GUIDANCE NOTE 1.5.2

Cost Control: Price Variation Clauses

Office of Government Procurement

Cost Control: Price Variation Clauses

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This document is one of a number of guidance notes aimed at facilitating the implementation of the measures in the Capital Works Management Framework (CWMF) introduced to achieve better value for money on publicly funded works projects.

The purpose of this document is restricted to giving practical advice on the use of the Price Variation Clauses PV1 and PV2 in use in the Public Works Contract forms PW-CF1 – PW-CF5.

Foreword

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Part 1   Risk Management: Price Variation

Section 1.1   Introduction

Section 1.2   Adjustment to the Contract Sum for changes in cost in Contracts PW-CF1 to PW-CF4

1.1 Introduction

Up-front risk management is an important part of modern project management.

In a fixed-price lump-sum contract the Contractor accepts the risk of increases in the cost of labour and materials during the construction period (the inflation risk), as well as certain risks of changes in law.

Decisions in relation to price variation options and compensation event options must be taken prior to the publication of the tender invitation. The result of those decisions will dictate what payments can be made outside of the fixed price.

1.2 Adjustment to the Contract Sum for changes in cost in Contracts PW-CF1 to PW-CF4

The Contracts PW-CF1, PW-CF2, PW-CF3 and PW-CF4 must indicate the method to be used to calculate adjustments to the Contract Sum for changes to the cost of labour and materials that may arise and which are allowable under the Contract. The options to choose from are detailed in the Price Variation clauses attached to the contract:

- **PV1**, the **Proven Cost Method** requires the Contractor to provide evidence by the way of invoices to support any claim for increases, including hyperinflation increases, in relation to the cost of materials used in the works and to also produce evidence of the cost of those materials at the Designated Date/Base Date. The Employer checks the validity of such claims independently by obtaining prices from a number of suppliers and other sources for the same materials in the same quantities and timeframes as in the project and compares them against the Contractor's claim. The difference if any in excess of 10% of normal inflation for materials is added to the Contract Sum and paid to the contractor. An increase in the cost of labour involves an increase in the Registered Employment Agreement hourly labour rate after the Base Date which is applied to hours worked after the Base Date to determine the amount to be added to the Contract Sum and paid to the Contractor.

Part 1	**Risk Management: Price Variation**
Section 1.2	Adjustment to the Contract Sum for changes in cost in Contracts PW-CF1 to PW-CF4, *continued*
Section 1.3	Adjustment to the Contract Sum for changes in cost in Contract PW-CF5

1.2 Adjustment to the Contract Sum for changes in cost in Contracts PW-CF1 to PW-CF4, (continued)

- **PV2**, the **Formula Fluctuations Method** uses formulae to calculate the appropriate amount of Contract Sum adjustment for recovery of material cost changes. The formulae are based on price indices for materials, fuel and the Consumer Price Index published by the Central Statistics Office in its monthly *Statistical Release*. A similar formula is used to determine permitted labour increases using the difference between the Registered Employment Agreement (REA) hourly rate at the Base Date and the current REA rate.

For both PV1 and PV2, permitted increases [1] applied to the REA rates at the Base Date (for categories of workers for which recovery is permitted) are used to support Contract Sum adjustments for recovery of labour cost changes.

Employers are required to state in the tender documents which option is to be used. If a choice is not indicated in Part 1M of the Schedule (PW-CF1 to PW-CF4), the default is that PV1 will apply. While the choice of PV1 and PV2 is available with both traditional and design-and-build contracts, PV2 can be difficult to use in design-and-build if the Employer cannot provide the relevant percentages and weightings in Appendices 7 and 8 attached to the Form of Tender and Schedule *(FTS 1 to FTS 4)*.

1.3 Adjustment to the Contract Sum for changes in cost in Contract PW-CF5

In the case of Contract PW-CF5 (Minor Works), there is no choice in relation to the method used to calculate increases in the cost of labour and materials that are allowable under the Contract.

The method that applies is PV1.

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[1] Increases in workers' pay rates to the extent that they apply generally in the construction industry and which are compliant with Government guidelines and Social Partnership Agreements.

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1.4 Post-tender negotiation rules

Post-tender negotiations are contrary to the terms of the EU Public Procurement Directives and the EU courts have specifically stated that negotiation on price under an open or restricted procedure is ruled out. This includes negotiating the buyout of price variation after the Base Date (i.e. to define the cost of the recovery of labour and material increases that occur after the Base Date).

Furthermore, such negotiations would conflict with both the Government's objectives of fixed-price lump-sum contracts tendered for on a competitive basis (i.e. to bring about a situation where the tendered price and the final outturn cost are almost exactly the same), and also with National Guidelines which call for good governance, accountability and transparency in the spending of public money

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1.5 Cost risks borne by the Contractor

In a fixed-price lump-sum contract, the Contractor accepts the risk of:

- Increases in the cost of labour and materials (the inflation risk) other than exceptional material increases (hyperinflation) and those outside the specified time period (fixed-price period);

- Increases in cost due to changes in law other than in certain specified areas; and

- Increases in cost due to exchange rate variations.

The definition of risks accepted by the Contractor and the recovery of increased costs by the Contractor (where risks revert to the Employer) are dealt with in more detail below.

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1.6 Inflation risk borne by the Contractor

For Public Works contracts, the Contractor tenders a price that is fixed for a defined *fixed-price period*, and within this period, the Contractor accepts the risk of normal inflation. The fixed-price period and the commencement date depends on the Price Variation method being used – the following table illustrates the variation in the two approaches:

PV Method	Fixed-price Period	Commencement Date
PV1	30 months	The Contract Date
PV2	36 months (incorporating a 6-month tender assessment period)	The Designated Date or the Recovery Date

Notes

1. The Designated Date is 10 days before the latest date for receipt of tenders.

2. The Recovery Date is the Designated Date corrected to account for any delay to the commencement of the works resulting from actions or omissions of the Contractor.

3. If the Contractor is responsible for delaying commencement of the works after the Contract has been awarded, the commencement of the fixed-price period is deferred.

4. The Contractor is always entitled to compensation for hyperinflation and for inflation caused by changes of law (see below).

1.7 Managing lead-in times for transfer of inflation risk

There is invariably some delay between the close of the tendering process and the award of the Contract, so in the case of PV2, the actual fixed-price period that applies during a project may be shortened if a delay is caused by the Employer in awarding the contract. For example, if the planned project lead-in time is six months, the actual fixed-price period for project execution is 30 months (36–6 = 30). However, if the planned lead-in time is extended by three months (to nine months) due to a delay by the Employer in awarding the Contract, the actual fixed-price period applying during project execution is reduced by three months to 27 months (36–9 = 27).

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1.7 Managing lead-in times for transfer of inflation risk, *(continued)*

In the case of PV1 the 30 months fixed-price period always commences at the Contract Date so that the actual fixed-price period applying during project execution does not change no matter what length of time (within reason) it takes to award the contract.

