

WHITE PAPER: PRICE EVALUATION MODELS FOR THE HOUSING SECTOR



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Welcome from the initial working group

This White Paper has been drafted following a series of workshops with housing associations, consultants, law firms, sector experts and contractors, all with an interest in adapting how we evaluate price in the housing sector.

For the reasons that we explore in the introduction to this White Paper, the traditional approach to evaluating price needs to evolve to encourage better relationships between contracting authorities and their contractors, and to ensure better outcomes from procurement processes.

With that in mind, we would ask you to consider the issues raised in this White Paper to help further this objective of identifying suitable alternative methodologies for price evaluation.

If you are interested in getting involved, please:

1. Read this White Paper to gain a better understanding of the issues in price evaluation and the alternative models that the initial working group has explored.
2. Use the alternative models on bid opportunities (firstly by looking at your previous bids and whether outcomes would have been different, but also on your new bid opportunities over the next 12 months to see whether these models encourage changes in bidder behaviours).
3. Send feedback to the initial working group with the results from testing these models, as well as suggesting alternative models.
4. Volunteer to be part of the working group.

When suggesting alternatives, we note that there may be variations on the eight models that are suggested in this White Paper. If you are sending a tweaked model please do tell us which model your suggested alternative is based on, and why the tweaks have been implemented and what benefits those amendments seek to achieve.



Rebecca Rees
Partner
rrees@trowers.com
020 7423 8021



Stuart Brown
Associate
spbrown@trowers.com
020 7423 8143



Introduction and purpose of this White Paper

More than ever, housing providers are operating in complex and challenging times. They are required to deliver more for their residents – with less resource and within a strict legislative and regulatory framework. The commercial pressures on procurement teams to deliver savings (particularly in a COVID-19 world) lie uncomfortably alongside the need to lever added value through social, environmental and resident-led initiatives.

Looming over any procurement teams' day-to-day challenges is the forthcoming Building Safety Act, which incorporates the recommendations set out by Dame Judith Hackitt in her report, "Building a Safer Future, the Independent Review of Building Regulations and Fire Safety". Dame Judith recognises in the report that procurement sets the tone and direction of the relationships between the client, designer, contractor and their sub-contractors. A focus on low cost can present challenges to producing safe buildings.

Historically, the need to secure cost savings and "best value" has translated into using a relative price evaluation model. The most widely used of these models awards the highest marks for the lowest price, with the other, more expensive bids, receiving pro-rated scores. This encourages a race to the bottom response from bidders. Clients are effectively asking bidders to guess the lowest price to win the contract – not the actual price they think is necessary to perform the contract. Such an approach can undermine any possible relationship between client and contractor and put the delivery of value-based outcomes at risk.

Trowers & Hamblins has led a series of workshops with housing associations, consultants, law firms, sector experts and contractors investigating alternative price evaluation models. The objective of the workshops was to source models that encourage the submission of bids that demonstrate sustainable value across the life of the contract, rather than commuted savings at the point of procurement. Through these workshops, organisations shared their challenges, bid results and experience and this has been invaluable in developing this White Paper. This White Paper is designed to act as a "conversation starter" and is being issued in December 2020 for a period of twelve months. In that initial twelve months we will seek to hold webinars/workshops to discuss the contents of this White Paper and options for price evaluation in the sector and seek feedback and recommendations of alternative models.

Ultimately, the purpose of this White Paper is to start a collaborative conversation within the sector, and prompt further research into some of the assumptions framed within the White Paper and the potential solutions provided so that a robust set of data can be created to inform future procurement decisions and inform value-based decisions for the day-to-day contracts that housing providers procure. This White Paper asks three things of you:

1. to adopt and test the eight different pricing models set out, via real life scenarios and desktop studies;
2. to feed back from your use of all or any of the eight pricing models anonymised bid results and your observations on the models; and
3. to put forward alternative price evaluation models that can be tested and adopted by working group members and all other interested housing associations which can in turn feed back into the acquired knowledge base.

It is anticipated that this initial phase will be concluded in January/February 2022 (to allow sufficient time to model and test the various price evaluation formulae). At that point, we will compile all relevant feedback (including alternative price evaluation models) and issue a further consultation paper to the sector, with the aim of producing a final report following a further period of final consultation.

In order to start this collaborative conversation, this White Paper:

- Provides a simple and easy to understand overview of the eight different pricing models suitable for procuring different types of contracts commonly procured within the sector.
- Provides all information necessary to fulfil the obligation for “transparency” under a regulated procurement (although these formulae are suitable for both regulated and non-regulated procurements).
- Sets out a clear, simple and standardised method of price evaluation for contractors to understand and respond to. By using these alternative price evaluation models, procurement teams should be provided with the confidence to drive and demonstrate sustainable value through robust and compliant processes.

Why price evaluation models?

In all of the workshops undertaken in preparation of this White Paper, it was understood and acknowledged by the participants that price is only part of the procurement decision-making equation: quality and other delivery or technical requirements play an important role and (given appropriate prominence in the overall bidding model) can determine the outcome of the procurement. Nevertheless, what a bidder is asked to price (e.g. what elements of its total costs of delivery of the contract it is asked to declare) in its bid can affect: bidder behaviour; who wins the contract; and how accurately the bid reflects the outcome. This White Paper focuses on price models, as the less-explored element of bid evaluation.

The aim of the White Paper is to consider whether viable alternatives to the most common “lowest price = highest marks” evaluation model exist and, if they do, whether they could be used in housing sector procurements for contracts commonly outsourced by housing providers.

How to navigate this White Paper

Introduction

The price evaluation options are neither prescriptive nor exhaustive. Instead, this White Paper illustrates some of the alternative price evaluation models already available and used in the sector. Housing providers should now closely scrutinise their procurement practice and consider how the choice of evaluation formula impacts bidder behaviour and could influence the resulting contract award.

Overview

This White Paper sets out how each price evaluation formula works, helping the reader assess which is the most appropriate for its contract. We hope that these models will assist procurement teams in taking informed decisions on which price evaluation formula is most appropriate for their particular procurement exercise.

Each example model sets out:

1. The price evaluation formula – presenting this in the procurement documents clearly informs bidders of the client’s price evaluation approach.
2. A brief description of how the formula works – setting out any assumptions or pre-requisites of the formula (e.g. optimum price/quality threshold or floor) which the client needs to input into the formula (which, in a public procurement process should be disclosed to the bidders in the procurement documents for reasons of transparency).
3. Results – each formula has been tested by workshop contributors using example bid results.
4. A summary of “points to note” about the price evaluation formula – e.g. what behaviours the formula may encourage and whether the formula is successful in prioritising quality and cost-effective outcomes, rather than lowest-price results.
5. Each section ends with a suggestion as to the type of contracts the formula may be suitable for, in terms of outcomes and how effective it is in taking into

account of different tendering priorities.

Example bid information

The workshops used example bid information to provide a quick comparison between the results of the different formulae and what happened to the results if a different price/quality ratio was adopted. Timing has dictated that the workshops did not consider the application of the formulae to existing “real-life” bid information (e.g. priced bids taken from actual procurements run by the contributing housing associations).

One of the aims of this conversation starter is for readers to use the different formulae for “real-life” procurements. This is particularly important, given that one of the assumptions of this White Paper is that how a client evaluates price impacts bidder behaviour, and we are keen to understand whether this assumption is correct.

The example bid information used throughout this White Paper is set out below:

	Price	Quality
Bidder 1 - Hi P, Hi Q	£200,000	90
Bidder 2 – Hi P, Av Q	£200,000	70
Bidder 3 – Hi P, Lo Q	£200,000	50
Bidder 4 – Av P, Hi Q	£150,000	90
Bidder 5 – Av P, Av Q	£150,000	70
Bidder 6 – Av P, Lo Q	£150,000	50
Bidder 7 – Lo P, Av Q	£100,000	70
Bidder 8 – Lo P, Lo Q	£100,000	50

Evaluation: an overview

Introduction

The UK housing sector spends approximately £18 billion each year on procuring outsourced goods, works and services. EU and domestic procurement rules regulate a significant amount of this spending. Housing associations and local authorities are obliged to comply with these rules (and their own internal rules, e.g. standing orders) when purchasing goods, works and services (and regulation will continue to be a feature of the procurement landscape, even in a post-Brexit world). The key objective of public procurement in the UK is to pursue “value for money” through transparent means.

“Value for money” or “VFM” can be defined as “the best mix of quality and effectiveness for the least outlay over the period of use of the goods or works and services bought”¹. In the UK, this means moving away from the common method of asking bidders to submit their lowest prices to win a contract, and instead considering a mixture of price and non-price elements when awarding a contract in line with value for money principles.

The price evaluation models set out in this White Paper can be used for regulated and non-regulated procurement procedures run by housing providers. However, where a housing providers seeks to procure a public works, services or supply contract that exceeds the relevant defined financial threshold, then it must follow the Public Contracts Regulations 2015 (the implementing legislation for the EU Directive 2014) (the Regulations) unless a relevant exemption applies. Regulation 67 of the Regulations sets out the rules applying to bid evaluation and Regulation 68 sets out provisions relating to life cycle costing (see price evaluation model 8).

The evaluation stage of a bid process

The price of a bid and how that price is treated in the context of the overall bid (e.g. when considered with the non-price elements) is important and is, more often than not, likely to determine who wins the contract.

The evaluation stage is therefore the key stage of a public procurement procedure and represents the touchpoint for the client to demonstrate compliance with its obligations of transparency, non-discrimination and equal treatment. It is also addressed by specific EU and domestic rules and is the stage that is the subject of significant scrutiny and judicial challenge. This is for two main reasons:

1. Given the 30 day time-limit on raising procurement challenges², challenging other breaches occurring through the procurement process is likely to be time-barred by the date of the award announcement.
2. The level of detail provided by the award notification letters³ allows bidders to spot potential breaches of the procurement rules in the conduct of the evaluation. The ten-day mandatory standstill period provides bidders with a practical opportunity to raise a judicial challenge and seek a meaningful remedy.

¹ HMT Managing public money (2013, with annexes revised as at September 2019), Annex 4.6 Procurement, paragraph A.4.6.3

² Regulation 92 of the Public Contracts Regulations 2015

³ Regulation 86 of the Public Contracts Regulations 2015

In order to minimise the risk of challenge, clients need to undertake the evaluation process in accordance with the procurement rules and as stated in the procurement documents. They also need to provide accurate feedback information, consistent with the evaluation criteria set out in the procurement documents.

