to closely manage the Trust's energy procurement in partnership with the appointed contractor.

The Trust's Estates Manager has used this model of energy procurement in previous Trusts and has had a favourable experience and the method is used by a number of NHS organisations including,

- Nottingham University Hospitals NHS Trust
- Doncaster & Bassetlaw Hospitals NHS Foundation Trust
- NHS Derbyshire County
- Derby Hospitals NHS Foundation Trust
- Nottinghamshire Healthcare NHS Foundation Trust

Table 1, below, is data unit price data from neighbouring Doncaster & Bassetlaw Hospitals NHS Foundation Trust. The comparison shows a price differential of £627K using the dynamic procurement model. This is based on historic evidence and cannot be used as a basis of future market trends.

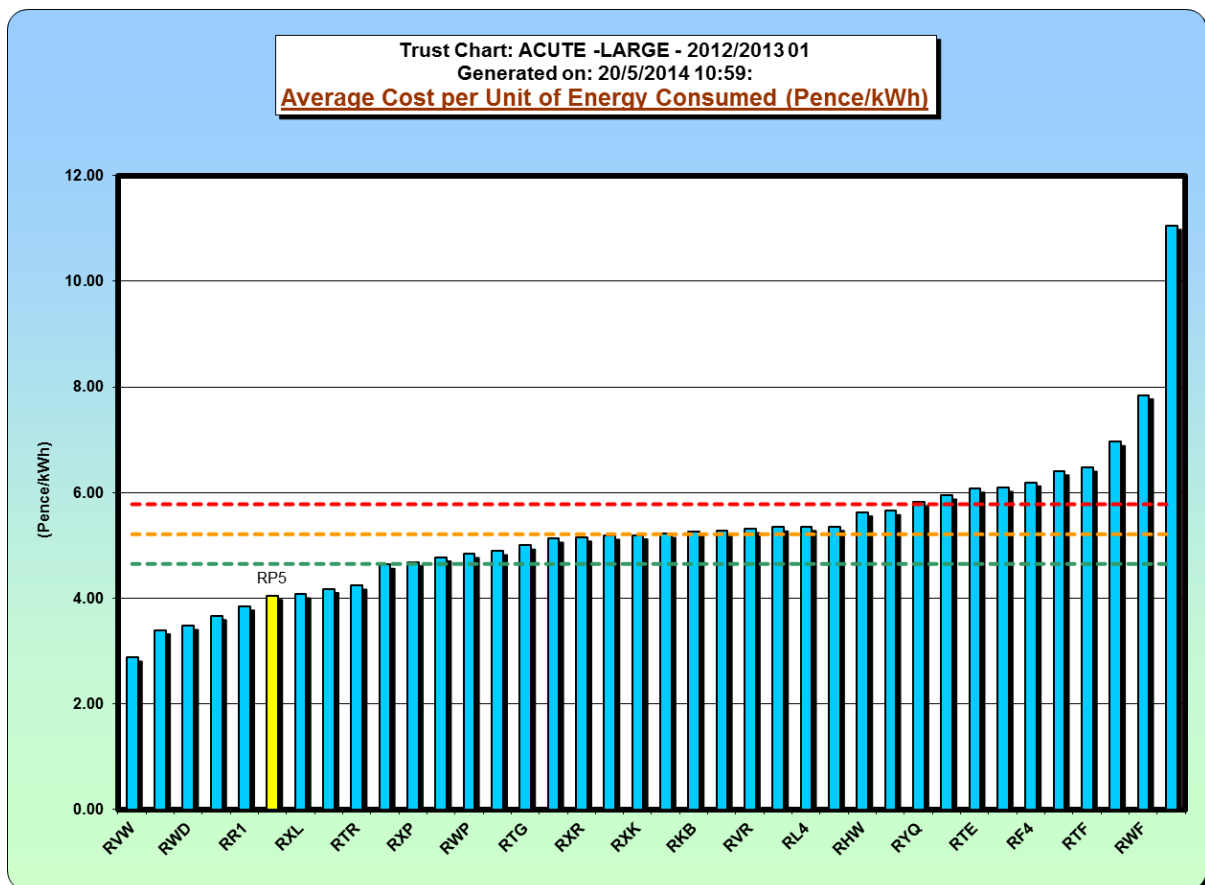
Table 1: Summary of current SFH purchasing performance and DBH comparison