On shorter contracts, this reduction for PV2, of the fixed-price period applying during the Contract, may not be an issue. If the Contract will definitely be completed within the 30-month period, it is possible in exceptional circumstances to have a planned lead-in time longer than 6 months. However, in no case should the lead-in period exceed 12 months. In general, contractors tendering for short-term contracts will know the duration of such contracts and will price the cost increases they expect to arise during that period. Competition in the market will dictate that this is the case.

On longer contracts it is important to minimise the lead-in time (6 months maximum) for PV2 to ensure that the longest possible fixed-price period can be achieved.

The Employer should consider carefully what is an appropriate lead-in time for the project. This is particularly important if the project is governed by the EU Procurement Directives; all projects, however, irrespective of size, are subject to the EU Treaty principles of transparency, non-discrimination, proportionality, mutual recognition and equal treatment of tenderers. The lead-in time should not be confused with the tender validity period, which should be stated in the tender documents.

1.8 Inflation risk exception: hyperinflation

Hyperinflation is the term used to describe an extremely rapid rise in market prices over a very short period of time. The Contract entitles the Contractor to recover costs at any time after the Designated/Recovery Date, for sudden market increases in the price of materials or fuel, according to the rules in the Contract.

The compensation payable is the amount calculated according to the Contract as appropriate.

Part 1	**Risk Management: Price Variation**
Section 1.9	Exchange rate risk borne by Contractor
Section 1.10	Risk of changes in law borne by Contractor and the Employer

1.9 Exchange rate risk borne by Contractor

The request for tenders should state that all prices are to be given in euro, and that the risk of currency fluctuations must be borne by the Contractor. Tenders submitted in a currency other than euro should not be accepted.

No compensation is payable for changes in the cost of materials, fuel or other prices due to variation in the currency exchange rate..

1.10 Risk of changes in law borne by Contractor and the Employer

In fixed-price lump-sum contracts, the Contractor accepts the risk of any cost increase arising out of changes in legislation during the lifetime of the project.

There are exceptions; the Contract Sum is adjusted (up or down) for changes in:

- Excise duty or similar tariffs;
- Pay-Related Social Insurance; and
- The requirement for a licence to import any commodity.

Compensation for these increases is payable only if the Contractor has not already received compensation for them under the Contract (see above).

If the Employer identifies any such change in the tender documents, for example by referring to impending legislation, then no adjustment is made to the Contract Sum when the change occurs as the Contractor should have included for them in his tender.

> **Note:** If impending legislation is going to increase the cost of the project and legislation is referred to in the tender documents it would be good practice to ensure, prior to award of the contract, that the preferred Contractor is fully aware of the implications and that this is recorded in minutes and included in as part of the contract documents.

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1.11 Data required for PV2 invitation to tender

In a traditional contract, if the Employer chooses to use PV2 to deal with price variation, the Form of Tender and Schedule issued as part of the tender documents should include the two appendices from the Contract, appropriately filled in:

- **Appendix 7,** *Proportions of Labour, Materials, Fuel, and Non-Adjustable Overheads*, allocates a nominal percentage of the Contract Sum to each of five (in the case of building works) or six (in the case of civil engineering) broad categories of work items (labour, materials, fuel, non-reusable temporary works, overheads and plant (only for civil engineering)). In the case of overheads, for example, ten per cent (10%) should be allocated to overhead costs that are not subject to price adjustment. The total of the percentages must equal 100.

- **Appendix 8,** *Indices and Weightings for Materials and Fuel*, allocates a nominal weighting to a range of material and fuel items that may be used on the project. The total of the weightings for Materials must equal 1, as must the total of the weightings for Fuel. The prices of items in this list are tracked by the Central Statistics Office, who publish the relevant price indices monthly.

During the tender period, tenderers may be given an opportunity to comment on the Employer's nominal percentages and weightings in accordance with the Instructions to Tenderers. Any revisions to the percentages and weightings that the Employer wishes to make will be circulated not later than the time stated in the Particulars under section 2.2 of Instructions to Tenderers. The completed appendices 7 and 8 should be attached to the Form of Tender and Schedule *(FTS1 to FTS 4).*

Note 1: T*hese nominal percentages and weightings are not intended to be an exact representation of the actual use of materials etc. on the project; they are used solely for the purpose of calculating the price variation.*

Note 2: *Only those categories of materials listed in the CSO monthly publication Table 3A[2] are permissible. If a project requires only some of these categories, this is acceptable and can be achieved by allocating weightings only to those categories required, and ensuring that all categories add up to one.*

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[2] Detailed Wholesale Price Indices (excluding VAT) for Building and Construction Materials.

Part 1	**Risk Management: Price Variation**
Section 1.12	PV2 use of material and fuel categories
Section 1.13	PV2 tender data in a traditional contract
Section 1.14	PV2 weightings not required

1.12 PV2 use of material and fuel categories

The relevant material and fuel categories for the PV2 clause of the Contract, and the weighting for each, are as indicated by the Employer. It is not envisaged that every category will be used on every contract. Some contracts that do not involve a lot of diverse materials may use only a small number of categories.

The Employer allocates work elements in the Bill of Quantities /Specification or other tender document to categories of material or to non-reusable temporary works, as deemed appropriate.

Note: *The allocation of work elements to categories is for the purposes of allocating an index for price recovery to a part of the Contract Sum, and in no way denotes a preference for the type of material/temporary works to be used.*

1.13 PV2 tender data in a traditional contract

In the case of traditional contracts where Bills of Quantities are used, the work items should be individually coded by the Employer to indicate which material category they fall into for price variation purposes.

The information provided in a traditional contract ensures that all tenderers bid on an equal basis, as both the proportions of the work and the weightings of each material and fuel (for the purposes of the PV2) clause are known.

Tenderers will also know which material index will be used for which work item, as the work items will be linked to categories, which are in turn linked to specific CSO indices. In the case of fuel and labour, which are not linked to work items, the tenderers will know the percentages and indices that apply.

1.14 PV2 weightings not required

Within the PV2 clause, weightings are not required in Appendix 8 for non-reusable temporary works or labour costs. There will be only one rate of increase for non-reusable temporary works – the Consumer Price Index – and only one rate of increase for labour – General Round Increases under the Social Partnership Agreement.

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1.15 PV2 data and the fixed-price period

The Employer must provide the data set out above even where the Contract is due to be completed before the end of the 36th month after the Designated or Recovery Date. This allows for exceptional increases to be calculated (in the case of hyperinflation) and deals with the situation where a delay occurs in awarding the Contract or commencing the works (not on account of the Contractor), which may mean that the contractual date for completion falls after the end of the 36th month, even though that may not have been the Employer's original intention.