“Most economically advantageous tender”

In public procurement terms, the best VFM bid is termed “the most economically advantageous tender” (or “MEAT”).⁴ MEAT is ascertained from the point of view of the contracting authority and can be evaluated using three different types of award criteria:

- price; and/or
- non-price financial considerations⁵ (e.g. running costs or other life-cycle costs); and
- other delivery criteria (e.g. qualitative, environmental and/or social aspects, timing etc.)

Where price is not the sole award criterion, a client needs to evaluate all of the bids according to a price/quality mix⁶. This ranking process usually/invariably requires the conversion of quality scores and prices into points by way of a formula or formulae.

Price evaluation formulae

A client has the discretion to select the evaluation formula it wishes to use in order to select the MEAT for its contract⁷. Price evaluation formulae treat bid prices differently and interact with the quality element of the bids differently. As such, the choice of a price evaluation formula has a significant impact on the outcome of the bid process.

There are two different approaches in evaluating price as part of an overall bid submission that tend to dominate UK housing practice.

The first is a “relative” approach. This approach uses prices from one or more bids as the basis for evaluating each individual bid, (e.g. the lowest price). The second is an “absolute” or “modular” approach. This approach either uses a pre-established price set by the contracting authority as the basis for evaluating each bid price, or it uses the price and quality of the individual bid itself, without reference to the other bids submitted.

Some contracting authorities also use the mean average of prices but there is a school of thought that this evaluation method does not identify the MEAT. Indeed, the Court of Justice of the European Union in the Kingdom of Spain⁸ found that a price evaluation methodology which identified the MEAT on the basis of the price closest to the average of all tendered prices did not comply with the MEAT criterion. That said, it is the Working Group’s (and anecdotal) experience that this remains a popular method of identifying MEAT in UK procurement practice.

The relative Lowest Bid Model (Model 2) awards the lowest price the highest mark. Other, more expensive prices, receive scores relative to the difference

⁴ Regulation 67 of the Public Contracts Regulations 2015

⁵ Regulation 67(3) of the Public Contracts Regulations 2015

⁶ Regulation 67(2) of the Public Contracts Regulations 2015

⁷ The criteria must assist in identifying the offer which is the most economical advantageous tender from the contracting authority’s point of view – *Siac Construction Limited v County Council of the County of Mayo* [Case C-19/00]

⁸ *Kingdom of Spain v European Commission* (Case T-402/06)

between their prices and the lowest one. This model is one of the most popular methods of evaluating price in the UK. However, it has been criticised by practitioners, academics and bidders alike for producing irrational or unexpected results⁹. Additionally, the Government (in its Bid Evaluation Guidance Note appended to the Outsourcing Playbook) has noted that relative pricing models “should be treated with caution” and only used where there is “a specific business reason”. Whilst the Outsourcing Playbook is designed for central government departments, the guidelines, principles and rules are considered good practice for all professionals involved in procurement across the public sector.

Criticisms include:

- The results cannot be predicted prior to the actual evaluation being carried out, as they depend on an undisclosed criterion – the lowest price.
- The model therefore offends the overriding principle of transparency on the basis that the price award criterion is only established once all of the bids have been opened and the lowest price ascertained.
- Ranking paradox: the evaluation results are affected by the absence or presence of every bid, so the exclusion of a bid for being abnormally low, or the inclusion of a low-priced/non-compliant bid can affect the overall results in ways that cannot be identified ahead of the actual price and its evaluation score being ascertained and allocated.

The evaluation of “quality” criteria

Whilst price is one side of the evaluation picture, a client may also take into account non-price criteria (e.g. running costs or life cycle costing) and/or other delivery (“quality”) criteria. How clients treat “quality” criteria at the evaluation stage is equally important to the success of the overall award decision.

Practice in the UK housing sector often treats quality considerations as individual exam questions, asking bidders to provide a prose answer to the question posed. This quality side of the bid has therefore become the preserve of professional bid writing teams or practitioners, adept at compiling appealing answers to the bid questions posed. What is often lost in such prose is the ability to drill down into the competency and technical delivery requirements of the contract.

Despite this practice, this White Paper assumes quality evaluation takes place against the background of a complete and comprehensive specification for the contract, and the quality questions link to the subject-matter of the contract or the specification. Further, the White Paper assumes that the quality evaluation criteria are proportionate, transparent and verifiable, and favour bids offering the highest value and lowest risk to the client.

This White Paper also assumes that those evaluating the responses to the quality submissions are competent to do so, and that they possess the requisite expertise to evaluate the bid in line with the judgment set out by the Court of Session (Outer House) in the case of *Aquatron Marine (t/a Aquatron Breathing Air Systems) v Strathclyde Fire Board*¹⁰.

9 Telgen J, 'Supplier Selection in the Public Procurement Directive Economic Loopholes and Intricacies' (EC Europa website, 26 June 2014) http://ec.europa.eu/internal_market/economic_analysis/docs/presentations/20140626-jan-telgen_en.pdf; Bowsler M, 'Random Effects of Scoring Price in a Tender Evaluation' (Monckton Chambers Blog, 20 February 2015) < <https://www.monckton.com/publication/random-effects-scoring-price-tender-evaluation/>>; Rees R, 'Tendering: the price is right?', *Procurement & Outsourcing Journal* (January 2016)"; Heard E, 'Procurement Challenges – Price/Quality Evaluations (2017)

10 [2007] CSOH 185

The interplay between price and quality

In isolation, the price evaluation model will not produce a robust evaluation result that avoids favouring the lowest-priced bid. A client needs to confirm what its specific procurement objectives are for both cost and quality considerations before the procurement process starts.

In light of those objectives, the HM Treasury in its “Outsourcing Playbook V2.0”¹¹ recommends a client considers:

- what pre-market engagement it needs to undertake to shape the evaluation methodology – and test that suppliers can deliver the required services at an affordable cost;
- which cost model ensures the salient points of pricing information are evaluated;
- whether it can evaluate whole life cost, rather than just the initial costs;
- what price/quality weighting split best reflects its priorities for the contract?
- if setting minimum quality thresholds, that they are clear and the requirement appropriate;
- whether a lower cost threshold, below which the bid is considered abnormally low and investigated in accordance with the public procurement legal regime, is desirable or relevant; and
- how the scoring rules differentiate between bids offering minimum quality and those offering real value (e.g. to avoid bid bunching).

In the workshops, gathered experience suggested that procurement procedures tend to provide the best results where clients have spent time and effort at the outset of the exercise to ensure that the evaluation methodology:

- intrusively investigates quality and delivery proposals in the “real world”;
- uses a price evaluation formula which discourages a race to the bottom; and
- adopts a holistic MEAT or VFM approach by adopting a price evaluation model that takes into account price and quality in a balanced way without bias towards lowest price.

Bidder behaviour

All of the above decisions concerning the shape and method of evaluation are key to the outcome of the procurement process and are likely to determine how a bidder approaches its bid submission.

The choice of the evaluation methodology (including the price formula) provides a clear indication to the bidder as to:

- how it needs to treat price to win the bid,
- how the client views price in relation to quality in terms of importance,
- whether the client has a coherent approach to its procurement objectives.

To focus on the first point above, the selection of a relative lowest pricing model, whereby lowest price equals highest marks, encourages poor bidder behaviour by asking them to provide a price that it thinks is going to be low enough to win the contract, not a realistic price for the contract requirement to be performed.

This evaluation message is capable of creating a flawed result, particularly when

¹¹ Government Commercial Function, The Outsourcing Playbook V2.0 (June 2020) – Section 5, Preparing to go to market

considered in light of the current (and historic) state of the UK construction industry, where margins are low and competition is significant. If a contractor bids on the basis of what it thinks its competitor will bid, the bid price may have no bearing on the actual cost it will take it to perform the contract. The contractor will then seek to make up the money it lost to win the contract by submitting claims for extra variations and, at worst engineering disputes. Put another way, because the relationship has been established on a fiction, the result of the procurement can lead to mistrust and frustration between the parties, poor payment practices and poor quality and safety outcomes.

How price interplays with quality can also mean that, despite overall weightings, price remains the distinguishing factor in MEAT procurements.

Price will clearly be the distinguishing factor if it is allocated a significant/higher weighting over quality criteria (e.g. a price/quality weighting split of 60/40%). However, less known are the evaluation practices that can have the effect of preferring price, even if the quality weighting seems to give a preference to the non-price criteria. For example:

1. The flat scoring of quality (e.g. scoring bids on a 1-5 scale with 5 only being awarded for responses that exceed requirements and 2 being unsatisfactory, leading to acceptable, good quality bids being scored a 3 or 4 score).
2. Providing a “floor” (minimum score) for quality elements (e.g. requiring a minimum of 3 on a 1-5 scale for each quality criterion).

On the basis of a price/quality split of 60/40 weightings, this means that the acceptable quality scores range from 3 (minimum) – 5 (maximum), resulting in a maximum difference of 2 points per question/sub-criterion. At 60% weight, the maximum difference in the final score will be 12 points.

Compare price where, if scored on a relative basis, the relevant scoring range is from 0-100. At 40% weight, this translates to a maximum difference of 40 points, which is over three times the number of points available for the quality score and, potentially, a significant differentiator between bids.

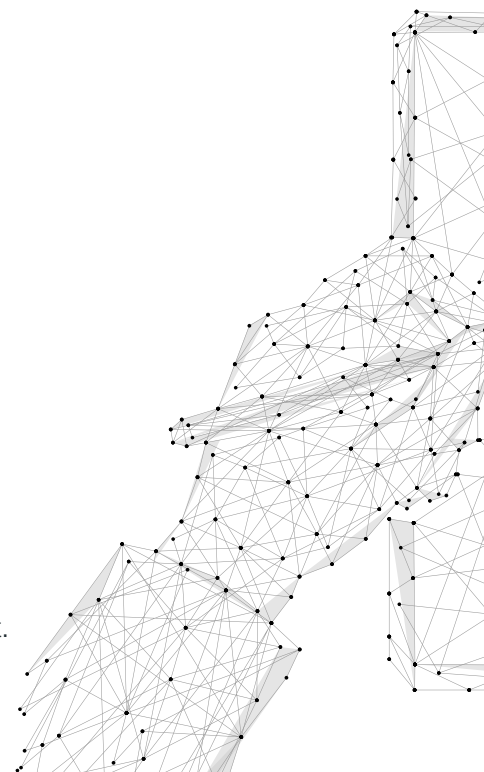
Abnormally low bids (ALBs)

No procurement process is predictable and in certain circumstances, clients find themselves considering a bid with a price that seems too good to be true. The public procurement regime contains mechanisms to guard against abnormally low bids which might be based on technically, economically, or legally unsound assumptions or practices.