Summary of gas + electricity 12 - 13						
	KWH	Cost	rate/KWH			
Gas	39,300,917	£967,703.45	£0.02462			
Electrical	28,371,840	£2,092,894.20	£0.07377	with Vat		
Totals	67,672,757	£3,060,597.65	£0.04523	£0.05427	Bassetlaw price differential	
Bassetlaw/Doncaster equivalent		£2,537,728.38		£0.04500	£627,443.13	

Using ERIC data for large acute Trusts, graph 2, over, shows that Doncaster & Bassetlaw Hospitals NHS Foundation Trust, by using the dynamic energy procurement method, is benchmarked in the lowest quartile for average cost per unit of energy consumed (pence/kWh).

Graph 2: Average cost per unit of energy consumed (pence/kWh) for large acute Trusts highlighting the performance of Doncaster & Bassetlaw Hospitals NHS Foundation Trust

Source: (HCSIS, 2014)



3.2.1 Proposed Supply Base

The Trust would appoint an energy management consultant to perform the third party contractor role. The following areas have been evaluated as part of the process:-

- Risk management strategy
- Past performance against targets
- Transparency of costs

As a result of this tender it was established Schneider Electric would be the preferred energy management consultant if the initiative was to progress. Schneider Electric is a world leader in energy procurement and compliance services, with over 35 years' experience of helping clients save money in energy procurement and a member of the Crown Commercial Procurement Services framework.

Energy supply contracts will continue to be procured through an OJEU compliant competitive tendering process.

Schneider have detailed their fees in a proposal to the Trust.

- Gas Energy Management Sourcing and Management - £14, 750 + VAT
- Electric Energy Management Sourcing and Management - £15, 250 + VAT

These fees are explicit whereas the current Crown Commercial Service fees are built into the energy unit prices.

3.2.2 Proposed Process, Systems and People Employed

The proposed risk management strategy as described above involves buying and selling energy flexibly. The processes and systems by which this strategy is fulfilled are described below.

3.2.2.1 Procurement with > 0% Headroom / Capital at Risk

The conceptual model, below, represents the purchasing strategy. The period that the energy is being purchased for could be anything up to three years ahead in the future. The purchasing strategy may involve purchasing different volumes of energy for different months, quarters or years.

The baseline for energy spending would most likely be set by a fresh tendering process to appoint suppliers with the most attractive flexible product.

The risk limit would be the baseline with the addition of any capital at risk.

As the model represents, savings may not be immediate and would be dependent upon the behaviour of the respective energy market. In this respect the opportunity needs to be viewed as a three year initiative where the greater savings are more likely to occur in year 2 and 3.

Concept

- 1) Set a Baseline for energy spending

Reflecting current spend on energy and this value becomes the baseline

- 2) Set a Risk Limit

Including any capital at risk

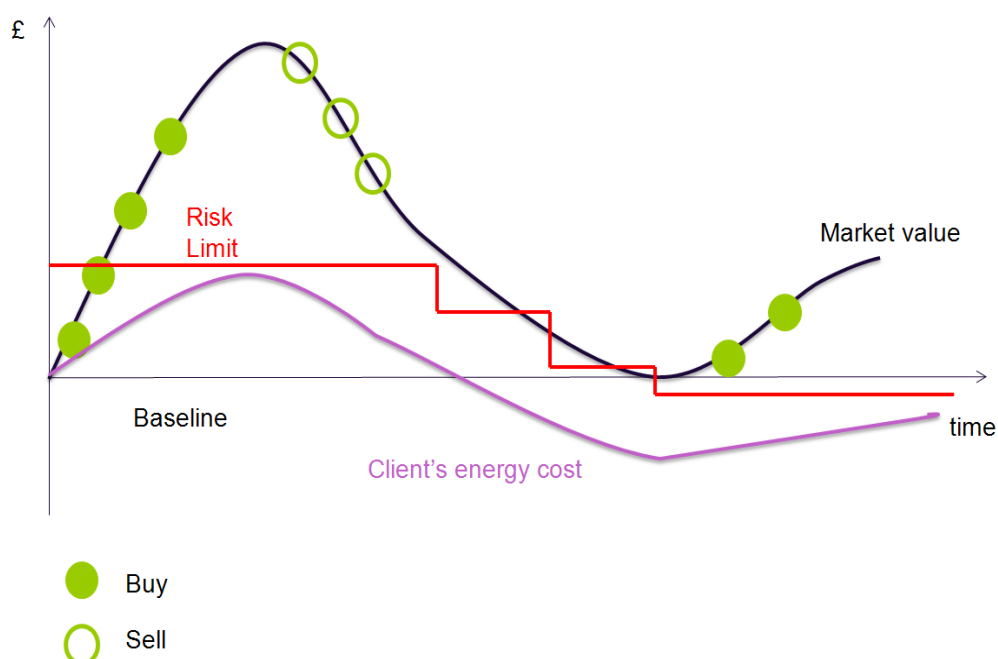
- 3) Constantly measure performance against risk limit