1.16 Offer period in Standard Form of Tender

The following text, which is included in the Form of Tender (FTS-1 – FTS-4) is relevant irrespective of which price variation method is used:

'In consideration of your providing us with the contract documents, we agree not to withdraw this offer until the later of:

(a)   180 days after the end of the last day for submissions of this Tender

(b)   expiry of at least 21 days written notice to terminate this tender given by us, which may not issue prior to the expiry of the period at (a).

Your acceptance of this Tender within that time will result in the Contract being formed between us'

The first time limit ((i) above) usually defines an assessment period of up to 6 months. If the Contract is made earlier, neither the Employer nor the tenderer suffers any loss under the price variation – except in respect of the very limited application of the Price Variation clause prior to the Base Date.

The second time limit ((ii) above) is included to protect the Employer from inadvertently losing the right to accept the tender. The tender remains open beyond the limit specified at (i). However, where the tenderer has given written notice to expressly terminate the tender, the tender remains open for 21 days from such notice and the Employer has this period to decide if he wants to accept the tender.

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Part 2	**Calculating Price Variation - PV1: Proven Cost Method**
Section 2.1	Overview
Section 2.2	Basis for calculation

2.1 Overview

In fixed-price lump-sum contracts, the price is fixed for 36 months after the Designated Date/Recovery Date or for 30 months after the Contract Date, depending on which method of calculation has been specified in the Contract: PV1 or PV2.

- Within the fixed-price period, the Contract Sum may be adjusted (up or down) only in very particular circumstances arising from material hyperinflation or certain legislative changes; and

- After the fixed-price period, the Contract Sum may be adjusted to take account of variations in prices.

To avoid unnecessary administrative inconvenience, construction contracts with a duration of 30 months or longer should have a process in place whereby an interim certificate is issued at the end of the 30th month in order to close off the Contractor's risk transfer period (provided there is money due or to become due to the Contractor at that point under a contract).

This is particularly useful where the adjustment to the Contract Sum to take account of price variation is based on a formula (PV2) rather than on proven costs (PV1).

If this is not done, and a certificate is subsequently submitted to cover a period that spans the fixed-price period and the variable price period, the items on the certificate to which variation applies must be identified and treated separately.

This section describes how to implement adjustments to the Contract Sum using PV1.

2.2 Basis for calculation

Under PV1, the Contractor provides evidence by way of invoices to support any claim for increases (including hyperinflation increases) in the cost of materials incorporated in the works and also produces, for comparison purposes, evidence of the cost of those materials at the Designated Date/Base Date.

The Employer checks the validity of such claims independently by obtaining prices from a number of suppliers for the same materials in the same quantities and in the same timeframes, and compares them against the Contractor's claim.

Variations in labour cost recoupable by the Contractor are determined by reference to the Registered Employment Agreement (REA) rate at the Base Date and the general round increases conforming to the guidelines of Social Partnership at the time the work was done.

2.3 Validating claims

The Employer must verify that any claim for an increase in the Contract Sum as a result of increases in the costs of labour and materials is justified, and must also ensure that the Contract Sum is reduced to reflect downward variations in prices.

In support of the claim, the Contractor is required to produce invoices and credit notes for the material increases claimed. The Employer may in addition obtain from his consultants records of prices for those materials or he may use catalogues or price lists from other sources that help to establish market rates. The price variation is measured as follows:

For…	From…
Hyperinflation and eligible changes in legislation	The Designated Date (ten days before the closing date for receipt of tenders)
Other eligible labour and material adjustments.	The Base Date

2.4 Adjustments for hyperinflation

At any time between the Contract Date and the Base Date (that is, within what is otherwise the 'fixed-price period'), the Contract Sum may be adjusted to reflect changes in the price of materials due to hyperinflation.

Hyperinflation of the price of any material is measured by:

1. Checking the price for the same quantity of the same material at the Designated Date and at the first day of the month in which the purchase was made; and selecting the highest of these prices;

2. Calculating the percentage increase in the price at the time of purchase in relation to that selected price; and

3. Checking if this percentage is greater than 50%, and noting the excess.

The amount of the adjustment to the Contract Sum is calculated by taking the amount by which that percentage change exceeds 50% and applying it (by addition) to the price at the Designated Date.

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2.5 Example: Hyperinflation with recovery

Concrete blocks for a contract (clause PV1 selected) are €1000 per 1000 at the Designated Date. At the beginning of month 6 of the Contract, the price of blocks falls to €800 per 1000. During month 6, the price goes up and blocks are purchased at €1600 per 1000.

The Contractor is entitled to claim €100 extra per 1000 blocks purchased in the month according to the calculation for hyperinflation as follows:

Price (A) @ Designated Date	€1000
Price (B) @ 1st Day in Month of Purchase	€800
Price (C) selected highest of A and B	€1000
Price (D) Paid @ Purchase Date	€1600
Is D – C >50% of A?	Yes
Adjustment (increase) in price: D – A – A/2	€100

2.6 Example: Hyperinflation with no recovery

Consider a similar example where concrete blocks are €1000 per 1000 at the Designated Date of the Contract. The price of blocks during month 6 is €1600 per 1000 and they remain at this price at the start of month 7, however during month 7 block prices increases to €1800 per 1000, and it is at this point that the Contractor purchases more blocks.

The Contractor is not entitled to claim according to the measurement for hyperinflation as summarised in the following table:

Price (A) @ Designated Date	€1000
Price (B) @ 1st Day in Month of Purchase	€1600
Price (C) selected highest of A and B	€1600
Price (D) Paid @ Purchase Date	€1800
Is D – C >50% of B?	No

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2.7 Adjustments to take account of legislative changes

At any time during the execution of the Contract, the Contract Sum may be adjusted to reflect the impact on costs of:

- Changes in VAT, customs or excise duties, requirements for a licence to import or export any commodity or

- Changes to PRSI rates.

- Legislative changes not identified in the Works Requirements

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2.8 Adjustments after the 30-month fixed-price period

After the fixed-price period, the Contract Sum may be adjusted to take account of price variations, as follows:

Materials: If the price of the material at the purchase date is more than 10% above or below the price for the same quantity of the same material at the Base Date, the Contract Sum is adjusted. The adjustment amount is calculated by taking the amount by which the percentage increase or decrease exceeds 10% and applying it (by addition or subtraction) to the price at the Base Date.

Labour: The Contract Sum is adjusted to reflect any increase or decrease in labour costs, provided:

- The variation is a General Round variation (increase or decrease) under the current national Social Partnership Agreement; and

- The variation is made to the standard rates paid at the Base Date to workers according to the Labour Court's Registered Employment Agreement; and

- The variation comes into effect after the Base Date; and

- The revised payments have actually been made; and

- The Contractor has complied with the regulatory and legislative requirements set out in Clause 5.3 of the Contract.

2.9 Payment of variation amounts

Payments of the variation amounts are included in interim and final certificates and payments.