Regulation 69 of the Regulations, which implements Article 69 of Directive 2014/24/EU on public procurement, obliges contract authorities to require bidders to explain their proposed costs or prices where the bid appears abnormally low. In particular, the Regulations set out that the explanations for abnormally low bids may relate to, for example:

1. the economics of the manufacturing process;
2. the technical solution chosen;
3. the originality of the works, supplies or services; and/or
4. the possibility of the bidder obtaining state aid.

Clients must consider the evidence provided by bidders and may only reject a bid where that evidence does not satisfactorily account for the low price or cost.



That does not mean that a client has to automatically accept the evidence the bidder has presented and it is always open to the client to undertake a vigorous and robust investigation and rely on any opposing opinion offered by their professional financial advisors or project team members.

Additionally, the Regulations place an obligation on clients to investigate a bid where it has established that the bid is abnormally low as a result of its non-compliance with obligations in the fields of environmental, social and labour laws.

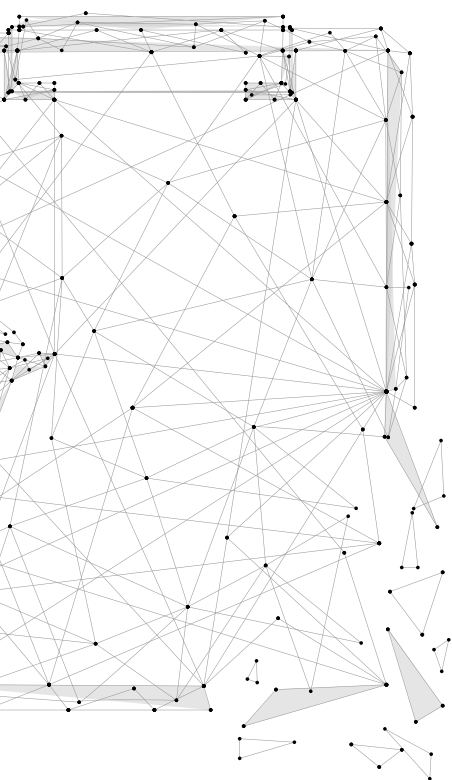
The Regulations place an onus on clients to actively consider whether the costs and prices submitted by a bidder are abnormally low. It is therefore essential that clients carry out effective and thorough pre-market engagement to enable them to effectively identify such abnormally low bids and to deal with them accordingly: rejecting them if, after careful investigation and scrutiny, the justifications provided by the bidder do not satisfy the client that the contract is deliverable across its duration for the price bid.

In terms of identifying abnormally low bids, the Government (in chapter 10 of the Outsourcing Playbook) suggests that any bid that is 10% below the average of all bids, or the “should cost model” should be considered abnormally low (the should cost model is essentially the whole-life cost model of the contract).

We would suggest some caution with identifying abnormally low bids by reference to the other bids received, and instead suggest that abnormally low bids should be considered by reference to the should cost model. There is a risk in identifying abnormally low bids by reference to the bids received as lower priced bids may be based on how a specification has been drafted and understood by the bidders. In any event, the sector should be asking the Government to use the rules reform to create a clear and unambiguous set of pricing rules that drives value into the heart of a project and make it clear that MEAT does not always mean the bid with the lowest price.

Post-Brexit considerations

This White Paper has been compiled in light of the current version of the Outsourcing Playbook. We are also aware of the Cabinet Office’s work for the Post-Brexit Rules Reform Project and the forthcoming Green Paper for post-Brexit procurement reform. We will keep all of this under review and update our findings and the ultimate guide as these initiatives move forward.



Overview of formulae considered in this White Paper

We have set out below a summary of the formulae considered in this White Paper, setting out the different models, along with key information about each.

Model name	Absolute or Relative?	Price/Quality or Price only?	Key elements
Model 1 – Standard differential	Relative	Price only	The lowest priced bid receives the full weighting available for price and the other, more expensive, bidders receive a proportionately lower score.
Model 2 – Lowest bid	Relative	Price only	The lowest priced bid receives the full weighting available for price and the other, more expensive, bidders receive lower scores on a reducing basis (but these scores are not directly proportionately lower).
Model 3 – Relative price and quality	Relative	Price/Quality	This model uses either model 1 or model 2 to evaluate price (here we have used model 2), and then treats quality in the same way by weighting up the highest quality bid to the full available weighting, with the lower quality bids receiving lower scores on a reducing (i.e. not directly proportionate) basis.
Model 4 – Balanced price/quality model with thresholds	Absolute	Price only	The client sets minimum price and quality thresholds, and bidders who fail to meet those thresholds are excluded. The bidder with the lowest overall score is the successful bidder.
Model 5 – Weighted/price quality comparison	Relative	Price/Quality	Total score demonstrates the relationship between price and quality by effectively deducting price from quality based on the applied weighting.
Model 6 – Optimum pricing	Absolute	Price only	The client sets an "optimum price" and bidders who submit prices that are the closest to this price will receive higher price scores. The further a bidder is from the optimum price, the lower their price score.
Model 7 – Price/quality ratio	Absolute	Price/Quality	Uses a ratio to assess the quantitative relationship between the bidders' quality score and their submitted price.
Model 8 – Life cycle costing	Absolute	Price/Quality	Uses data provided by bidders to calculate the "true" cost of a product throughout its entire life, rather than just the initial acquisition costs.

When is this model most useful?	When is the model not suitable?
For simple procurements (including commodities), either where the specification required is clear or where a pre-market estimate can be easily identified so that ALBs can be dealt with appropriately.	Where quality plays a crucial role in the procurement procedure, and where the client needs to encourage bidders away from a "race to the bottom" (e.g. for procurements relating to building safety or where innovation or products with an increased CapEx/ lower life-cycle costs are being procured (ie works contracts adapting emerging technologies or Modern Methods of Construction))
For simple procurements (including commodities), either where the specification required is clear or where a pre-market estimate can be easily identified so that ALBs can be dealt with appropriately.	Where quality plays a crucial role in the procurement procedure, and where the client needs to encourage bidders away from a "race to the bottom" (e.g. for procurements relating to building quality or safety or where innovation or products with an increased CapEx/lower life-cycle costs are being procured (ie works contracts adapting emerging technologies or Modern Methods of Construction))
Suitable across all contract types where the client is seeking to retain the price/quality weightings and wants to treat price and quality as declared in the weightings.	Mathematically this model retains the declared price/quality weighing where model 1 and 2 are used, but does not necessarily prevent a "race to the bottom" and therefore the shortcomings of models 1 and 2 set out above remain relevant.
Suitable where the client is able to accurately set a minimum price (and quality) thresholds, or where the client is using the open procedure (to potentially reduce the number of responses which need to be fully evaluated by excluding outliers).	Where the client is unable to set a minimum price or quality threshold, either on a budgetary basis (eg. because it is an unclear scope/framework or call-off basis or priced against a schedule of rates rather than on a lump sum basis).
Applies a direct comparison between price (as a negative) and quality (as a positive) – can view the impact of price on quality.	Calculations involved in the formula are complex and need to be explained clearly for transparency requirements.
Where the client has a set budget or a strong idea as to what it should pay for the requirement.	Where the client cannot be confident in its price (set through pre-market engagement or otherwise) or where the market conditions are uncertain and the client does not buy-in to a value-led rather than cost-led procurement approach.
Where the quality score relates to a specific output or a quantifiable result and the client wants a "price per quality unit" approach to its evaluation.	This model effectively weights the price/quality element as 50/50. This may be inappropriate where the quality element is not sufficiently articulated, or evaluates elements that are not the central quality or delivery elements of the contract. It may also be that a client's internal rules require a particular price/quality weighting split other than 50/50%.
Where the client is procuring a product with increased maintenance or replacement requirements (eg over a long-term life-cycle or otherwise), and needs to evaluate the total cost of a product.	May be less suitable for services or those works contracts with a short life-cycle.

Model 1

Standard differential

The model

$$100 - \left(\frac{\text{(Bid received – lowest bid)}}{\text{(Lowest bid / 100)}} \right) \times \text{Price weighting} = \text{Price score}$$

Key elements

- This is a relative pricing model. The price of the bid received is evaluated against the lowest price received and is scored on a pro-rata basis. As you will see from the graph below, this formula produces a straight line (i.e. a direct proportion) between the lowest bid and the other bids received.
- Higher priced bids lose points on a proportionally equal basis compared to lower priced bids.
- Quality is not included in this model. The quality score is subsequently added to the price score on a total sum basis.

How it works

Each priced bid will score proportionally less on price according to the difference against the lowest priced bid calculated by the formula given above.

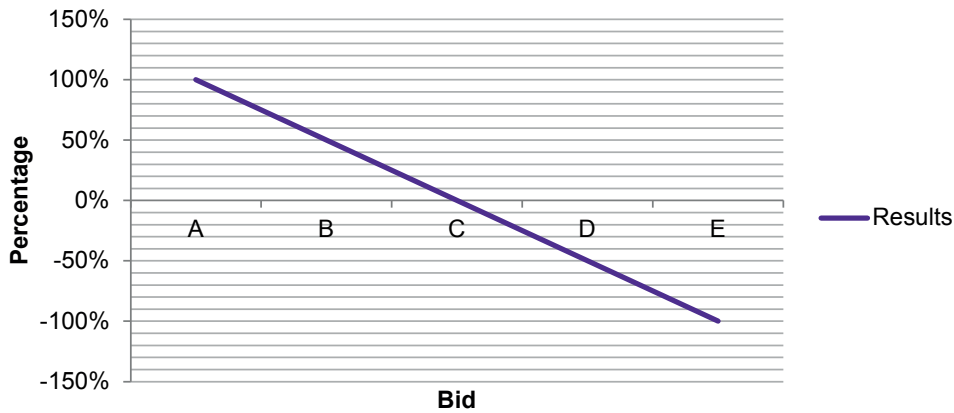
The lowest priced bid, and any other bids equal to the lowest priced bid, will score the maximum weighted points available for price.

Higher priced bids score proportionally less according to how much more expensive they are compared to the lowest priced bid.