Setting a budget limit will only be effective if it is checked that this budget is not exceeded

- 4) Measure Capital at Risk

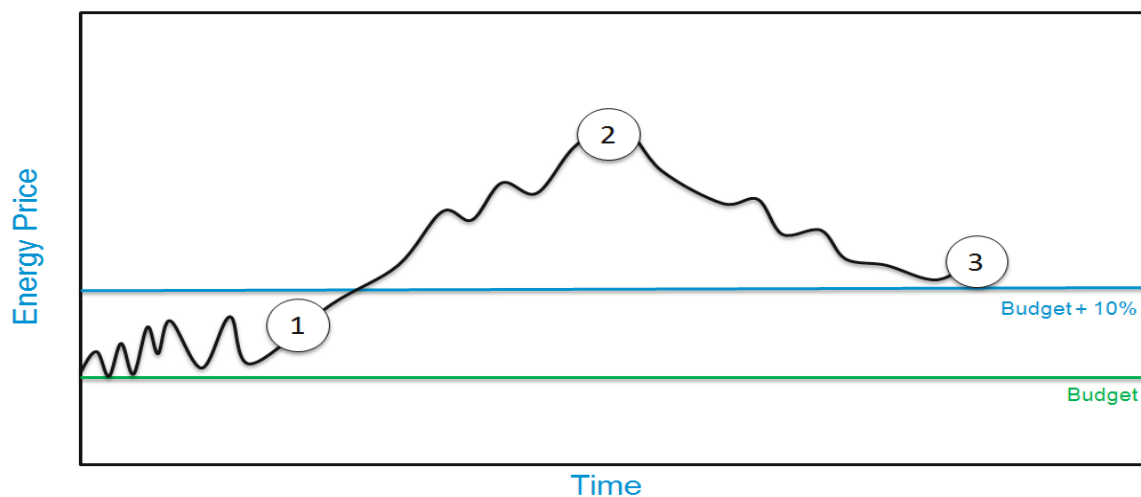
Benchmark the strategy after each transaction (buy / sell) and potentially reduce the risk limit

Graph representing conceptual model



The most challenging element of the strategy is to identify the point at which the market has peaked and begins to trend downwards. This will be achieved by the third party consultant, Schneider Electric, through a number of tools including the statistical measure of 'value at risk' as well as market expertise. When the market is identified as trending downwards from a peak the opportunity can be taken to sell energy previously purchased and then attempt to buy it back for a lower price. This is illustrated in graph 3, below. The black line represents the market price and the blue line represents the organisation's budget plus 10% capital at risk. Price per mega-watt hour (£/Mwh).

Graph 3: Performance in rising and falling market



On the expectation that the market is to trend downwards the opportunity could be taken to sell when the market is peaking (Point (2) for £70Mwh) and then bought back for a lower price (Point (3) for £60Mwh). In this example an overall price of £40Mwh would be achieved.

Buying Price + Selling Price + Secondary Buying Price = Price achieved

$$\begin{array}{ccccccc}
 \textcircled{1} & & \textcircled{2} & & \textcircled{3} & & \\
 \text{£50Mwh} & + & (-\text{£70Mwh}) & + & \text{£60Mwh} & = & \text{£40Mwh}
 \end{array}$$

3.2.2.1.1 Performance with a 10% CaR value

Schneider have simulated the Trusts spend and consumption for 2013/14 to calculate the performance against the 'day ahead' rate of £212K combined saving. See tables below