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Part 3	**Calculating Price Variation - PV2: Formula Fluctuations Method**
Section 3.1	Overview

3.1 Overview

In fixed-price lump-sum contracts, the price is fixed for 36 months after the Designated Date/Recovery Date or for 30 months after the Contract Date, depending on which method of calculation has been specified in the Contract: PV1 or PV2.

Within the fixed-price period, the Contract Sum may be adjusted (up or down) only in very particular circumstances arising from material hyperinflation or certain legislative changes; and

After the fixed-price period, the Contract Sum may be adjusted to take account of variations in prices.

To avoid unnecessary administrative inconvenience, construction contracts with a duration of 30 months or longer should have a process in place whereby an interim certificate is issued at the end of the 30th month in order to close off the Contractor's risk transfer period (provided there is money due or to become due to the Contractor at that point under a contract).

This is particularly useful where the adjustment to the Contract Sum to take account of price variation is based on a formula (PV2) rather than on proven costs (PV1).

If this is not done, and a certificate is subsequently submitted to cover a period that spans the fixed-price period and the variable price period, the items on the certificate to which variation applies must be identified and treated separately.

This section describes how to implement adjustments to the Contract Sum using PV2.

3.2 Formulae   When the Contract Sum is adjusted to take account of price variations under PV2, the adjustment is calculated using one of a number of formulae that are specified in the Contract.

The formulae for calculating the adjustment to the Contract Sum use the percentages and weightings given to each of the categories of materials, fuel and other components listed in Appendix 2 to Clause PV2 and Appendix 3 to Clause PV2 of the Contract, which should be attached to the Invitation to Tender, and:

- For **materials** and **fuel**: index figures published monthly by the Central Statistics Office (CSO);

- For **non-reusable temporary works**: the Consumer Price Index; and

- For **labour**: Social Partnership Agreements.

These are used to establish base figures for the various cost elements in the project, and to subsequently measure fluctuations in cost of those elements for which recovery is permitted throughout the life of the Contract.

These formulae are not intended to produce exact calculations of the actual costs incurred by the Contractor, but rather to produce a reasonable figure that is easily calculated, objectively verifiable, and based on prior agreement, with a mutually accepted level of risk.

Variations in the price of **overheads** and **plant** do *not* affect the Contract Sum at any time.

3.3 CSO indices   The Central Statistics Office (CSO) publishes monthly construction material and fuel indices in its *Statistical Release* – tables 3A and 5 of the CSO's Wholesale Price Index correlate to the categories of materials and fuels used in the PV2 clause

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Part 3	**Calculating Price Variation - PV2: Formula Fluctuations Method**
Section 3.4	Absence of a relevant index
Section 3.5	Changes to a relevant index
Section 3.6	Failure to complete on time
Section 3.7	Excluded amounts

3.4 Absence of a relevant index

In the absence of any relevant index or agreement, the Consumer Price Index is used in its place.

3.5 Changes to a relevant index

If any index figure used to calculate an adjustment is subsequently revised by the CSO prior to the issue of the Final Certificate, then any such adjustment is recalculated using the revised index figure and the appropriate adjustment is made on the next certificate.

3.6 Failure to complete on time

The Contractor is not entitled to an adjustment for increases in labour and materials under price variations that occur after the Date for Substantial Completion or approved extension to that date. Costs incurred after that date (or approved extended date) are valued at the rate pertaining at the Date for Substantial Completion or at the approved extension to that date.

This means that, under the price variation clause, the Contractor cannot claim for price increases that occur after the Date for Substantial Completion, and so may not benefit from not completing on time.

3.7 Excluded amounts

The formulae for calculating price adjustments refer to Excluded Amounts. The full list of such amounts is in the Contract (Clause PV2.6). They include items such as amounts for unfixed materials, delay costs and items priced on actual cost that are excluded by virtue of their being based on current prices or subject to specific price arrangements, or are due to the default or negligence of the Contractor.

These Excluded Amounts are deducted from the amount payable in any Interim or Final Certificate prior to calculating price adjustments.

Calculating Price Variation - PV2: Formula Fluctuations Method

Adjustments allowed within the fixed price period

3.8 Adjustments allowed within the fixed price period

Adjustments for hyperinflation and legislative change may be made as follows:

At any time between the Designated Date and the Base Date, the Contract Sum may be adjusted to take account of changes in the price of materials arising from…	…hyperinflation
At any time between the Designated Date and the Date for Substantial Completion, the Contract Sum may be adjusted to take account of changes arising from …	…specific types of legislative changes

Note 1: *The Contract Sum may be adjusted to take account of legislative change both within and outside the fixed-price period according to the rule above, provided that any such adjustment is not made elsewhere under another part of the Contract.*
Note 2: *The Contract Sum may not be adjusted to take account of increases in the cost of labour within the fixed-price period (except where such increases are the result of legislative change).*

Legislative changes

Changes in VAT, custom and excise duty, or import/export licensing requirements that impact on the cost of materials or fuel, and changes to PRSI rates that affect the cost of labour may result in adjustments to the Contract Sum (provided impending changes of this nature were not flagged in the Invitation to Tender).

Hyperinflation

Compensation is payable if the CSO monthly index applicable to the certificate for any material or fuel is:

1. More than 50% above the index for that material or fuel at the Designated or Recovery Date; and

2. More than 50% above the CSO monthly index for the same material or fuel in the month preceding the certificate.

If **both** these conditions hold, compensation is payable based on the excess over 50% of the CSO monthly index for the same material or fuel at the Designated Date. This is further explained below.

Calculating Price Variation - PV2: Formula Fluctuations Method

Compensation for hyperinflation in the cost of materials

**3.9
Compensation for hyperinflation in the cost of materials**

The Contractor is entitled to partial recovery of increases in the cost of materials within the fixed-price period, if such cost increases are due to hyperinflation, as defined by the two conditions set out on page 18.
The formula for calculating the recovery in this circumstance is set out in the Contract as follows:

$$\frac{\{W \times Y \times Z \times P \times (F2 - F1)\}}{F1} - (50\% \times W \times Y \times Z \times P) = M$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix A.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of each material category affected by hyperinflation and used on the project in the period relating to the certificate, based on prices pertaining at the Designated Date.	
2	*Divide by* The total value, in terms of the Contract Sum, of the proportion assigned to that material in Appendix 8 to Clause PV2 of the Contract (attached to the Invitation to Tender), to obtain the value **P** in the formula.	= **P**
3	*Multiply by* The percentage value assigned to Materials in Appendix 7 to Clause PV2 of the Contract (attached to the Invitation to Tender).	P x **Y**
4	*Multiply by* The weighting assigned to the relevant Material Category in Appendix 3 to Clause PV2 to the Contract.	P x Y x **W**
5	*Multiply by* The Contract Sum (excluding VAT) *less* any Excluded Amounts and price adjustments *Note this result; you will need it again.*	P x Y x W x **Z**