For example:

Bid	Price bid	Scores	Result
A	£100	100 / 100	100%
B	£150	100 / 150	50%
C	£200	100 / 200	0%
D	£250	100 / 250	-50%
E	£300	100 / 300	-100%

Results



Results

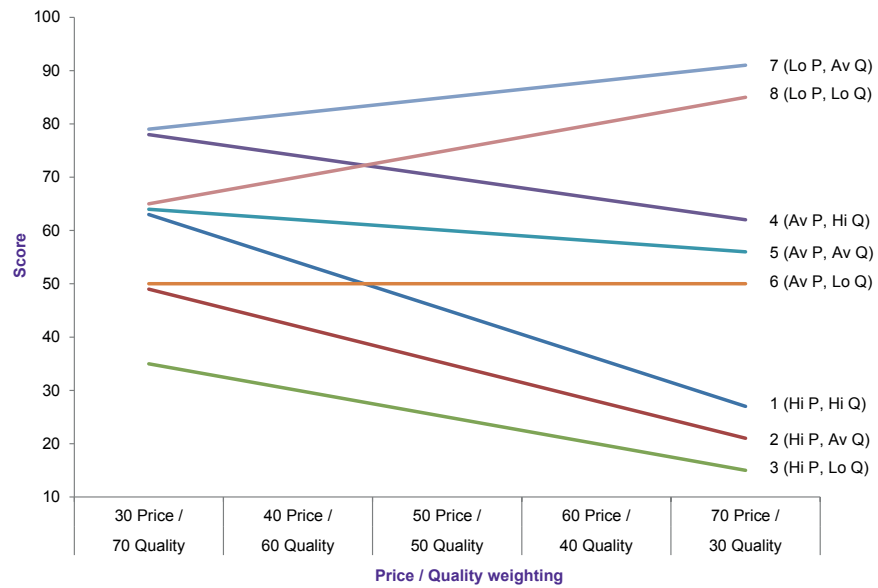
The effect of the formula on price only is illustrated in the table above.

The following table summarises the effect and weighted outcome for the example bid results (where the example quality score will be added to the price score as a total sum formula).

Example bidder	30 Price / 70 Quality		40 Price / 60 Quality		50 Price / 50 Quality		60 Price / 40 Quality		70 Price / 30 Quality	
	S	R	S	R	S	R	S	R	S	R
1 (Hi P, Hi Q)	63	5	54	5	45	6	36	6	27	6
2 (Hi P, Av Q)	49	7	42	7	35	7	28	7	21	7
3 (Hi P, Lo Q)	35	8	30	8	25	8	20	8	15	8
4 (Av P, Hi Q)	78	2	74	2	70	3	66	3	62	3
5 (Av P, Av Q)	64	4	62	4	60	4	58	4	56	4
6 (Av P, Lo Q)	50	6	50	6	50	5	50	5	50	5
7 (Lo P, Av Q)	79	1	82	1	85	1	88	1	91	1
8 (Lo P, Lo Q)	65	3	70	3	75	2	80	2	85	2

S = Score R = Rank

The graph below sets out the total scores achieved for each of the example bidders across the 5 different weightings. The graph demonstrates that, with this model, as the price weighting increases the client will favour lower priced bids at the expense of higher quality.



Points to note

This formula is more likely to prejudice higher priced offers regardless of quality achieved.

An offer which is the lowest price and the highest quality will always win irrespective of price/quality ratio applied under this model, although in practice such a bid may prove elusive! In fact, on a weighting of up to 70/30 Q/P the MEAT is more likely to be average quality/lowest price.

This formula should only be used by clients who are familiar with current market prices given the risk of distortion on results caused by the submission of (and non-rejection of) an abnormally low bid.

The price formula treats all prices proportionally and equally in relation to the lowest priced bid. Given this, bid prices which are 100% higher than the lowest priced bid will generate a negative points score for price and this should be anticipated in the scoring rules set out in the bid documents for transparency purposes.

What's it good for?

- A contract where the specification is clearly and completely defined.
- Where a pre-contract estimate can be reasonably determined so that potential abnormally low bids are easily identified (and rejected).
- Where the market can be expected to price within a predictable range.
- Where the buyer is sensitive to a high price and wants to focus the bidders on the need to offer a lower price.

Model 2

Lowest bid

The model

$$\left(\frac{\text{Lowest bid}}{\text{Bid received}} \right) \times \text{Price weighting} = \text{Price score}$$

Key elements

- This is a relative pricing model. The price of the bid received is evaluated against the lowest price received and is scored on a reducing basis.
- The further away the bid price is to the lowest price, the lower the score received.
- Higher priced bids lose points, but you will see from the graph below that this is not on a proportionately equal basis compared to lower priced bids.
- Quality is not included in this model. The quality score is subsequently added to the price score on a total sum basis.

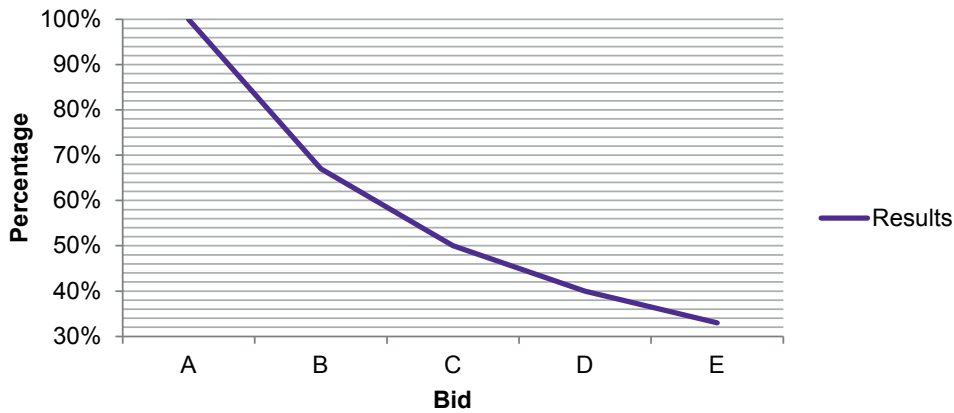
How it works

The lowest priced bid will score the maximum points available for price.

Higher priced bids score proportionally less according to how much more expensive they are compared to the lowest priced bid, calculated by the formula given above.

Bid	Price bid	Scores	Result
A	£100	100 / 100	100%
B	£150	100 / 150	67%
C	£200	100 / 200	50%
D	£250	100 / 250	40%
E	£300	100 / 300	33%

Results



Results

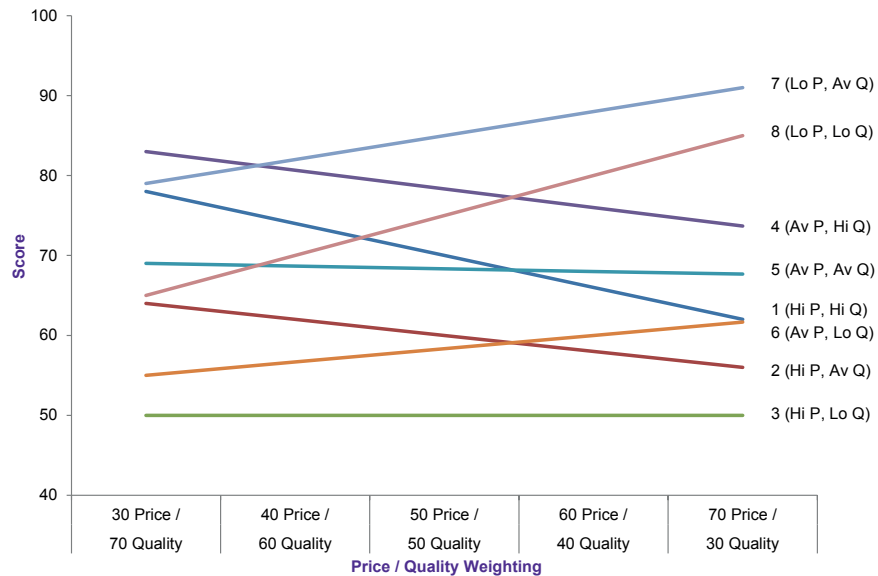
The effect of the formula on price only is illustrated in the table above. It should be noted that the curve demonstrates that the reduction in price scores is not directly proportionate. Instead, lower priced bids receive scores on an inversely proportionate basis. That is to say that a price submission that is exactly in the middle of the highest and lowest received prices does not receive a score directly in the middle. This methodology can therefore be said to penalise those bidders who submit prices in the middle of the range.

The following table summarises the effect and weighted outcome for the example bid results.

Example bidder	30 Price / 70 Quality		40 Price / 60 Quality		50 Price / 50 Quality		60 Price / 40 Quality		70 Price / 30 Quality	
	S	R	S	R	S	R	S	R	S	R
1 (Hi P, Hi Q)	78	3	74	3	70	4	66	5	62	5
2 (Hi P, Av Q)	64	6	62	6	60	6	58	7	56	7
3 (Hi P, Lo Q)	50	8	50	8	50	8	50	8	50	8
4 (Av P, Hi Q)	83	1	80.67	2	78.33	2	76	3	73.67	3
5 (Av P, Av Q)	69	4	68.67	5	68.33	5	68	4	67.67	4
6 (Av P, Lo Q)	55	7	56.67	7	58.33	7	60	6	61.67	6
7 (Lo P, Av Q)	79	2	82	1	85	1	88	1	91	1
8 (Lo P, Lo Q)	65	5	70	4	75	3	80	2	85	2

S = Score R = Rank

The graph below sets out the total scores achieved for each of the example bidders across the five different weightings. The graph demonstrates that, with this model, as the price weighting increases the client will favour lower priced bids at the expense of higher quality.



Points to note

An offer which is the lowest price and the highest quality will always win irrespective of price/quality ratio applied under this model, although in practice such a bid may prove elusive!

Increasing the price weighting to 70% increases the likelihood of an average price / high quality offer being successful. Increasing the quality weighting to 70% increases the likelihood of a high price / high quality offer being successful.

What's it good for?

- A contract opportunity tending towards an output/performance specification.
- Where a pre-contract estimate is difficult to determine with accuracy.
- Where it's difficult to predict how the market will price.
- Where the buyer is prepared to pay a higher price for the right quality solution.

Model 3

Relative price and quality

The model

$$\left(\frac{\text{Lowest bid}}{\text{Bid received}} \right) \times \text{Price weighting} + \left(\frac{\text{Quality of bid}}{\text{Best quality}} \right) \times \text{Quality weighting} = \text{Total score}$$

Key elements

- This is a relative evaluation model for both the price and quality elements of a bid.
- To evaluate price under this model, a client should choose either Model 1 or Model 2.
- Where a client is prepared to pay more for a higher quality bid, a higher quality weighting would be appropriate.
- Clients opting for a lower weighting on price may wish to employ a further price control technique (e.g. a maximum price ceiling) to protect against extremely high bids, or conversely a minimum price floor to protect against extremely low bids.

