

**MULTILATERAL DEVELOPMENT BANK (MDB)
ABNORMALLY LOW TENDER (ALT) WORKING GROUP**

FINAL REPORT

April 2016

Version 5 (Final)

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I. BACKGROUND

The issue of Abnormally Low Tender (ALT) prices under works contracts, and the associated issues surrounding this subject, has increasingly become a major issue for the Multilateral Development Banks' (hereafter referred to as MDBs' or Banks') borrowers under public sector projects. The effects of this issue are, to one extent or another, now being experienced by most MDBs.

This situation has been exacerbated in recent years by the economic downturn and associated austerity measures which has created a difficult trading environment for contractors, with fewer tender and contract opportunities available. As a result, some construction firms are prepared to (or forced to) submit uneconomic or unsustainable tender prices purely to remain in business. In other instances, it would appear that some contractors are intentionally submitting low tender prices on the assumption that, during the subsequent contract implementation phase, situations will arise which will give the contractor opportunities to submit claims along with the opportunity to seek additional works, costs and time through variations to the original works. Such practices significantly increase the risk of subsequent poor contract performance, create difficulties during the subsequent contract implementation phase and have a damaging effect on the construction industry.

That said, it is difficult to compile any statistical data or other information that provides concrete evidence that links an ALT price with poor performance by a contractor and/or associated cost and time increases. This is predominately due to the fact that even when a tender has been priced at an appropriate level, a number of factors may result in a subsequent need for a large number of variation orders (i.e. as a result of changes to the quantity, quality, characteristics, sequencing of the works) or legitimate contractor claims (i.e. as a result of unforeseeable ground conditions/obstructions and/or exceptionally adverse climatic conditions) during the contract implementation phase. However, based on the collective experience of the Banks' and their respective clients, there is a widely-held view that acceptance of an ALT frequently results in numerous problems and issues for Contracting Authorities (CAs) during the subsequent contract implementation phase. The types of problems and issues that can, and do, arise are highlighted and discussed in further detail in subsequent sections of this paper.

In many of the MDBs' countries of operation, the national procurement procedures and legislation now contain provisions that permit the rejection of ALTs albeit under a wide range of conditions. However, currently, neither the Banks' standard tender documentation nor their respective procurement policies/rules covering public sector transactions permit clients to reject ALTs under Bank financed contracts.

As a consequence of the above, and the Banks' clients increasingly negative experiences of ALTs, the Banks' are coming under increasing pressure from clients to permit the rejection of ALTs under procurement exercises which are subject to the Banks' procurement policies/rules. This desire needs to be carefully considered in the context of the Banks' procurement policies/rules for public sector operations which are based on a need to achieve economy, efficiency, transparency and accountability in the procurement process.

In an attempt to address this issue, the MDB Heads of Procurement (HOPs) agreed that an MDB Working Group (WG) would be created and tasked with the identification of potential solutions to this issue. It was agreed that the WG would be coordinated by the EBRD and, at this stage, would only focus on ALTs under works contracts.

As part of this initiative, the EBRD hosted a one day conference on the subject of ALTs at the Bank's HQ on Tuesday, 15 October 2013. In the morning session, nine presentations pertaining to the ALT issue were delivered by; 1) EBRD, 2) Roads of Azerbaijan (EBRD Client), 3) Roads of Serbia (ERBD Client), 4) the Association of French International Contractors (SEFI) representing the Confederation of International Contractors' Associations (CICA), 5) the European Construction Industry Federation (FIEC), 6) Atkins, representing the International Federation of Consulting Engineers (FIDIC), 7) TYPESA Group, representing the European Federation of Engineering Consultancy Associations Engineers (EFCA), 8) Holman Fenwick Willan LLP, and, 9) IIKBW. The latter two presentations covered the legal issues surrounding the ALT issue in the context of the EU Directives. The afternoon session consisted of an interactive debate on the ALT issue moderated by Professor Gustavo Piga, Professor of Economics, Department of Business, University of Rome Tor Vergata.