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3.9 Compensation for hyperinflation in the cost of materials *(continued)*

Step	Action	Element in formula
6	*Multiply by* The increase in the CSO Index for the relevant Material Category from the month prior to the date on which the materials were purchased.	$P \times Y \times W \times Z \mathbf{x(F2-F1)}$
7	*Divide by* The CSO Index for the relevant Material Category at the month prior to the date on which the materials were purchased.	$\dfrac{P \times Y \times W \times Z \times (F2-F1)}{\mathbf{F1}}$
8	*Subtract* 50% of the result obtained in step 5 above.	$\mathbf{-50\%} \times W \times Y \times Z \times P$
	Result	**M**

Part 3 Calculating Price Variation - PV2: Formula Fluctuations Method

Section 3.10 Compensation for hyperinflation in the cost of fuels

3.10 Compensation for hyperinflation in the cost of fuels

The Contractor is entitled to partial recovery of increases in the cost of fuels within the fixed-price period if such cost increases are due to hyperinflation, as defined by the two conditions set out on page 18.

The formula for calculating the recovery in this circumstance is set out in the Contract as follows:

$$\frac{\{W \times Y \times EV \times (F2 - F1)\}}{F1} - (50\% \times W \times Y \times EV) = N$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix A.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of work on the project in the period relating to the certificate, based on prices pertaining at the Designated Date.	$= EV$
2	*Multiply by* The percentage value assigned to Fuel in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	$EV \times Y$
3	*Multiply by* The weighting assigned to the relevant Fuel Category in Appendix 8 to Clause PV2 of the Contract attached to the Invitation to Tender. *Note this result, you will need it again.*	$EV \times Y \times W$
4	*Multiply by* The increase in the CSO Index for the relevant Fuel Category from *the* month prior to the date on which the fuel was purchased.	$EV \times Y \times W \times (F2-F1)$
5	*Divide by* The CSO Index for the relevant Fuel Category at the month prior to the date on which the fuel was purchased.	$\frac{EV \times Y \times W \times (F2-F1)}{F1}$
6	*Subtract* 50% of the result obtained in step 3 above.	$- 50\% \times W \times Y \times EV$
	Result	N

Part 3   **Calculating Price Variation - PV2: Formula Fluctuations Method**

Section 3.11   Adjustments after the 36-month fixed-price period
Section 3.12   Adjustments after Date for Substantial Completion

3.11 Adjustments after the 36-month fixed-price period

From the Base Date (the first day of the 37th month after the Designated Date) up to the latest Date for Substantial Completion, the Contract Sum may be adjusted (up or down) to reflect variations in costs due to:

- General Round increases paid under the current national Social Partnership Agreement (for **labour**);

- Changes in the Consumer Price Index (for **non-reusable temporary works**); and

- Changes in the relevant CSO monthly indices (for **materials** and **fuel**).

For non-reusable temporary works, materials and fuel, the index figure for purchases after the Base Date must be more than 10% in excess of the index figure at the Base Date for the formula to yield a recoverable increase.

Overheads and plant are not subject to price variation at any time.

No compensation is payable for increases that arise after the latest Date for Substantial Completion, irrespective of the reason for the increase.

The calculation of adjustments to the Contract Sum for each of the four eligible categories is detailed in the following pages.

3.12 Adjustments after Date for Substantial Completion

After the Date for Substantial Completion, any adjustments to the Contract Sum are based on the relevant CSO figures and social partnership figures that are current or published at the Date for Substantial Completion.

Calculating Price Variation - PV2: Formula Fluctuations Method

Variations in the cost of materials after the Base Date

3.13 Variations in the cost of materials after the Base Date

The formulae for calculating adjustments to the Contract Sum arising from variation in the cost of materials after the Base Date are as follows:

A. Formula to be used where A1 – B1 is less than or equal to zero (i.e. where prices are lower than at the Base Date):

$$\frac{W \times Y \times Z \times P \times (A1 - B1)}{B1} = K$$

B. Formula to be used where A1 – B1 is greater than zero (i.e. where prices are higher than at the Base Date) – see step 6 below:

$$\frac{\{ W \times Y \times Z \times P \times (A1 - B1) \}}{B1} - (10\% \times W \times Y \times Z \times P) = K$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix A.

Note: *No compensation is payable for increases in price of materials that are not one of the weighted categories in Appendix 8 to Clause PV2 of the Contract.*

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of the material category affected by the price increase and used on the project in the period covered by the certificate, based on the prices pertaining at the Designated Date	
2	*Divide by* The total value, in terms of the Contract Sum, of the proportion assigned to that material in Appendix 8 to Clause PV2 of the Contract attached to the Invitation to Tender (to obtain the value **P** in the formula).	= P
3	*Multiply by* The percentage value assigned to Materials in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	P x Y

Continued on the next page

3.13 Variations in the cost of materials after the Base Date, (continued)

Step	Action	Element in formula
4	*Multiply by* The weighting assigned to the relevant Material Category in Appendix 8 to Clause PV2 of the Contract attached to the Invitation to Tender.	P x Y **x W**
5	*Multiply by* The Contract Sum (excluding VAT) *less* any Excluded Amounts and price adjustments. *Note the result, you will need it again.*	P x Y x W **x Z**
6	*Multiply by* The change in the CSO Index for the relevant Material Category from the Base Date to the month in which the mid-date of the period covered by the certificate falls. (If the Index is lower on the later date, this figure is negative.)	P x Y x W x Z **x (A1−B1)**
7	*Divide by* The CSO Index for the relevant Material Category at the Base Date.	$\dfrac{P \times Y \times W \times Z \times (A1-B1)}{\mathbf{B1}}$
8	If the result is:	**= K**
	Negative (i.e. if **K** is less than zero), reduce the Contract Sum by that amount;	
	Positive (i.e. if **K** is greater than zero), the calculation of K continues with Formula B, as follows: *Subtract 10% of the result obtained in step 5 above* If *that* result is positive, increase the Contract Sum by that amount; otherwise the Contract Sum is unaffected.	**− 10% x** W x Y x Z x P

3.14 Variations in the cost of fuel after the Base Date

The formulae for calculating adjustments to the Contract Sum arising from variation in the cost of fuel after the Base Date is as follows:

A. Formula to be used where A1 – B1 is less than or equal to zero (i.e. where prices are lower than at the Base Date):

$$\frac{W \times Y \times EV \times (A1 - B1)}{B1} = L$$

B. Formula to be used where A1 – B1 is greater than zero (i.e. where prices are higher than at the Base Date) – see step 6 below:

$$\frac{\{W \times Y \times EV \times (A1 - B1)\}}{B1} - (10\% \times W \times Y \times EV) = L$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix A.