How it works

For this example, we have adopted Model 2. This model then applies the principles of the Lowest Bid Model to the quality submissions as well as the price submission. The effect of this is that the lowest price receives the full price weighting, and the highest quality will receive the full quality weighting.

Using this model a bidder has the potential to achieve a score of 100% (if its bid contains the lowest price and the highest quality submission). It also has the benefit of preserving the weighting ratio as declared in the procurement documents because the starting point is the specified weighting, not the raw score. This turns an absolute quality evaluation model into a relative evaluation model, but treats both elements equally.

The model uses both quality and price to reach a final score. Clients must first complete the quality assessment to achieve a single quality score for each bidder. The highest quality score will achieve the maximum potential quality weighting, with other lower quality scores awarded weightings in accordance with the evaluation model. Clients then evaluate price using the Lowest Bid Model (Model 2) where the lowest price will achieve the maximum potential price weighting and the remaining bids are awarded on a reducing basis (i.e. not directly proportionate).

The weighted price and quality scores for each bidder are added together to reach an overall score. The bid with the highest overall score is the MEAT.

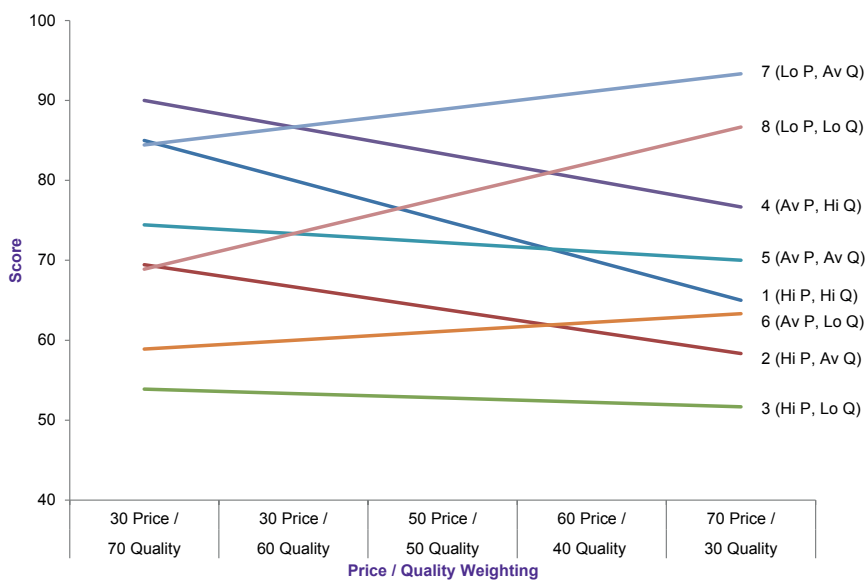
Results

The table below applies the model to the example bid results with price/quality weightings ranging from 30/70% to 70/30%.

Example bidder	30 Price / 70 Quality		40 Price / 60 Quality		50 Price / 50 Quality		60 Price / 40 Quality		70 Price / 30 Quality	
	S	R	S	R	S	R	S	R	S	R
1 (Hi P, Hi Q)	85	2	80	3	75	4	70	5	65	5
2 (Hi P, Av Q)	69.44	5	66.67	6	63.89	6	61.11	7	58.33	7
3 (Hi P, Lo Q)	53.89	8	53.33	8	52.78	8	52.22	8	51.67	8
4 (Av P, Hi Q)	90	1	86.67	1	83.33	2	80	3	76.67	3
5 (Av P, Av Q)	74.44	4	73.33	5	72.22	5	71.11	4	70	4
6 (Av P, Lo Q)	58.89	7	60	7	61.11	7	62.22	6	63.33	6
7 (Lo P, Av Q)	84.44	3	86.67	1	88.89	1	91.11	1	93.33	1
8 (Lo P, Lo Q)	68.89	6	73.33	4	77.78	3	82.22	2	86.67	2

S = Score R = Rank

The impact of a “quality-heavy” ratio is evident in the table. The bid offering high quality for an average price is favoured above the bid offering average quality for a low price. This illustrates the importance of clients establishing the appropriate price/quality ratio to meet the needs of their project and business and undertaking a dry-run of their selected model to ensure it produces the desired result.



Points to note

This relative model is dependent on other bidders. Removal of lowest price or highest quality bids (due to abnormally low bid rules) will require a full re-evaluation as ranked positions are relative and will change.

Bidders with the cheapest price or the highest quality are rewarded top marks. Those sitting in an average or mid table position have a reduced likelihood of success.

This model offers no protection against high bids. Clients are able to mitigate some risk by defining minimum and maximum price and quality thresholds in addition to the formula. In a regulated procurement, these will need to be declared in the bid documents.

There is a risk that a poor quality/high price submission could be successful if other bidders are few and/or score equally poorly. The client may end up with the “best of a bad bunch” and pay an inflated rate for the quality it is to receive. A minimum quality threshold (e.g. a “quality floor”) would provide some protection against this risk.

What's it good for?

- This model would suit all contract and category types where the client is seeking to promote a balanced intent to the market.
- It is suitable for where the specification has scope for bidders to deliver innovation and efficiencies and, where the criteria permit, these can be rewarded.

Model 4

Balanced price/quality model with thresholds

The model

$$\left(\frac{\text{Bid received}}{\text{Minimum price threshold}} \times \text{Price weighting} \right) + \left(\frac{\text{Minimum quality threshold}}{\text{Quality of bid}} \times \text{Quality weighting} \right) = \text{Total score}$$

Key elements

- This is an absolute evaluation model. The individual scores for price and quality do not depend on the bids submitted by other bidders.
- This model requires clients to set a maximum price ceiling, as well as a minimum quality threshold.
- Perhaps counterintuitively, the bidder with the lowest overall score for price and quality combined is the successful bidder.
- Any bidder below the minimum price threshold and/or the minimum quality threshold is disqualified.
- The bidder closest to the minimum price threshold will receive the lowest score (bidders receive higher scores as they become more expensive).
- The bidder who scores the highest and is furthest from the minimum quality threshold will score the lowest marks for quality. Any bidder who scores below the minimum quality threshold is also disqualified.

How it works

In order to set the minimum price threshold and the minimum quality threshold, clients need to decide (a) what the market is willing to sustain (including a sustainable profit margin across the lifetime of a contract), and (b) what their minimum quality requirements are.

Clients therefore need to have a clear understanding of what the project will cost before bids are invited. A detailed pre-market engagement exercise can help a client set the minimum price threshold.

Using the formula above, bids are compared against the minimum price threshold and the minimum quality threshold and are then weighted accordingly. The individual price and quality scores are then added together to give a total score.

The bidder with the lowest overall score is the winner.

The model is designed to protect clients against the evaluation being skewed by an unrealistically low price. By setting a minimum price threshold by reference to a detailed market engagement exercise, the client is able to avoid a race to the bottom. The client is also able to preserve the quality of submissions, by setting a minimum quality requirement – this reduces the risk of a lower quality and lower priced bid being identified as the MEAT.

Clients will need to ensure that they clearly set out the relevant scoring rules in the procurement documents so that the consequences of failing to reach the minimum scores (i.e. disqualification) are understood by all bidders, and to ensure a transparent evaluation methodology.

Results

As the example bids used in this White Paper did not set minimum quality thresholds or maximum price ceilings, we have added these elements in order to demonstrate this model.

We have set the minimum acceptable quality score as 65% (where the top mark for quality was 90%), and the minimum acceptable price as £145,000 on a range between £100,000 and £200,000. Setting these minimum requirements will clearly impact on the identity of the successful bidder as they are gateways and anything that fails to reach these requirements will be disqualified.

Any bid with a price lower than £145,000 was disqualified regardless of the quality score, and any bid with a quality score lower than 65% was disqualified regardless of price.

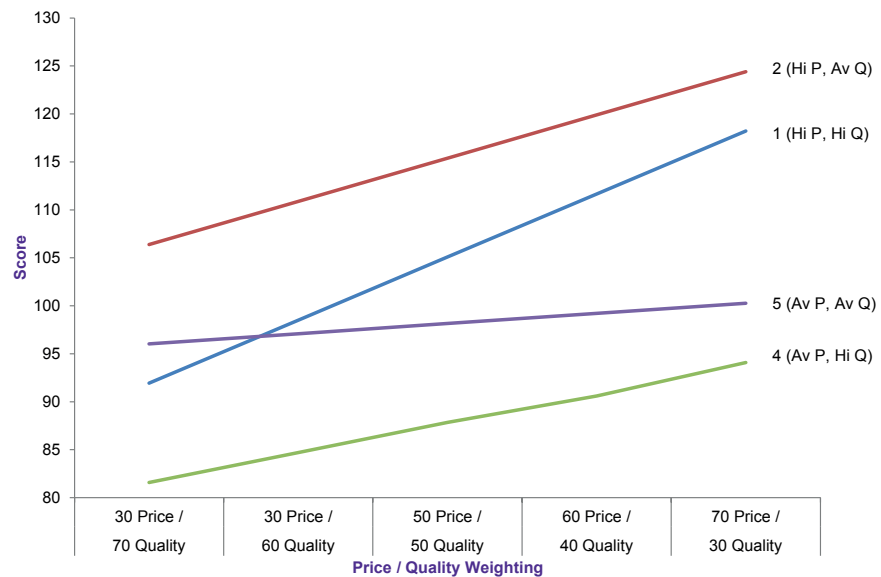
The effect of applying this model on the example bids is set out in the table below.

Example bidder	30 Price / 70 Quality		40 Price / 60 Quality		50 Price / 50 Quality		60 Price / 40 Quality		70 Price / 30 Quality	
	S	R	S	R	S	R	S	R	S	R
1 (Hi P, Hi Q)	91.93	2	98.51	3	105.08	3	111.65	3	118.22	3
2 (Hi P, Av Q)	106.38	4	110.89	4	115.39	4	119.90	4	124.41	4
3 (Hi P, Lo Q)	DISQ	-	DISQ	-	DISQ	-	DISQ	-	DISQ	-
4 (Av P, Hi Q)	81.59	1	84.71	1	87.84	1	90.6	1	94.08	1
5 (Av P, Av Q)	96.03	3	97.09	2	98.15	2	99.21	2	100.27	2
6 (Av P, Lo Q)	DISQ	-	DISQ	-	DISQ	-	DISQ	-	DISQ	-
7 (Lo P, Av Q)	DISQ	-	DISQ	-	DISQ	-	DISQ	-	DISQ	-
8 (Lo P, Lo Q)	DISQ	-	DISQ	-	DISQ	-	DISQ	-	DISQ	-

S = Score **R = Rank**

Bids 2 and 8 were disqualified as they failed to reach the minimum price threshold. Bids 2, 3 and 6 were disqualified as they did not meet the minimum quality threshold. That left four acceptable bids to consider.