In summary, based on the presentations delivered at the conference and the subsequent debate, it can be concluded that there is a general consensus that there are major risks

associated with the acceptance of an ALT and contractors should be discouraged from submitting tender prices which put the delivery of a contract at risk. It can also be concluded that in certain instances, where risks are considered to be sufficiently high as to have a potential impact on the successful implementation of a contract or project, in the event that they wish to do so, CAs should have the possibility to reject such tenders under transparent and predetermined conditions. Nevertheless, there is currently no clear proposal, or consensus, as to how this should be done. It is further noted that in the Joint Position Paper of CICA, FIDIC and EIC on the 'Revised Proposed New Framework for the World Bank's Procurement Policy' the issue of ALTs is specifically identified as an important issue that needs to be addressed in Phase II of the consultation.

In its Terms of Reference (ToR), which have been approved by the HOPs, the WG has been tasked with addressing the following;

- The identification of factors which indicate that a tender price may be considered as an ALT;
- The identification of measures that can be taken during the procurement process to prevent the occurrence of an ALT;
- The identification of the risks associated with the acceptance of an ALT and the mitigating measures that could be applied in the event that an ALT is accepted;
- The identification of the grounds, if any, upon which an ALT could or should be rejected (in the event that it is not possible to mitigate the potential risks of accepting an ALT in any given case);
- Reviewing the adequacy and appropriateness of the current procedures contained in the MDB Harmonised Standard Tender Document (STD) for Works for dealing with the ALT issue;
- In the event that new provisions are considered necessary and/or appropriate, preparing draft modifications to the ITT (for performance security clauses and tender evaluation); and,
- The preparation of a paper presenting the above findings and recommendations for consideration by the Heads of Procurement (HOP)

To address the above issues in a logical way, the Working Group (WG) has applied the following approach and methodology;

- The MDBs' current procedures contained in the MDB Harmonised Standard Tender Document (STD) for Works for dealing with tender prices that are substantially below the Employer's cost estimate, and the issues which subsequently arise, have been assessed and summarised;
- The WG has undertaken research into the manner in which ALTs are treated by other international organisations, international law and by the national laws in randomly selected countries in the Bank's countries of operation;
- The WG has further considered;
 - Whether the term ALT can be defined?
 - The consequences of accepting an ALT;
 - If and how ALTs can be prevented;
 - How ALTs can be identified/detected; and,
 - How ALTs can be eliminated;
- The WG has summarised its conclusions and recommendations

Full details of the above are provided in the following sections of the paper.

It is recognised at the outset that it is highly unlikely that a universal consensus will be reached on the views presented, either by all members of the WG or the industry itself. However, it is clear from the history and experience of many in the industry that the problem of ALTs must be addressed and any effort to do so should improve the situation beyond that which currently prevails.

For reviewers information, the terms 'CA' (Contracting Authority) and 'the Employer' are used interchangeably within this paper. In addition it should be noted that any references to specific provisions in the "Instruction to Tenderers (ITT)" in the Standard Tender Document (STD) for Works relate to the EBRD version of the STD for Works and may be different in the STD for Works published by other MDBs.

2. CURRENT PROCEDURES CONTAINED IN THE MULTILATERAL DEVELOPMENT BANK (MDB) HARMONISED STANDARD TENDER DOCUMENT (STD) FOR WORKS FOR DEALING WITH THE ABNORMALLY LOW TENDER (ALT) ISSUE, AND THE ISSUES WHICH SUBSEQUENTLY ARISE.

The MDB Harmonised Standard Tender Document for the Procurement of Works (hereafter referred to as the STD for Works) does not contain any specific reference to ALTs (nor do any of the MDBs' procurement policies/rules).