Note: No compensation is payable for increases in the price of fuel that are one of the weighted categories in Appendix 8 to Clause PV2 of the Contract.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of the work on the project in the period covered by the certificate, based on prices pertaining at the Designated Date.	= **EV**
2	*Multiply by* The percentage value assigned to Fuel in Appendix 7 of Clause PV2 of the Contract attached to the Invitation to Tender.	EV **x Y**
3	*Multiply by* The weighting assigned to the relevant Fuel Category in Appendix 8 of Clause PV2 of the Contract attached to the Invitation to Tender. *Note this result, as you will need it again.*	EV x Y **x W**
4	*Multiply by* The change in the CSO Index for the relevant Fuel Category from the Base Date to the month in which the mid-date of the period covered by the certificate falls. If the Index is lower on the later date, this figure is negative.	EV x Y x W **x (A1 – B1)**

Continued on the next page

3.14 Variations in the cost of fuel after the Base Date, (continued)

Step	Action	Element in formula
5	*Divide by* The CSO Index for the relevant Fuel Category at the Base Date.	$$\frac{EV \times Y \times W \times (A1 - B1)}{B1}$$
6	If the result is:	= **L**
	Negative (i.e. if **L** is less than zero), reduce the Contract Sum by that amount;	
	Positive (i.e. if **L** is greater than zero), the calculation of K continues with Formula B, as follows: *Subtract 10% of the result obtained in step 3 above* If *that* result is positive, increase the Contract Sum by that amount; otherwise the Contract Sum is unaffected.	**– 10% x** EV x Y x W

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3.15 Variations in the cost of non-reusable temporary works after the Base Date

The formulae for calculating adjustments to the Contract Sum arising from variation in the cost of non-reusable temporary works after the Base Date is as follows:

A. Formula to be used where $CPI^A - CPI^B$ is less than or equal to zero (i.e. where prices have fallen since the Base Date):

$$\frac{Y \times Z \times P\,(CPI^A - CPI^B)}{CPI^B} = K$$

B. Formula to be used where $CPI^A - CPI^B$ is greater than zero (i.e. where prices have risen since the Base Date) – see step 7 below:

$$\frac{Y \times Z \times P\,(CPI^A - CPI^B)}{CPI^B} - (10\% \times Y \times Z \times P) = K$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix A.

Note: No compensation is payable for increases in the price of non-reusable temporary works that are used in excess of the percentage specified in Appendix 7 to Clause PV2 of the Contract.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of the non-reusable temporary works affected by the price change and used on the project in the period covered by the certificate, based on the prices pertaining at the Designated Date.	
2	*Divide by* The total value of the non-reusable temporary works specified in the Contract Sum.	= P
3	*Multiply by* The percentage value assigned to non-reusable temporary works in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	P x Y

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3.15 Variations in the cost of non-reusable temporary works after the Base Date, (continued)

Step	Action	Element in formula
4	*Multiply by* The Contract Sum (excluding VAT) *less* any Excluded Amounts and price adjustments. *Note the result, you will need it again.*	$P \times Y \times Z$
5	*Multiply by* The change in the Consumer Price Index from the month containing the Base Date to the month in which the mid-date of the period covered by the certificate falls. If the Index is lower on the later date, this figure is negative.	$P \times Y \times Z \times (CPI^A - CPI^B)$
6	*Divide by* The Consumer Price Index for the month containing the Base Date.	$\dfrac{P \times Y \times Z \times (CPI^A - CPI^B)}{CPI^B}$
7	If the result is:	$= K$
	Negative (i.e. if **K** is less than zero), reduce the Contract Sum by that amount;	
	Positive (i.e. if **K** is greater than zero), the calculation of **K** continues using Formula B, as follows: *Subtract 10% of the result obtained in step 4 above* If *that* result is positive, increase the Contract Sum by that amount; otherwise the Contract Sum is unaffected.	$- 10\% \times Y \times Z \times P$

3.16 Increases in the cost of labour after the Base Date

The formula for calculating adjustments to the Contract Sum arising from variation in the cost of labour after the Base Date is as follows:

$$Y \times GRI \times EV = LV$$

Follow the steps set out below to apply this formula. A worked example of the calculation is in Appendix A.

Note: No compensation is payable for increases in cost of labour in excess of the percentage specified in Appendix 7 of the Contract.

Step	Action	Element in formula
1	Ascertain the net value (excluding VAT) of labour used on the project in the period covered by the certificate, based on the prices pertaining at the Designated Date.	**EV**
2	*Multiply by* The percentage value assigned to labour in Appendix 7 to Clause PV2 of the Contract attached to the Invitation to Tender.	EV **x Y**
3	*Multiply by* The percentage change (positive or negative) in the General Round of the current Social Partnership Agreement that came into effect after the Base Date and prior to the Date for Substantial Completion.	EV x Y **x GRI**
Result		**= LV**

General Round Increases exclude any increase in workers' wages that exceeds the percentage increases in basic pay in the private sector as agreed in the Social Partnership Agreement current at the time of the relevant certificate. All other increases are excluded, even where calculated as a percentage of a standard rate or resulting from any legislative enactment. For example, the Contractor is not entitled to any payment for:

▪ Local or site bargaining provisions;

▪ Any parity or restructuring increases;

▪ Any bonus under a site agreement, productivity, incentive, or other bonus; or

▪ Insurance premiums or other on-costs or consequential costs.

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Part 3   Calculating Price Variation - PV2: Formula Fluctuations Method

Section 3.17 Non-adjustable overheads and plant
Section 3.18 Total increase on each certificate

3.17 Non-adjustable overheads and plant

No compensation is payable in respect of variations in the price of:

Non-adjustable overheads; or

Plant.

3.18 Total increase on each certificate

The relevant formula is applied in respect of each material and/or fuel category, non-reusable temporary works and labour that has been subject to an increase in price, and the total increase for the relevant Adjustment Period is included in the Interim or Final Certificate as an adjustment.

Part 4 Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)

Section 4.1 A1: Worked Examples – Overview

4.1.1 Introduction This appendix contains a number of worked examples to illustrate the application of the various price fluctuation formulae.

All the examples are based on a hypothetical contract with the following characteristics:

A four-year works contract

Designated Date: 15th January 2005

Base Date: 1st February 2008

Contract Sum (excluding VAT and any price adjustments):
€6,285,000

Less: **Excluded Amount for Specialists:** **€285,000**

€6,000,000

Interim Certificates are submitted monthly

Each example starts by outlining the events that give rise to the claim for price variation, and then goes step by step through the calculation.