The graph below sets out the total scores achieved for each of the example bidders who were not disqualified across the 5 different weightings. The graph demonstrates that, with this model, the quality of the bids is preserved by the use of the minimum quality threshold, and the use of the minimum price threshold means that a lower quality bid will not necessarily be able to succeed in the procurement on the basis of a lower priced submission. That said, the graph demonstrates that where the client gives a higher price weighting, price may become the determinative factor.



Points to note

The results demonstrate that this model continues to reward the lowest priced bid as long as that bid exceeds the minimum price threshold. This is particularly the case where the lowest quality bid falls beneath the minimum quality threshold and is disqualified.

However, given that any bid which falls beneath the minimum quality threshold will be rejected, this model can provide reassurance that the successful bid is a bid of acceptable quality.

The model relies on the client setting an accurate minimum price at the beginning of the procurement. Whilst that may be possible using good cost data and intelligence from within the organisation, and via detailed pre-market engagement, for more complex projects (where little or no supporting data exists) clients may need to bring in professional support (whether internal or external to the organisation) to prepare a reliable pre-bid estimate.

What's it good for?

- Subject to clients setting appropriate minimum price thresholds, this model can be used on any project.
- Where clients want to use the Open Procedure: the application of a minimum price threshold and minimum quality threshold may significantly reduce the number of bids that need to be fully evaluated.

Model 5

Weighted price/quality comparison

The model

$$0.5 \times \left(1 - \frac{\text{Bid received}}{\text{Lowest bid}} \right) \times \text{Price weighting} + \left(\frac{\text{Quality of bid}}{\text{Best quality}} \right) \times \text{Quality weighting} = \text{Total score}$$

Key elements

- This is a relative evaluation model for both the price and quality elements of a bid.
- The total score demonstrates the relationship between price and quality by deducting price from quality based on the applied weighting. This provides a direct “value for money” comparison between price and quality.

How it works

The model calculates a total score by adding the bidder’s weighted price to the weighted quality score.

As this model displays the weighted price as a negative figure, there is a direct comparison between price (as a negative) and quality (as a positive), which results in a combined total score.

It is also possible for a bidder’s total score to be a negative score where the negative value of the weighted price score outweighs the positive value of the weighted quality score. This may occur either on a high price and/or low quality bid.

Price

The weighted price score is represented as a minus figure based on the weighting applied to it. The lowest submitted bid will result in a score of zero, and no marks will be deducted from that bidder’s quality score.

By applying the following formula you create the weighted price score:

$$0.5 \times (1 - (\text{Bid Received} / \text{Lowest Submitted Bid})) \times \text{Price Weighting}$$

For example for the Average Price/ Average Quality example in the example bids:

$$0.5 \times (1 - (£150,000 / £100,000)) \times 40 = -10$$

Quality

The weighted quality score will be represented as a positive figure based on the weighting applied to it.

As the weighted price score is either zero or a negative number, the quality weighting sets the highest score available. For example, if the weighting is 60% Quality/ 40% Price, the highest total score available is 60.

By applying the following formula you create the weighted quality score:

$(\text{Quality Score} / \text{Highest Quality Score}) \times \text{Quality Weighting}$

For example for the Average Price/ Average Quality example in the model bids:

$(45 / 60) \times 60 = 45$

Total score

The total score demonstrates the relationship between price and quality by effectively deducting price from quality based on the applied weighting. In this way, the model protects against overly expensive bids which will generate a negative score to be deducted from that bidder's quality score.

By applying the following formula we create the total score:

$\text{Weighted Price Score} + \text{Weighted Quality Score} = \text{Total Score}$

For example for the Average Price/ Average Quality example in the example bids:

$-10 + 45 = 35$

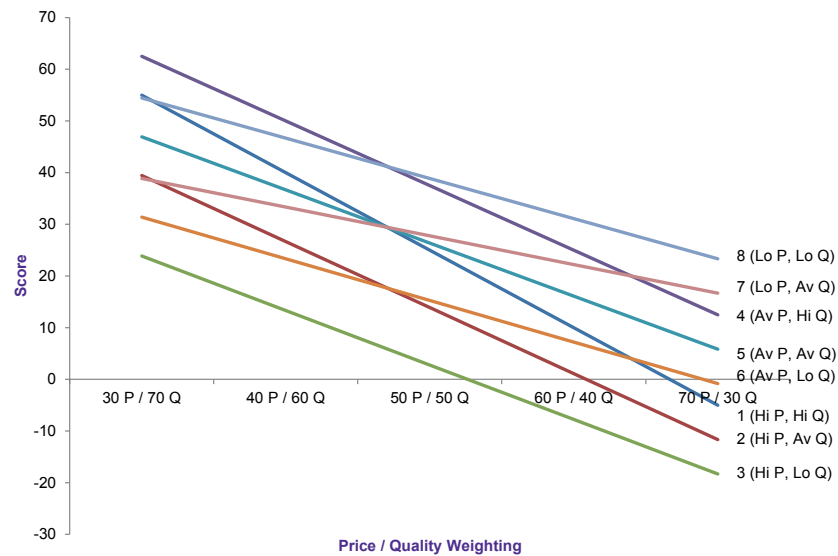
Results

Example bidder	30 Price / 70 Quality		40 Price / 60 Quality		50 Price / 50 Quality		60 Price / 40 Quality		70 Price / 30 Quality	
	S	R	S	R	S	R	S	R	S	R
1 (Hi P, Hi Q)	55	2	40	3	25	5	10	5	-5	6
2 (Hi P, Av Q)	39.44	5	26.66	6	13.88	7	1.11	7	-11.66	7
3 (Hi P, Lo Q)	23.88	8	13.33	8	2.77	8	-7.77	8	-18.33	8
4 (Av P, Hi Q)	62.5	1	50	1	37.5	2	25	2	12.5	3
5 (Av P, Av Q)	46.94	4	36.66	4	26.38	4	16.11	4	5.83	4
6 (Av P, Lo Q)	31.38	7	23.33	7	15.27	6	7.22	6	-0.83	5
7 (Lo P, Av Q)	54.44	3	46.66	2	38.88	1	31.11	1	23.33	1
8 (Lo P, Lo Q)	38.88	6	33.33	5	27.77	3	22.22	3	16.67	2

S = Score

R = Rank

The graph below shows the effect on the scores where different weightings are used.



Points to note

The model applies a direct comparison between price (as a negative) and quality (as a positive). This means clients can view the impact of price on quality. This allows clients to view bids as holistic, “value for money”, solutions, rather than looking at price and quality as separate elements that are brought together at the end of a bid process.

Additionally, regulation 67 refers to a price/quality “ratio”, and as such a “ratio” or comparison based approach better reflects what is set out in the Regulations.

As the model is a relative model, there may be issues with transparency as bidders are ranked against each other and are unable to know how they will perform prior to the bids being evaluated. Additionally, in isolation the price evaluation used does not by itself discourage a “race to the bottom” in price submissions. However, viewed as a whole, this model preserves the importance of quality (by weighting quality submissions up, awarding full quality marks to the highest quality bid, and awarding lower quality bids on a proportionate basis). Used in conjunction with a suitable weighting this could make it less likely for a low priced but lower quality submission to be successful.

The formula is complex and there may be some criticism that it does not therefore comply with the principle of transparency. However, this can be mitigated by the provision of an evaluation model and/or examples being included within the bid documents.

What’s it good for?

- The model is good for all contract types. In particular, this model is useful where a client wants to directly compare price and quality, and view their requirements as a holistic, “value for money”, solution.
- As the model takes into account price/quality weightings, it allows clients to weight the procurement exercise in favour of their preferred element (price or quality) and this will be reflected in the results.

Model 6

Optimum pricing

The model

$$\frac{\left(\text{Max price threshold} - \text{Bid received} \right) \times \text{Price weighting}}{\text{Max price threshold} - \text{Optimum price}} = \text{Price score}$$

Key elements

This is an absolute model. It evaluates price against a pre-defined threshold known as the 'optimum price'.

The client defines the optimum price, along with the maximum price threshold, and discloses each in the procurement documents. The success of this model is reliant on the client's market knowledge and ability to set an informed and deliverable optimum price and a reasonable maximum price threshold, given the stated quality requirements.

This method discourages bidding extremes by removing the uncertainty and placing price-setting firmly within the client's control. The client may use various sources to determine optimum price, such as market research, professional support and existing rates.

Practical application of this model has shown bidders may still bid outside of the client's declared parameters. Therefore, it is essential that the client determines and articulates in the procurement documents how these bids will be treated. Clients may consider:

- Bidder disqualified for reasons of non-compliance.
- Score 'drops off a cliff' meaning they will score 'zero' for exceeding set parameters.
- Awarded the maximum potential score (e.g. as if they had bid the optimum price).

How it works

This model can be applied using two methods:

Method 1: Calculate using the method above.

This model awards the maximum price weighting to the optimum price and '0' to any bid that matches or exceeds the maximum price threshold. Without pricing rules, any bid received that is below the optimum price will also score the maximum price weighting. Clients should therefore consider whether they want to introduce pricing rules which result in bids below the Optimum price receiving a score of 0. It evaluates bids against the client's pre-set parameters using the calculation above.

Method 2: Table format as per the following examples.

A table can be a simple and visual way of presenting bidders with the score attributed to each bid. Note that the score is allocated on a pro-rata basis, rather than in bands. Point allocation and distribution is wholly client-defined, with no calculations.

Example A

Bid	Score awarded
£75,000.00	0
£100,000.00	50
£125,000.00	40
£150,000.00	30
£175,000.00	20
£200,000.00	10
£225,000.00	0

Example B

Bid	Score awarded
£80,000.00	0
£90,000.00	10
£100,000.00	20
£110,000.00	30
£120,000.00	40
£150,000.00	50
£160,000.00	40
£170,000.00	30
£180,000.00	20
£190,000.00	10
£200,000.00	0

Example C

Bid	Score awarded
£80,000.00	0
£90,000.00	10
£100,000.00	50
£110,000.00	49
£120,000.00	48
£150,000.00	47
£160,000.00	36
£170,000.00	14
£180,000.00	8
£190,000.00	5
£200,000.00	0

The ripple effect caused by the placement of an 'optimum' price (highlighted in green) is evident in the table above. The optimum price and outlying thresholds may represent the client's acknowledgement of a potential margin of error or be used as parameters to allow for bidders' innovations or efficiencies.