However, Instructions to Tenderers (ITT) 31.2 – Tender Adjustments of the STD for Works states *“If in the opinion of the Employer the Tender which results in the lowest Evaluated Tender Price, is seriously unbalanced or front loaded or substantially below the Employer’s estimates, the Employer may require the tenderer to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the tenderer to a level sufficient to protect the Employer against financial loss in the event of default of the successful tenderer under the Contract.”*

ITT 32 - Qualification of The Tenderer (commonly referred to as ‘Postqualification’) of the STD for Works further states that *“The Employer shall determine to its satisfaction whether the tenderer that is selected as having submitted the lowest evaluated and substantially responsive Tender meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.”*

The EBRD version of the STD for Works includes the following additional provision in Section III: Evaluation and Qualification Criteria which supplements ITT 32.1. This provision does not appear in any other MDB's STD for Works. *“The Employer will determine to its satisfaction whether the Tenderer selected as having submitted the lowest evaluated responsive tender meets the qualifying criteria specified herein and on the basis of the Letter of Tender and any supplementary information submitted has demonstrated that it is capable of performing the contract satisfactorily”.*

As can be seen from ITT 31.2 above, the current MDB STD for Works contains no direct reference to an ALT. However, in instances where a tender price is determined to be *“substantially below the Employer’s estimate”*, clients are provided with the possibility to request tenderers to provide a detailed price breakdown of any, or all, items in the Bill of Quantity

(B/Q). This price breakdown provided by the tenderer is analysed by the Employer and considered with due regard to the work methodologies and implementation schedule proposed by the tenderer with a view to demonstrate the internal consistency of the tender price (or at least the component of the tender price in question). This also provides the opportunity for the Employer to understand whether a tender price is “unbalanced” or “frontloaded” which are also issues which need to be carefully considered in the tender evaluation process.

This process is undertaken in accordance with the provisions of ITT 27 – Clarification of Tenders which states the following, *“To assist in the examination, evaluation, and comparison of the Tenders and qualification of the tenderers, the Employer may, at its discretion, ask any tenderer for a clarification of its Tender, allowing a reasonable time for response. Any clarification submitted by a tenderer that is not in response to a request by the Employer shall not be considered. The Employer’s request for clarification and the response shall be in writing. No change in the prices or substance of the Tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Tenders, in accordance with ITT 29”*.

In accordance with ITT 31.2, once the Employer has undertaken and completed this clarification phase and analysis, in the event that the presence of an ALT is identified (or, alternatively, in the event that the Employer has determined that the tender price is “unbalanced” or “frontloaded”) the only recourse available to the Employer is that it “may require” the successful tender to increase the amount of the performance security to *“a level sufficient to protect the Employer against financial loss in the event of default of the successful tenderer under the Contract.”* (or to make a decision to cancel the procurement exercise which could result in the respective cancellation of the Bank’s finance as the client would not have proceeded in accordance with the “agreed procedures”). It is appropriate to clarify at this point that ITT 31.2 makes no reference to what recourse (if any) is open to the Employer if the Contractor subsequently refuses to increase the amount of performance security (particularly in the event that the Contractor does not agree with the Employer’s assessment as to what reasonably constitutes a “sufficient level”).

Under the current provisions, following the tender evaluation process, once;

- (a) A tender has been determined as ‘substantially responsive’ to the commercial and technical requirements of the tender documents (which would mean, for example, that no serious inaccuracies in understanding the scope of the works had been identified);
- (b) Adjusted to take into account the specific evaluation criteria (for example, operation and maintenance costs, efficiency benefits, the cost of any minor deviations etc); and,
- (c) The tenderer has been determined as capable of performing the contract (i.e., meeting the postqualification criteria),

the contract must be awarded to the lowest evaluated tenderer.

The current provisions provide the Employer with no right or opportunity whatsoever to reject a tender purely on the basis that a tender price has been determined as an ALT. This remains the case even if following the clarification phase the Employer is in a position to evidence that the tendered price is grossly underestimated, insufficient or unsustainable.