The examples cover the following situations:

Example	Reason for price variation
A2	**Hyperinflation** in the price of **materials** within the fixed-price period
A3	**Hyperinflation** in the price of **fuel** within the fixed-price period
A4	Increase in the price of **materials** after the fixed-price period
A5	Increase in the price of **fuel** after the fixed price period
A6	Increase in the cost of **non-reusable temporary works** after the fixed-price period
A7	Increase in **labour** costs after the fixed-price period

Note: All figures for indices and wage agreements used in this appendix are fictitious and are used merely to illustrate the working of the formulae. They are not to be used for actual calculations.

Part 4   **Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)**

Section 4.1   A1: Worked Examples – Overview

4.1.2 Proportions and weightings used

The proportions and weightings for the different works elements used throughout the examples are shown in the tables below. Such proportions and weightings would be specified in Appendix 7 and 8 of the Contract.

(From Appendix 2) **Work element**	**Percentage of Contract Sum**
Labour	30%
Materials	30%
Fuel	10%
Non-reusable temporary works	5%
Plant	15%
Non-adjustable overheads	10%
Total	**100%**

(From Appendix 3) **Material**	**Weighting**
Stone, sand and gravel	0.08
Cement	0.00
Ready mixed mortar and concrete	0.20
Concrete blocks and bricks	0.00
Other concrete products	0.14
Structural steel and reinforcing metal	0.04
Structural steel	0.28
Reinforcing metal	0.00
Rough timber	0.00
Other timber	0.06
Bituminous macadam and asphalt	0.00
Bituminous emulsions	0.00
Electrical fittings	0.10
All other materials	0.10
Total	**1.00**

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Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)

A1: Worked Examples – Overview

4.1.2 Proportions and weightings used, (continued)

(From Appendix 3) **Fuel**	**Weighting**
Electricity	0.50
Fuel Oil	0.50
Total	**1.00**

Part 4   **Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)**

Section 4.2   A2: Example – Hyperinflation in the price of materials within the fixed-price period

4.2.1 Variation details

In **August 2006**, the 18th Interim Valuation (relating to July 2006 – that is, within the fixed-price period) includes a claim for exceptional increases in the price of structural steel, as shown in the table below. Of the total amount of structural steel specified in the Contract Sum, 25% is affected by this price increase.

CSO Indices for structural steel	
January 2005 (the month of the Designated Date)	90
June 2006 (the month prior to the month in which falls the middle day of the period referred to in the Interim Certificate)	102
July 2006 (the month in which falls the middle day of the period referred to in the Interim Certificate)	190

Note: 190 is more than 50% of index figure at Designated Date (i.e. 90) and also more than 50% of index figure of the preceding month (i.e. 102).

4.2.2 Calculation

As the threshold for compensation has been reached, the compensation payable may be calculated as follows:

1. *Given P* The proportion of the total value of structural steel specified in the Contract Sum affected by this price increase (i.e. 25% of the 28% listed Appendix 7 to the Invitation to Tender).	25%
2. *Multiply by Y* The percentage value assigned to Materials in Appendix 7 to the Invitation to Tender.	25% * 30% = 7.5%
3. *Multiply by W;* The weighting assigned to structural steel in Appendix 8 to the Invitation to Tender.	7.5% * 0.28 = 2.1%
4. *Multiply by Z;* The Contract Sum (excluding VAT) *less* any Excluded Amounts and price adjustments.	2.1% * 6,000,000 = 126,000
5. *Multiply by (F2-F1);* The increase in the CSO Index for structural steel from June 2006 to July 2006.	126,000 * (190-102) = 11,088,000
6. *Divide by F1;* The CSO Index for structural steel in June 2006.	11,088,000 / 102 = 108,706
7. *Subtract (50% x W x Y x Z x P)* 50% of the result obtained in step 4 above.	108,706 – (126,000/2) = 108,706 – 63,000
Amount of increase in Contract Sum	**= €45,706**

Part 4	**Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)**
Section 4.3	**A3: Example – Hyperinflation in the price of fuel within the fixed-price period**

4.3.1 Variation details

In **August 2006**, the 18th Interim Valuation (relating to July 2006 – that is, within the fixed-price period) includes a claim for exceptional increase in the price of fuel oil, as shown in the table below.

The Effective Value for the Interim Valuation for the period up to 31st July 2006 is €1,000,000. (That is the value of work on the project in the period covered by the Interim Certificate.)

CSO Indices for fuel oil
January 2005 (the month of the Designated Date)
June 2006 (the month prior to the month in which falls the middle day of the period referred to in the Interim Certificate)
July 2006 (the month in which falls the middle day of the period referred to in the Interim Certificate)

Note: 205 is more than 50% of index figure at Designated Date (i.e. 90) and also more than 50% of index figure of the preceding month (i.e. 113.2).

4.3.2 Calculation

As the threshold for compensation has been reached, the compensation payable may be calculated as follows:

1. *Given EV* The value (excluding VAT) of the work on the project in the period relating to the certificate, based on prices pertaining at the Designated Date.

   €1,000,000

2. *Multiply by Y*
   The percentage value assigned to Fuel in Appendix 7 to the Invitation to Tender.

   1,000,000 * 10% = 100,000

3. *Multiply by W*
   The weighting assigned to fuel oil in Appendix 8 ~~to~~ the Invitation to Tender.

   100,000 * 50% = 50,000

4. *Multiply by (F2-F1)*
   The increase in the CSO Index for fuel oil from June 2006 to July 2006.

   50,000 * (205-113.2) = 50,000 * 91.8 = 4,590,000

5. *Divide by F1*
   The CSO Index for fuel oil for June 2006.

   4,590,000 / 113.2 = 40,548

6. *Subtract (50% x Y x W x EV)*
   50% of the result obtained in step 3 above.

   40,548 – (50,000/2) = 40,548 – 25,000

Amount of increase in Contract Sum = **€15,548**

Part 4

Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)

Section 4.4

A4: Example – Increase in the price of materials after the fixed-price period

4.4.1 Variation details

In April 2008, the 38th Interim Valuation includes a claim for increases in the price of ready-mixed mortar and concrete and the price of structural steel which occurred on or after the Base Date (1st February 2008) – that is, after the end of the fixed-price period.

25% of the total amount of ready-mixed mortar and concrete specified in the Contract Sum is affected by this price increase.

10% of the total amount of structural steel specified in the Contract Sum is affected by this price increase.

The relevant CSO Indices for these materials are shown below:

CSO Indices for ready-mixed mortar and concrete	
February 2008 (the month in which falls the Base Date)	105.30
March 2008 (the month in which falls the middle day of the period referred to in the Interim Certificate)	126.36

CSO Indices for structural steel	
February 2008	109
March 2008	124

Note: The index figures for ready-mix mortar and concrete, and for structural steel when purchased (i.e. 126.36 and 124 respectively) are more than 10% in excess of the index figures at the Base Date (i.e. 105.3 and 109 respectively).