3.2.2.1.1.1 – Gas performance

Scenario managing Apr13-Mar14 two years forward with 10% CaR level

Risk limit (CaR) Year	10% Apr13-Mar14
Commodity	UK Gas
Proportion of Portfolio Hedged at the end of the period [100.00%
Achieved Average Price of Portfolio (pence/therm)	64.89
Initial market price - Budget (pence/therm)	73.24
CaR Price - Price at risk limit (pence/therm)	80.57
Peak Price (pence/therm)	74.23
Sherwood Forest Price (pence/therm)	72.19
Forecast consumption (therm)	1,341,003
Commodity cost achieved by management (£)	870,201
Commodity cost at initial market price (£)	982,164
Commodity cost at Risk limit (£)	1,080,380
Commodity cost at Peak Price (£)	995,489
Commodity cost at market price at the end (£)	968,070
Performance vs. Budget (initial market price) (£)	-111,963
Performance vs. Risk limit (£)	-210,179
Performance vs. Peak Price (£)	-125,288
Performance vs. Sherwood Forest (£)	-97,869

3.2.2.1.1.2 – Electricity performance

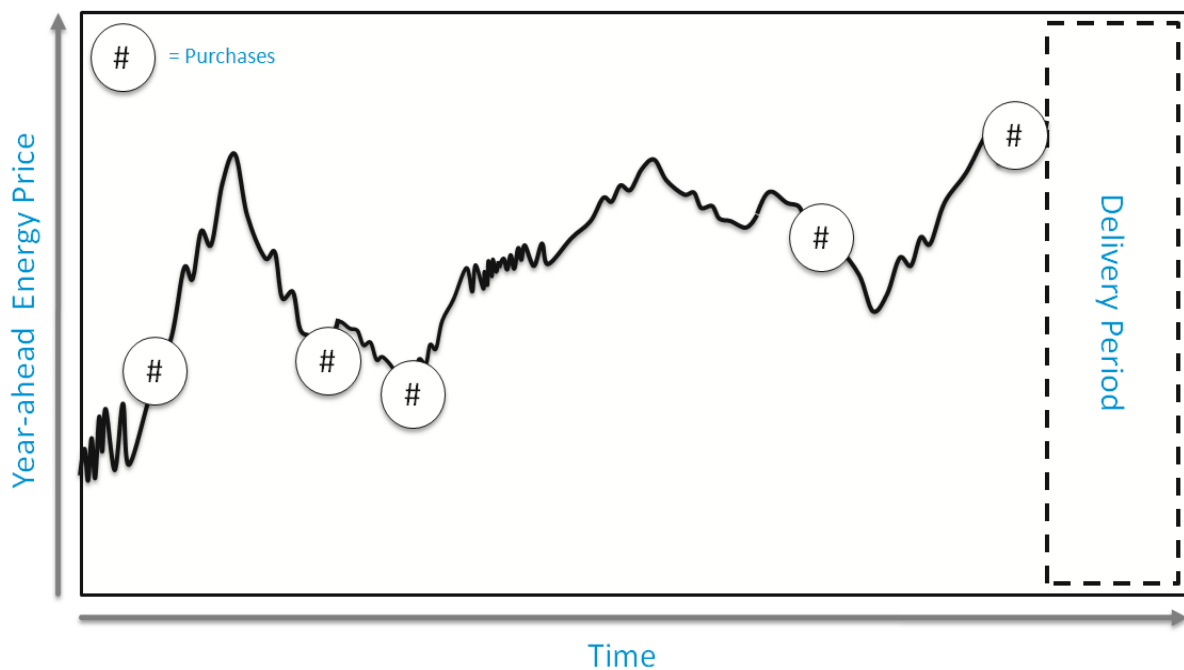
Scenario managing Apr13-Mar14 two years forward with 10% CaR level

Risk limit (CaR) Year	10% Apr13-Mar14
Commodity	UK Power
Proportion of Portfolio Hedged at the end of the period [80.00%
Achieved Average Price of Portfolio (£/MWh)	50.72
Initial market price - Budget (£/MWh)	63.98
CaR Price - Price at risk limit (£/MWh)	70.38
Peak Price (£/MWh)	64.65
Sherwood Forest Price (pence/therm)	54.77
Forecast consumption (MWh)	28,371
Commodity cost achieved by management (£)	1,438,977
Commodity cost at initial market price (£)	1,815,262
Commodity cost at Risk limit (£)	1,996,788
Commodity cost at Peak Price (£)	1,834,077
Commodity cost at market price at the end (£)	1,553,880
Performance vs. Budget (initial market price) (£)	-376,285
Performance vs. Risk limit (£)	-557,811
Performance vs. Peak Price (£)	-395,100
Performance vs. Sherwood Forest (£)	-114,903

3.2.2.2 Procurement with 0% Headroom / Capital at Risk

Procurement with 0% headroom / capital at risk would be an extension of previous strategies used with Government Procurement Service.