It should also be noted that ITT 33 – Employer’s Right to Accept Any Tender and Reject Any or All Tenders states “*The Employer reserves the right to accept or reject any tender, and to annul the Tendering process and reject all Tenders at any time prior to contract award, without thereby incurring any liability to tenderers. In case of annulment, all Tenders submitted and specifically, Tender securities, shall be promptly returned to the tenderers*”. From time to time, Bank clients have attempted to rely upon this clause to reject an ALT citing the argument that, under this clause, the Employer has the right to reject “any” tender. The current provisions typically raise one or more of the following questions/issues:

- A discussion with the CA as to why it cannot reject an ALT (which can ultimately damage Bank relations with the client);
- How does one define the term “*substantially below the Employer’s cost estimate*”? (i.e. 10% below, 20% below or more?)
- Significant delays in the tender evaluation process, whilst the client undertakes a vigorous re-evaluation of the tender which it presumed that it could reject on the basis of an ALT (subsequent justifications for rejection are often based on highly subjective assessments on deviations/omissions subsequently considered to constitute material deviations by the Employer);

- A discussion with the Employer with regard to how any proposed increase in the level of performance security should be calculated and what actually constitutes “*a level sufficient to protect the Employer against financial loss in the event of default of the successful tenderer under the Contract*”. Currently the Banks’ have no clear policy or guidelines as to how this risk may be assessed.
- Dissatisfaction from the tenderer’s side with regard the Employer’s subsequent assessment of the level of increase in performance security required (and the basis upon which it has been calculated).
- The tenderer questioning the provision that states that “the Employer may require that the amount of performance security be increased...”) i.e. is ‘may’ a legally binding provision and what happens if the tenderer does not accept the Employer’s request in this regard (is the tender rejected, does the tenderer forfeit its tender security?)
- A general view from many MDB clients that, even with a substantial increase in the amount of performance security, the increased level of security does not address the problems and consequences that flow from the CA’s acceptance of an ALT (except possibly in cases where the contract is ultimately terminated for default and the security can be cashed).

Note: Arguably, the performance security is only of use to the Employer if the “default” referred to here is one that allows the Employer to claim against (e.g., under the termination clause when the contractor becomes insolvent or bankrupt) and not really for matters such as poor workmanship, low – but compliant – quality of materials, high claim opportunity awareness etc.

Ultimately, in a significant number of cases, the CA subsequently proceeds with the contract award, often with a relatively modest increase in the level of performance security, and then often experiences significant problems and issues in the subsequent contract implementation phase (Section 5 provides further details of the typical consequences that result from the acceptance of an ALT).

Note: During this exercise, the WG also has noted that the MDB Standard Tender Document for the Supply and Installation of Major Plant and Equipment, which is frequently used by Bank clients in both its single and two-stage formats in the procurement of major works contracts, does not incorporate the wording contained in ITT 31.2 – Tender Adjustments and therefore

provides the Employer with no right to request a tenderer to furnish a performance security in higher amount than required in the tender documents under any circumstances whatsoever (for the record, this STD also contains no provisions that would permit an Employer to reject an ALT).

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3. HOW ABNORMALLY LOW TENDERS (ALTS) ARE TREATED BY OTHER INTERNATIONAL ORGANISATIONS, INTERNATIONAL LAW AND BY THE NATIONAL LAWS IN THE BANKS' COUNTRIES OF OPERATION.

As a first step, the WG considered it important to understand how the issue of ALTs is treated by other international organisations and in the Banks' respective countries of operation. In this regard, the WG has researched the approaches contained in;

- A. UNCITRAL Model Law;
- B. WTO/GPA (Government Procurement Agreement);
- C. The European Union Procurement Directives;
- D. Northern Ireland Public Procurement Policy;
- E. Russian Federation Public Procurement Law;
- F. Republic of China
- G. Republic of Tanzania Public Procurement Law;
- H. Republic of Tajikistan Public Procurement Law;
- I. Republic of Serbia Public Procurement Law;
- J. Turks and Caicos Islands; and,
- K. The Commonwealth of the Bahamas

The WG's findings in this regard are summarised as follows:

A. United Nations Commission on International Trade Law (UNCITRAL)

UNCITRAL is the core legal body of the United Nations system in the field of international trade law. It is a legal body with universal membership specialising in commercial law reform worldwide for over 40 years. UNCITRAL's business is the modernisation and harmonisation of rules on international business.