It's important to note where two different bids score the same points (one above and one below the Optimum Price), as with Example B, there is a decision of the Court of Justice of the European Union concerning a similar pricing model (although one that used a mean average of all the bid prices submitted which is not suggested here) that such an evaluation methodology does not identify MEAT. With that in mind, clients may want to consider whether a linear approach such as that in Example A is more likely to identify MEAT. Example C highlights how clients can further encourage pricing within an acceptable range by allocating the sums awarded via a quickly descending range for prices submitted over (or below) the Optimum Price.

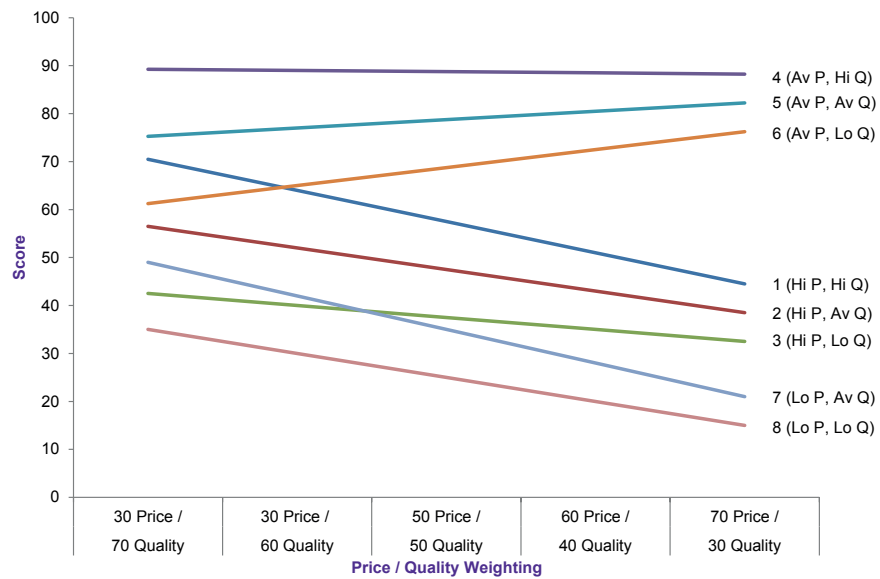
Results

The transparency of the optimum price model drives bidding behaviour. Therefore, the standardised data analysis below may provide only limited insight. For demonstration purposes, it's assumed the optimum price is £140,000 and the maximum price threshold is £220,000. Bidders who submitted prices below the optimum price will receive 0 points for their price submission.

Example bidder	30 Price / 70 Quality		40 Price / 60 Quality		50 Price / 50 Quality		60 Price / 40 Quality		70 Price / 30 Quality	
	S	R	S	R	S	R	S	R	S	R
1 (Hi P, Hi Q)	70.50	3	64	4	57.50	4	51	4	44.50	4
2 (Hi P, Av Q)	56.50	5	52	5	47.50	5	43	5	38.50	5
3 (Hi P, Lo Q)	42.50	7	40	7	37.50	6	35	6	32.50	6
4 (Av P, Hi Q)	89.25	1	89	1	88.75	1	88.50	1	88.25	1
5 (Av P, Av Q)	75.25	2	77	2	78.75	2	80.50	2	82.25	2
6 (Av P, Lo Q)	61.25	4	65	3	68.75	3	72.50	3	76.25	3
7 (Hi P, Av Q)	56.50	5	52	5	47.50	5	43	5	38.50	5
8 (Lo P, Av Q)	49	6	42	6	35	7	28	7	21	7

S = Score R = Rank

The graph below sets out the total scores achieved for each of the example bidders across the 5 different weightings.



Points to note

There is a risk that bidders may rely solely on the client’s determination of optimum price and not undertake their own financial assessments.

The market may fail to respond to the call for competition or produce sub-standard bids if the client has misjudged the parameters and set the price too low. Conversely, where the optimum price is set too high, it may result in the client paying an inflated market rate.

What’s it good for?

- This model would suit all contract and category types where the client has strong market knowledge of the relevant price of goods, works and/or services. This is likely when it is procuring simple services and supplies, or a recurring/cyclical contract.

Model 7

Price/quality ratio

The model

$$\left(\frac{\text{Price}}{\text{Quality}} \right) = \text{PPQS} \text{ (price per quality score)}$$

Key elements

- This is an absolute model which assesses the quantitative relationship between the bidders' quality score and their submitted price.
- The model does not reflect or include any price/ quality weighting. The model directly compares the bidder's quality score and their submitted price.

How it works

The model calculates the "price per quality" offered by an individual bid. To do this you divide the submitted price by the quality score.

The lower the "price per quality" score, the better the bid. A lower score means a client is paying less for each quality point achieved (i.e. paying less for the same).

The "price per quality" calculation provides a price based figure that represents how many pounds sterling each quality point the bidder scored costs in comparison to the other bids. As such a higher quality score and/ or a lower submitted price will result in a lower score (i.e. more quality for less money).

The model does not weight price and quality (i.e. applies 60% price/ 40% quality), as dividing the two elements means that they are being directly compared to each other on an equal basis. As such, whether the weighting for price/ quality is 50/50 or 80/20 has no effect on the ranking of overall results.

A difference will be apparent based on what the quality score is scored out of. For example if scoring a price of out of 50 then dividing that by the price will create a higher "price per quality" than dividing against a score out of 60. For example:

- Price £1,000/ 37.5 (75% of quality score out of 50) = £27 price per quality
- Price £1,000/ 45 (75% of quality score out of 60) = £22 price per quality

Results

As above, this model does not reflect or include any price/ quality weighting.

The following table summarises the result when this model is compared to the example bids:

Example bidder	Price submission	Quality score	PPQS	Ranking
1 (Hi P, Hi Q)	£200,000	90	£2,222.22	5
2 (Hi P, Av Q)	£200,000	70	£2,857.14	6
3 (Hi P, Lo Q)	£200,000	50	£4,000	8
4 (Av P, Hi Q)	£150,000	90	£1,666.66	2
5 (Av P, Av Q)	£150,000	70	£2,142.86	4
6 (Av P, Lo Q)	£150,000	50	£3,000	7
7 (Lo P, Av Q)	£100,000	70	£1,428.57	1
8 (Lo P, Lo Q)	£100,000	50	£2000	3

In the example bids above, the successful bidder has submitted the lowest price, but in order to be successful also needed to submit a sufficiently high quality score.

Points to note

It is worth noting that this model has been identified as an alternative to relative price scoring in the Government's Bid Evaluation Guidance Note (appended to the Outsourcing Playbook).

The "price per quality" output places a price on "a unit of quality" and enables a comparison of what you are paying for each point of quality, establishing a direct price / quality ratio. This has two advantages:

- it is reflective of the evaluators' preferences and budget; and
- it helps to shape the behaviour of all parties (i.e. bidders, stakeholders, evaluators) to see a bid holistically (i.e. quality and price) in its own context, rather than comparatively against other bids.

The same ratio may be achieved by two (or more) very different bids. For example, there is no relative difference between a high quality/ high price bid, and a low quality/ low price bid. For example:

- Price £1,000/ 50 = £20 price per quality
- Price £500/ 25 = £20 price per quality

Clients can mitigate this risk through the use of minimum quality thresholds, minimum price thresholds and/or maximum price ceilings.

What's it good for?

- The model is good for all types of contract, but particularly useful where a client wants to directly compare price and quality, and view its requirements as a holistic, “value for money”, solution.
- The model is useful where the quality score relates to a specific output or quantifiable result. For example, if a client is assessing delivery times, the quality score may be based on delivery days and the output moves from “price per quality” to “price per day”.
- For example, if Supplier A takes 5 days to deliver at £500, the price per day is £100. On the other hand, Supplier B takes 3 days to deliver at £400, so the price per day is £133.

Model 8

Life cycle costing

The model

$$\text{Acquisition costs} + \text{Costs of use} + \text{Maintenance costs} + \text{End of Life costs} = \text{Life cycle costs}$$

Key elements

An alternative method of evaluation is to consider a life cycle costing method.

Life cycle costing enables a client to consider the ongoing costs of a product, not just the initial costs, and this may provide a better indication of “value for money” where there are a range of factors which influence the costs of use.

A life cycle costing method may prevent a “race to the bottom” by influencing bidder behaviours.

Bidders are encouraged to consider whether a higher priced/better quality product is more likely to produce a successful bid because the higher Capital Expenditure cost is mitigated by lower Operational Expenditure costs, rather than automatically include a cheaper product without considering whether the client will have increased in-use costs (such as maintenance, or energy consumption or replacement).

How it works

A life cycle cost (LCC) assessment evaluates the trade-off between options. At its most basic, it considers the overall costs associated with a cheaper, shorter life/lower performing product, compared with a more expensive product with a longer life/higher performance (and lower associated maintenance/replacement costs).

Regulation 68 of the Regulations provides that a life cycle assessment shall, to the extent that they are relevant, cover part or all of the costs borne by the client or others over the life cycle of a product, service or works. This includes, but is not limited to:

1. Acquisition costs;
2. Costs of use, such as consumption of energy and other resources;
3. Maintenance costs; and
4. End of life costs, such as collection and recycling costs.

Additionally, Regulation 68 provides that the assessment shall, to the extent they are relevant, include the costs attributed to environmental externalities linked to the product, service or works during the life cycle (provided that the monetary value of such costs can be determined and verified). These environmental costs could include, for example, pollution or embodied carbon.

A basic example of a LCC calculation is set out at the top of this section.

The lower the LCC of a bid, the better value for money that bid represents (as it demonstrates that the overall/total costs involved with that product are the lowest). This is just an example of a possible LCC calculation, and clients will need to consider which life cycle costs they want to evaluate.

Results

Given the need to include data concerning future costs, we are not able to demonstrate a LCC assessment on the example bids that we have considered elsewhere in this White Paper.

Instead, we have set out below an example LCC assessment in the procurement of a set of corridor lights.

In this example, the client needs to replace a set of corridor lights, and has received four bids. Two of the bids suggest using light emitting diode lamps (LEDs), and the other two suggest using compact fluorescent lamps (CFLs). The contract term will be 10 years.

The client has requested data to cover:

1. the installation costs;
2. the estimated use life;
3. the unit replacement costs; and
4. the annual energy costs.