0% capital at risk maintains some of the benefits of the >0% model. Purchases can be made over the long term with the flexibility of purchasing different volumes for different periods as in the diagram below. Advised by Schneider Electric the Trust would choose the most opportune moments to purchase energy (represented by the circles below) to build up an average price to be paid during the delivery period.



A limitation of 0% capital at risk would be the removal of the opportunity to make savings through selling energy back to the market and buying it again at a lower price. The opportunity to make savings by choosing the most suitable time to make a purchase would still exist.

3.2.2.3 Corporate Governance Systems & People

The agreement must be enveloped in a strong corporate governance framework.

The key features of the proposed robust corporate governance framework can be summarised as:

- A Risk Policy Agreement that sets out the risk management process, authority levels (including trigger levels for autonomous setting and un-setting by the contractor) and rules for changing capital allocations
- A risk committee including representation from the Trusts Finance, Procurement and Estates & Facilities team will exercise oversight over the risk policy challenges the process and reviews the capital limits and changes them to reflect the changing business environment. This would provide a more joined up approach between the finance function, the Energy Team and Procurement in terms of management information and budgeting.
- The inclusion of the relevant business stakeholders impacted by energy costs to ensure all views and interests become part of the solution, increasing the likelihood of delivering the correct result.

3.2.2.4 Exit Strategy

The Trust shall have the ability to review the contractor's performance regarding the provision of the service against agreed deliverables on an annual basis on the anniversary of the Start Date. Should the contractor's performance be below that agreed by both parties then the contractor's will be granted 20 working days to propose a Rectification Plan showing the proposed return to an acceptable service. Should the contractor's performance continue to be deemed to be below after a period to be defined by both parties, then the Trust shall be entitled to terminate the agreement and employ another method of energy procurement with due notice to supply contracts agreed with energy suppliers.

3.2.2.5 Contract Management

Day to day administration of the contract will be performed by the Trusts Procurement and Estates & Facilities team.

3.3 Key Cost Drivers

UK Energy Markets

Size and age of Trust estate

Energy consumption

4 Timescales

Following approval from the TMB and Trust Board, Schneider will be engaged promptly to begin the dynamic purchasing of energy for the start date of electricity in February 2015 and gas from April 2015.

5. Procurement & Financial

5.1 Procurement

By the nature of the industry the procurement strategy proposed here can provide no guarantees of savings from budgets or indeed that an increase higher than 10% will not occur. Actual caps on liability to the market can be purchased but the cost of doing so is high.

To mitigate risk, efforts have been made as part of the preparatory work undertaken to date to determine M&C Energy's credibility including taking up references from clients in both the public and private sectors. During the contract period the corporate governance structure which features a Risk Committee including Finance, Procurement and Estates & Facilities representatives will oversee decision making in relation to purchasing decisions providing further accountability and the early recognition of potential issues.

5.2 Financial

A degree of uncertainty would continue to exist in relation to the cost of the Trusts energy requirements regardless of the procurement strategy pursued. This reflects the fact that it is not possible for the Trust to control energy prices within the market. However, the proposal to adopt a capital at risk approach reflects the potential benefits available from a tighter focus on the market price available and a pro-active approach to identifying and buying at optimum points in order to drive down the average cost.

The other cost faced by the Trust is related to the headroom that it agrees to build into the capital at risk model. In order to provide the facility to buy and trade in energy (the means of securing a lower overall cost under a capital at risk approach) the Trust will need to agree an overall threshold for expenditure under the arrangement. The higher the threshold agreed, the greater the facility being provided to buy and trade on the authority's behalf and therefore the greater the potential for securing a lower overall cost. In setting a threshold through an initial tender process the authority will be authorising an expected upper level of spend which could ultimately materialise (depending on market conditions) and which therefore needs to be affordable within the Trust's overall revenue budget. The threshold agreed will reflect the authority's approach to risk and will also determine the level of benefit achievable from the new strategy – a lower threshold will have a lower risk but will offer a more restricted opportunity to optimise the price achievable.

6 Next Steps

6.1 Sign-Offs & Approvals

TMB 28th July 2014

Trust Board 31st July 2014