UNCITRAL's Model law on Public Procurement (2011) states the following with regard to ALTs:

Under Article 20 - Rejection of abnormally low submissions:

- I. The procuring entity may reject a submission if the procuring entity has determined that the price, in combination with other constituent elements of the submission, is abnormally low in relation to the subject matter of the procurement and raises concerns with the

procuring entity as to the ability of the supplier or contractor that presented that submission to perform the procurement contract, provided that the procuring entity has taken the following actions:

(a) The procuring entity has requested in writing from the supplier or contractor details of the submission that gives rise to concerns as to the ability of the supplier or contractor to perform the procurement contract; and,

(b) The procuring entity has taken account of any information provided by the supplier or contractor following this request and the information included in the submission, but continues, on the basis of all such information, to hold concerns.

Article 22 - Acceptance of the successful submission and entry into force of the procurement contract, further states in para 1 (c) that the procuring entity shall not accept a submission which is identified as “abnormally low” under Article 20.

Under para 2, Article 22 further states that “The decision of the procuring entity to reject a submission in accordance with this article, the reasons for that decision, and all communications with the supplier or contractor under this article shall be included in the record of the procurement proceedings. The decision of the procuring entity and the reasons therefor shall be promptly communicated to the supplier or contractor concerned”.

B. WTO (World Trade Organisation)/GPA (Government Procurement Agreement)

The GPA establishes an agreed framework of rights and obligations among its members with respect to their national laws, regulations, procedures and practices in the area of government procurement. On the subject of ALTs, the WTO/GPA states the following:

“Only tenders that conform to the essential requirements of the tender notice or documentation and are from a supplier which complies with the conditions for participation can be considered for award. Entities have the obligation to award contracts to the tenderer who has been determined to be fully capable of undertaking the contract and whose tender is either the lowest tender or the tender which is determined to be the most advantageous in terms of the specific evaluation criteria set forth in the notices or tender documentation. An entity that has received a tender abnormally lower than other

tenders may enquire with the tenderer to ensure that it can comply with the conditions of participation and be capable of fulfilling the terms of the contract (Article XIII: 4)”.

C. European Union Procurement Directives

Public procurement in the European Union (EU) is governed by a number of Directives and Regulations which are then implemented in the national legislation of its member states. The subject of ALTs is specifically covered in Article 69 of the Public Contracts Directive 2014/24/EU of the European Parliament and of the Council dated 26 February 2014 (the “Directive”).

Article 69 of the Directive puts an explicit obligation on contracting authorities in member states to explain the price or costs proposed in a tender in situations where tenderers “*appear to be abnormally low in relation to the works, goods or services*”. In this regard, it is interesting to note that the Directive provides no guidance as to the basis upon which a tender may “appear” to be abnormally low. However, the Directive does provide guidance as to which elements of a tender price may be subjected to further scrutiny and clarification as follows once a tender is determined to “appear” to be abnormally low;

- (a) the economics of the manufacturing process, of the services provided or of the construction method;
- (b) the technical solutions chosen or any exceptionally favourable conditions available to the tenderer for the supply of the products or services or for the execution of the work;
- (c) the originality of the work, supplies or services proposed by the tenderer;
- (d) compliance with obligations referred to in Article 18(2) of the Directive (which requires that Member States take appropriate measures to ensure that in the performance of public contracts, tenderers comply with applicable obligations in the fields of environmental, social and labour law established by European Union law, national law, collective agreements or by the international environmental, social and labour law provisions);
- (e) compliance with obligations referred to in Article 71 (which covers subcontracting arrangements); and,
- (f) the possibility of the tenderer obtaining State aid.

Following an analysis and assessment of the above information by the contracting authority, Article 69 of the Directive states that:

- (a) the contracting authority may reject the tender “*where the evidence supplied does not satisfactorily account for the low level of price or costs proposed*”;
- (b) the contracting authority “shall” reject the tender “*where it has been established that the tender is abnormally low because it does not comply with the applicable obligations referred to in Article 18(2)*” (i.e. the applicable obligations of the environmental, social and labour laws).
- (c) Where a contracting authority has established that a tender is abnormally low because the tenderer has obtained State aid, the tender may be rejected on that ground alone only after consultation with the tenderer where the latter is unable to prove, within a sufficient time limit fixed by the contracting authority, that the aid in question was compatible with the internal market within the meaning of Article 107 of the Treaty on the Functioning of the European Union (Article 107 of the TFEU contains three provisions. The 1st lays down the definition of “incompatible” State Aid, the 2nd provides for cases of lawful derogations to the incompatibility and the 3rd provides for cases of discretionary derogation to the incompatibility). Where the contracting authority rejects a tender in those circumstances, it is required to inform the European Commission.