Continued on next page

Part 4 **Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)**

Section 4.4 **A4: Example – Increase in the price of materials after the fixed-price period**

4.4.2 Calculation As the threshold for compensation has been reached, the compensation payable or recoverable may be calculated as follows:

	Ready-mixed mortar and concrete	Structural steel
1. *Given P* The proportion of the total value of same material category specified in the Contract Sum that is affected by the price increase (i.e. 25% for ready-mixed mortar and concrete, and 10% for structural steel listed in Appendix 8 to the Invitation to Tender).	25%	10%
2. *Multiply by Y* The percentage value assigned to Materials in Appendix 7 to the Invitation to Tender.	25% * 30% = 7.5%	10% * 30% = 3%
3. *Multiply by W* The weighting assigned to the relevant Material Category in Appendix 8 to the Invitation to Tender.	7.5% * 0.2 = 1.5%	3% * 0.28 = 0.84%
4. *Multiply by Z* The Contract Sum (excluding VAT) *less* any Excluded Amounts and price adjustments.	1.5% * 6m = 90,000	0.84% * 6m = 50,400
5. *Multiply by (A1-B1)* The change in the CSO Index for the relevant Material Category from the Base Date to the month in which the mid-date of the period covered by the certificate falls. (If the Index is lower on the later date, this figure is negative.).	90,000 * (126.36-105.3) = 90,000 * 21.06 = 1,895,400	50,400 * (124-109) = 50,400 * 15 = 756,000
6. *Divide by B1* The CSO Index for the relevant Material Category at the Base Date.	1,895,400 / 105.3 = 18,000	756,000 / 109 = 6,936
7. The results are **positive**, so subtract 10% of the results obtained in step 4 above	18,000 – 9,000 = 9,000	6,936 – 5,040 = 1,896
Total amount of increase in Contract Sum		**= €10,896**

Part 4	**Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)**
Section 4.5	**A5: Example – Increase in the price of fuel after the fixed-price period**

4.5.1 Variation details

In April 2008, the 38th Interim Valuation **(for the period to 31st March 2008)** includes a claim for increases in the price of fuel oil which occurred on or after 1st February 2008 (the Base Date) – that is, after the end of the fixed-price period.

Amount (ex VAT) for work in the Interim Valuation, before retention:

	€1,575,000
Less: **amount for unfixed materials (Excluded Amounts):**	**€75,000**
	€1,500,000

The relevant CSO Indices for fuel oil are shown below:

CSO Indices for fuel oil
January 2008 (the month in which falls the Base Date)
March 2008 (the month in which falls the middle day of the period referred to in the Interim Certificate)

Note: The index figure for fuel oil when purchased (i.e. 212) is more than 10% in excess of the index figures at the Base Date (i.e. 184.5).

4.5.2 Calculation

As the threshold for compensation has been reached, the compensation payable may be calculated as follows:

1.	*Given EV* The value (excluding VAT) of work on the project in March 2008, based on the prices pertaining at the Designated Date.	€1,500,000
2.	*Multiply by Y* The percentage value assigned to Fuel in Appendix 7 to the Invitation to Tender.	1,500,000 * 10% = 150,000
3.	*Multiply by W* The weighting assigned to fuel oil in Appendix 8 to the Invitation to Tender.	150,000 * 0.50 = 75,000
4.	*Multiply by (A1-B1)* The change in the CSO Index for fuel oil from January 2008 to March 2008.	75,000 * (212-184.5) = 75,000 * 27.5 = 2,062,500
5.	*Divide by B1* The CSO Index for fuel oil in January 2008.	2,062,500 / 184.5 = 11,179
6.	The result is **positive**, so subtract 10% of the result obtained in step 3 above.	11,179 – 7,500
	Amount of increase in Contract Sum	**= €3,679**

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Part 4

Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)

Section 4.6

A6: Example – Increase in the cost of non-reusable temporary works after the fixed-price period

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4.6.1 Variation details

In April 2008, the 38th Interim Valuation **(for the period to 31st March 2008)** includes a claim for increases in the price of non-reusable temporary works which occurred on or after 1st February 2008 (the Base Date) – that is, after the end of the fixed-price period. 25% of the total amount of non-reusable temporary works specified in the Contract Sum is affected by this price increase.

The relevant Consumer Price Indices are shown below:

Consumer Price Indices
February 2008 (the month in which falls the Base Date)
March 2008 (the month in which falls the middle day of the period referred to in the Interim Certificate)

Note: The index figure for the non-reusable temporary works when purchased (i.e. 133.6) is more than 10% in excess of the index figure at the Base Date (i.e. 119.3).

4.6.2 Calculation

As the threshold for compensation has been reached, the compensation payable **for the period up to 31st March 2008** is calculated as follows:

1.	*Given P* The proportion of the total value of non-reusable temporary works specified in the Contract Sum affected by this price increase (i.e. 25% of the 5% listed in Appendix 7 of the Contract).	25%
2.	*Multiply by Y* The percentage value assigned to non-reusable temporary works in Appendix 7 of the Contract).	25% * 5% = 1.25%
3.	*Multiply by Z* The Contract Sum (excluding VAT) *less* any Excluded Amounts and price adjustments.	1.25% * 6m = 75,000
4.	*Multiply by (CPI^A-CPI^B)* The change in the Consumer Price Index from February 2008 to March 2008;	75,000 * (133.6 – 119.3) = 75,000 * 14.3 = 1,072,500
5.	*Divide by CPI^B* The Consumer Price Index for February 2008.	1,072,500 / 119.3 = 8,990
6.	The result is **positive**, so subtract 10% of the result obtained in step 3 above.	8,990 – 7,500
Amount of increase in Contract Sum		**= €1,490**

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Part 4	**Appendix A: Price Variation Calculation under PV2 (Formula Fluctuations Method): Worked Examples (PW-CF1 to PW-CF 4)**
Section 4.7	**A7: Example – Increase in labour costs after the fixed-price period**

4.7.1 Variation details

In April 2008, the 38th Interim Valuation **(for the period to 31st March 2008)** includes a claim for increases in labour costs that occurred on or after the Base Date (1st February 2008) – that is, after the end of the fixed-price period.

The labour costs (excluding VAT) for the period covered by the Interim Valuation amount to €1,500,000.

The current Social Partnership Agreement provides for the following general round pay increases in the private sector:

3% from 1st July 2007

2% from 1st February 2008

4.7.2 Calculation

The Contract Sum adjustment in the 38th Interim Valuation **(for the period up to 31st March 2008)** is calculated as follows:

1. *Given EV* The value (excluding VAT) of labour used on the project in March 2008, based on the prices pertaining at the Designated Date;	1,500,000
2. *Multiply by Y* The percentage value assigned to labour in Appendix 7 to the Invitation to Tender;	1,500,000 * 30% = 450,000
3. *Multiply by GRI* The percentage increase in the General Round of the current Social Partnership Agreement that comes into effect on or after 1st February 2008	450,000 * 2%
Amount of increase recoverable	**= €9,000**

END