The information provided in each bid is set out below:

Bidder	Option	Use life (yr)	Installation cost (£)	Annual Energy costs (£)	Unit replacement cost (£)
A	CFL 10k hr	2.3	47.29	131.49	47.29
B	LED 30k hr	6.8	224.10	85.47	224.10

The LCC calculation in this example can be expressed as:

$$LCC = \text{installation costs} + \text{energy costs} + \text{replacement costs}$$

where:

$$\text{energy costs} = \text{annual energy costs} \times \text{contract duration}$$

$$\text{replacement costs} = \text{unit replacement cost} \times (\text{contract duration} \setminus \text{use life})$$

(the calculation for the replacement costs requires an integer division to calculate the number of replacements in the period of analysis)

Given the above calculations, the LCC for each bidder is:

Bidder	Calculation	LCC
A	$47.29 + (131.49 \times 10) + (47.29 \times (10 \setminus 2.3))$	£1,551
B	$224.10 + (85.47 \times 10) + (224.10 \times (10 \setminus 6.8))$	£1,303

In this example, although option B has the highest installation cost, it has the lowest LCC due to its longer life and low power demand. Option D therefore presents the best value for money across the duration of the contract and is the MEAT.

Points to note

With a LCC method, clients will need to make a decision as to how to manage future costs. The options are:

1. Use discounted costs – a net present value (NPV) formula is used to enable a comparison of future costs with current costs; or
2. Use undiscounted costs – the real costs (i.e. costs at today's value).

If a NPV formula is used, a discount rate will need to be selected. The HM Treasury Green Book sets out NPV discounting rules for different periods, and these discount rates are based on the value society places on current consumption compared with future consumption. The current rates are:

Time period	Standard discounting rates
0 – 30 years	3.5%
31 – 75 years	3%
76 – 125 years	2.5%

As an alternative to NPV discounting, the British Standards Institute and RICS guidance currently recommend using undiscounted (real) costs when managing future costs.

Where a client decides to use a LCC assessment, Regulation 68 requires the client to indicate in the procurement documents the data that bidders are required to provide, as well as the method which the client will adopt to determine the LCC on the basis of that data.

Currently, the Regulations also require clients to use any common method of LCC calculation that has been mandated by a legislative act of the EU. At present, there is only one mandated method of LCC for clean vehicles, although the European Commission is currently developing LCC calculation methods for vending machines, imaging equipment, computer and monitors, indoor lighting, and outdoor lighting.

The position regarding mandated common methods is as set out in regulation 68 of the Regulations. However, in accordance with the Public Procurement (Amendments etc.) (EU Exit) Regulations 2019, after 11:00pm on 31 December 2020, that requirement will be removed. This is not a significant issue as the only mandated LCC method is for clean vehicles, but going forward clients using a LCC calculation may still find that any new EU mandated common methods provide useful guidance in the evaluation of LCC.¹²

¹² The Government has now laid a set of draft regulations, the Public Procurement (Amendment Etc.) (EU Exit) Regulations 2020 (the "2020 Regulations"). The 2020 Regulations will repeal the Public Procurement (Amendments etc.) (EU Exit) Regulations 2019, but this does not affect the position set out above regarding mandated methods of calculating LCC as the 2020 Regulations will also remove the requirement to apply EU mandated LCC methods.

Getting the best from a LCC assessment may require considerable preparation, particularly in specifying the format of information required from bidders, so as to allow an efficient assessment process to be run by the client. It's also essential to have sufficient evidence or justification of long term performance and future costs. The client needs to be clear about:

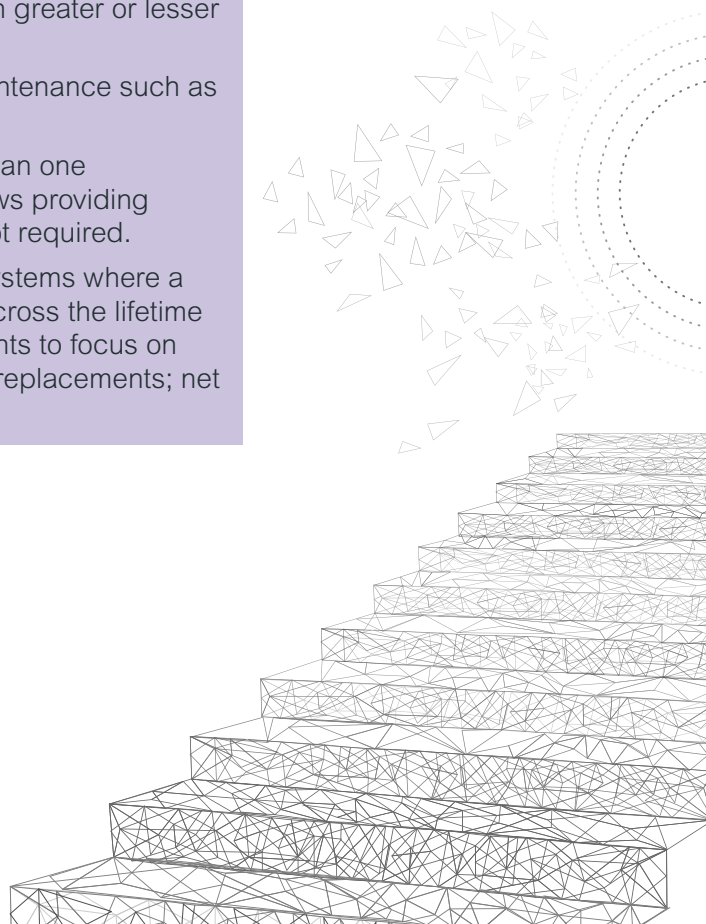
1. the scope of the LCC and information it needs to provide to bidders;
2. the data to be provided by the bidders and the format it is to be provided in; and
3. how the LCC will be evaluated.

It is important to include all relevant costs in the life cycle assessment. The build-up of costs may be complex. In the light example above, replacement costs include the supply and the fitting of the light and the disposal costs associated with hazardous or electrical waste (recycling, certification and transport costs). If the bid includes this service, the client needs to be clear what its requirements are for this service, and the costs for disposal need to be explicitly set out by the bidder.

What's it good for?

The application of life cycle costing is particularly useful in the procurement of items where the market offers a range of options influencing costs in use and different solutions need to be compared on a like-for-like basis, for example:

1. expected service life – longer life versus shorter life products: Welsh natural slate compared with artificial mineral slates.
2. performance characteristics – taps or sanitary systems with reduced water flow performance may use less water resulting in savings to the end user.
3. energy efficiency – printing and copying equipment: with greater or lesser energy requirements.
4. maintenance requirements – products with reduced maintenance such as 'self-cleaning' windows.
5. functional properties – where a product satisfies more than one performance requirement such as photosensitive windows providing shading, so window blinds and their maintenance are not required.
6. It is also useful for the procurement of components or systems where a lower capital price upfront may mean enhanced costs across the lifetime of that component or system and the client therefore wants to focus on quality and (e.g.) durability rather than price (e.g. boiler replacements; net zero solutions in the built environment etc.).



Next steps

As set out at the outset of this White Paper, we are now looking for interested parties to do three things:

1. Trial these suggested price evaluation models in real life procurements
2. Fill in the pro-forma spreadsheet (see below)
3. Suggest any further models that should be explored/included in the next iteration of this paper.

As further detailed below:

1. Trial

Parties are asked to trial these suggested price evaluation models in their real life procurement exercises over the course of the next twelve months, and on anonymised bid data from previous procurements (bearing in mind that some of these models work best by driving bidder behaviours, and so may not accurately demonstrate their benefits when applied to historical data).

2. Provide feedback

To demonstrate the effect of the models, we have prepared a spreadsheet (<https://www.trowers.com/-/media/Files/Legal-updates/evaluation-models-review>) which can be used to see how the different models will provide different results. Please do make use of this spreadsheet when trialling the different models and providing feedback on your experience of the different price evaluation models. Please supplement your spreadsheet with an associated narrative that sets out any comments or observations on your use of the model(s) and the outcomes they produce.

3. Get Involved!

If there are any price evaluation models that you think deserve further exploration and to be included in this guide, please do let us know as part of your feedback (as well as if there are any tweaks that you have applied to the existing models). Finally, please also share your knowledge and experience by sending us feedback on this White Paper.



Further reading

1. Public Contracts Regulations 2015
2. The Public Procurement (Amendments etc.) (EU Exit) Regulations 2019
3. Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement
4. Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the Promotion of Clean and Energy-Efficient Road Transport Vehicles
5. [HMT Managing Public Money](#) (2013, with annexes revised as at September 2019)
6. [The Green Book – HM Treasury, The Green Book; Central Government Guidance on Appraisal and Evaluation](#) (2018)
7. [The Outsourcing Playbook, Version 2.0](#) (June 2020)
8. [Government Commercial Function, Bid Evaluation guidance note](#) (June 2020)
9. [Siac Construction Limited v County Council of the County of Mayo](#) [Case C-19/00]
10. [Kingdom of Spain v European Commission](#) [Case T-402/06]
11. [Procurement Lawyers' Association – Issues in Evaluating Public Sector Tenders](#) [2010]
12. Michael Bowsher QC, [Random Effects of Scoring Price in a Tender Evaluation](#), [2015]
13. Rebecca Rees, "Tendering: the price is right?", *Procurement & Outsourcing Journal* (January 2016)
14. Emily Heard, [Procurement Challenges – Price/Quality Evaluations](#) [2017]
15. RICS professional guidance, UK; Life cycle costing (1st edition, April 2016)
16. PD 156865:2008 Standardized Method of Life Cycle Costing for Construction Procurement: A Supplement to BS ISO 15686-5:2008 Buildings and Constructed Assets – Service Life Planning – Part 5: Life Cycle Costing.
17. BS 8544:2013, Guide for Life Cycle Costing of Maintenance During the in Use Phases of Buildings.
18. CIPFA. 2011. Whole Life Costing. London: Chartered Institute of Public Finance; Accountancy
19. BS ISO 15686-5:2017. Buildings and Constructed Assets. Service Life Planning. Life-Cycle Costing.
20. Przemyslaw Stanislaw Stilger, Formulas for Choosing the Most Economically Advantageous Tender – a Comparative Study (May 26 2011)

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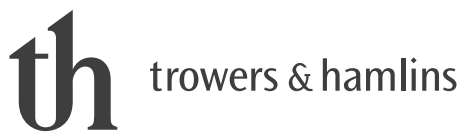
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