In summary it can be stated that whilst the Directive does not provide either any definition of an ALT or any guidance as to how the presence of an ALT can be identified, the Directive does require contracting authorities to fully investigate any tender that “appears” to be abnormally low and to subsequently reject any tender in a situation where the tenderer is unable to demonstrate the internal consistency of the tender price.

D. Northern Ireland Public Procurement Policy

On 18 June 2013, the Central Procurement Directorate (CPD) has issued a ‘Procurement Advice Note’ entitled “Construction Works Procurement: Abnormally Low Tenders”. The procedures contained in this guidance note apply to all construction works contracts where the estimated contract value is £30,000 or over. In instances where there are fewer than 4 tenderers, contracting entities are advised to “*consider if it is appropriate to apply the process*”.

The guidance note states that ALTs should be identified on the basis of the “adjusted average”. The adjusted average is calculated ignoring the highest tendered price. There is a requirement that a tender price must not be below the adjusted average boundary (which is 85% of the adjusted average price).

As there may be occasions where the application of the adjusted average would differentiate between tenders that are closely priced, procuring entities are required to include a safety element (referred to as “the proximity margin”) based on the proximity to the lowest qualifying price, to avoid this occurrence. In any instance where a submitted tender is more than 15% below the adjusted average and outside the proximity margin, it should be considered to be an ALT and the tenderer advised accordingly. The CPD has agreed with industry representatives that all ALTs identified using this procedure will be excluded from the evaluation process.

The below example details the basis upon which an ALT could be excluded from the procurement process through the application of the procedure described above.

Tenderer	Tender Price	Is the tender price below the Adjusted Average Boundary? (= £3,676,420)	Is the tender price below the Proximity Boundary? (= £3,663,000)	Automatically Exclude? If the two preceding columns both read yes, then the tender should be automatically excluded
A	£3,662,900	Yes	Yes	Yes
B	£3,663,100	Yes	No	No
C	£3,700,000	No	No	No
D	£5,000,000	No	No	No
E	£5,600,000	No	No	No
F	£5,700,000	No	No	No

Adjusted Average ...the average of those tenders received, excluding the highest = £4,325,200

Adjusted Average Boundary ...85% of the Adjusted Average (£4,325,200) = £3,676,420

Lowest Qualifying Price ...the lowest tender that is above the Adjusted Average Boundary (£3,676,420) = £3,700,000

Proximity Margin ...1% of the Lowest Qualifying Price (£3,700,000), but with a minimum value of £1,000 and a maximum value of £100,000 = £37,000

Proximity Boundary ...the Lowest Qualifying Price (£3,700,000) minus the Proximity Margin (£37,000) = £3,663,000

Lowest Boundary ...the lower of the Adjusted Average Boundary (£3,676,420) and the Proximity Boundary (£3,663,000) = £3,663,000

Conclusion: The lowest priced tender (£3,662,900) should be automatically excluded as it is below the Lowest Boundary (£3,663,000). Although the second lowest tender (£3,663,100) is below the Adjusted Average Boundary (£3,676,420), it is above the Proximity Boundary (£3,663,000) and should, therefore, not be automatically excluded. The successful tender is £3,663,100.

However, as Northern Ireland is required to comply with the EU Procurement Directives, this automatic exclusion can only apply to works contracts which fall below the EU thresholds (i.e. below £4,322,012) as an automatic exclusion on the basis proposed above would violate Article 69 of Directive 2014/24/EU described above (as the tenderer would not have been given an opportunity to clarify the basis for its low tender price). In instances where the estimated cost of works contracts are above the EU thresholds, this process is still used to identify ALTs but a procuring entity may only reject a tender once it has followed the clarification procedure described in Article 69 of Directive 2014/24/EU. If, following this clarification process, the procuring entity decides to accept an ALT, the tenderer is required to submit a detailed declaration, which acknowledges the risks associated with its tender, signed by a principal of the tenderer.

E. Russian Federation

In the Russian Federation, in Article 37 of the Law on Federal Contracting System which applies to public sector financed works contracts, states that in the event that the tendered price exceeds 15 million roubles (approx. EUR 330,000), and, the tender price is more than 25% below the published cost estimate, the contract may only be concluded after the tenderer has provided a performance security in an amount equal to, or exceeding, the original amount of performance security specified in the tender document, with the proviso that the value of the increased performance security shall not be lower than the amount of advance payment (if the contract conditions provide for an advance payment).

For tender prices below 15 million roubles, the same provision applies with the exception that the contracting authority has the right to waive the requirement for an increased amount of performance security if the tenderer can demonstrate the satisfactory implementation of three, or more, contracts within the past 12 months. If the tenderer fails to provide such satisfactory evidence, or, in the event that the contract authority has reasonable grounds to

doubt whether the reference projects named by the tenderer have been successfully implemented, the contracting authority is required to proceed with the contract award following the provision of an increased performance security as described in the above paragraph. In the event that a tenderer fails to provide the increased performance security the tenderer will be rejected.

F. Republic of China

In the Republic of China, the procurement practices (*de jure and de facto*) are very different in different sectors and in different provinces, municipalities, prefectures, counties and towns. The Republic of China has 2 National Procurement Laws, namely:

- 1) The Tendering and Bidding Law (TBL) – Effective January 1, 2000; with oversight by the National Development Reform Commission (NDRC) and
- 2) The Government Procurement Law (GPL) – Effective January 1, 2003; with oversight by the Ministry of Finance (MOF)

The greater majority of procurement (including the procurement of works) is undertaken under TBL which contains the following provisions with regard to ALTs. In order to harmonize and standardize bidding procedures, including advertisement, bid evaluation, handling complaints, etc. the State Council issued Regulations on the Implementation of the Bidding Law (RIBL) which came into effect on February 1, 2012.

- Article 27: The Employer has the option to prepare a “Base Bid Price” which shall be kept confidential. The Employer also has the option to set a “Maximum Bid Price”. If the Employer sets a “Maximum Bid Price”, it shall be disclosed in the bid documents. The Employer shall not set a “Minimum Bid Price”. The various sectors have detailed instructions/software on how to determine the “Base Bid Price” based on reference prices published by various sectoral and municipal authorities and based on the construction/cost norms.
- Article 50: If the Employer has set a “Base Bid Price”, it shall be announced at the bid opening. The “Base Bid Price” may only be used as a reference for bid evaluation. Bids shall not be rejected on the basis that the bid price is not within a range of the “Base Bid Price”.

- Article 51(5): The Bid Evaluation Committee (BEC) shall reject a bid if the bid price is lower than the reasonable Cost of the works, or higher than the price ceiling set in the bidding documents. The sectors have a detailed methodology for determining the reasonable cost of the works.

The NDRC has also published a book providing Guidance on the Articles in the RIBL in 2012. Guidance provided for Article 51(5) states that: If the BEC is of the opinion that the bid with the lowest price is abnormally low, then it shall request the Bidder in writing through the clarification process to provide a breakdown and explanation for its rates/prices. The BEC then has 2 options after analysing the Bidder's response:

- a) Make a recommendation to award the contract if the Bidder's explanation is reasonable; or
- b) Reject the bid.

There are no provisions in the RIBL for increasing the amount of the performance security which is set at 10% of the Contract Price (Article 58).

G. Republic of Tanzania

The National Public Procurement Policy of the United Republic of Tanzania incorporates the following provisions with regard to ALTs:

a) Policy Issue - Sometimes low priced tenders or highly priced tenders are thrown out of competition without a proper and careful analysis. Procurement Entities can benefit from examining the underlying reasons for the abnormally priced tenders. There can be valid and useful reasons for what appears to be abnormal pricing and this can be useful information.

b) Policy Objective - To minimize costs and maximize the benefits from lower priced tenders that might have some added value to delivery.

c) Policy Statements:

i) Any tender that is evaluated and found to be abnormally low or high shall not be just rejected without establishing reasons, or a lack of reasons for out-of-range pricing.

ii) There shall be an investigation and a consideration of the elements that may have given rise to a particularly low or high bid price. This is because the causal elements might have been technical innovations to reduce inputs such as finances, time and labour.

iii) Abnormally low or high tenders shall be considered alongside with other provided that they have qualified on their technical proposals. They shall be re-evaluated to establish reasons for such abnormal offers, and such reasons should be documented for review.

iv) The government shall provide verification mechanisms and opportunity for bidders of abnormally low or high tenders to make clarifications about their low or high bid prices in cases where decision-makers cannot discern the reasons for the abnormally low or high price tendering.

H. Republic of Tajikistan

The Law of the Republic of Tajikistan on Public Procurement of Goods, Works and Services, under Article 42, examination and comparison of tenders, simply states that the tender commission “will consider and reject a tender if the tender price is more than 10% below the cost estimate for the construction works” (without any further justification or substantiation).

I. Republic of Serbia

Serbian Public Procurement Law, under Article 92, states that a contracting authority may reject a tender due to an abnormally low price. The Law defines an abnormally low price as “*an offered price which substantially deviates from comparable market price thus raising doubts in feasibility of implementing public procurement pursuant to the offered conditions.*” Prior to rejecting a tender on this basis, the contracting authority is required to request the tenderer to provide a detailed explanation of “*all constituent elements of the tender it considers relevant, in particular those concerning the economy of the construction method, the production, or the selected technical solutions, that pertain to exceptionally favorable circumstances for implementing contract available to the tenderer, or to the originality of products, services or works proposed by the tenderer*”. There is an explicit requirement for the tenderer be provided with a “reasonable” time to provide its response to any such request.

Article 92 contains a specific provision which requires the contracting authority to pay particular attention to the tenderer’s ability to deliver (within the tendered price) its

obligations with regard to its ability to fulfill its obligations with regard to any applicable legislation with regard to health and safety aspects, protection of the environment and protection of intellectual rights and to demand adequate evidence for the tenderer in this regard.

J) Turks and Caicos Islands

The tender evaluation criteria used for national competitive bidding for works contracts includes the following clause: *“Prices that the evaluation committee deem as unrealistically low without any justification from the bidder will not be considered.”*

K) The Commonwealth of the Bahamas

The current rules for procurement do not include formal reference to ALTs. However, in practice, the following has approach has been taken in some instances:

Depending on the nature of the works / risk involved / Employer's prior knowledge of the tenderer involved / spread of tenders received (i.e. whether tightly bunched with just one or two outliers, or uniformly spread across the spectrum), if a tender is >10% below (for otherwise tightly bunched), or > 25% below (for uniformly spread across spectrum), the in-house estimate (or average of tenders received dependent on circumstance), then:

- a) It is subjected to especial scrutiny, and depending on the category of work / risk/ knowledge of tenderer/ urgency, and could be dismissed on those grounds, or alternatively,
- b) The tenderer's attention may be drawn to particularly low rates (in comparison to in-house/ average of other tenders prices) and requested to confirm in writing that they can deliver the relevant works for the price quoted.

4. DEFINITION OF AN ABNORMALLY LOW TENDER (ALT) PRICE

There are two main causes that result in ALTs. These are:

- 1) Intentional under-pricing by the tenderer; and/or
- 2) Errors and/or omissions which are, by definition, accidental.

Currently there appears to be no common definition of an ALT and the majority of laws and regulations which cover the topic, for example, those highlighted in Section 3, do not contain a clear definition. One exception is the UNCITRAL Model law on Public Procurement (2011) which defines abnormally low submissions as “*submissions with prices so low they raise performance concerns*” which is a very subjective definition and open to interpretation. As also seen in Section 3, some laws and regulations, more simply define an ALT as a tender which offers a tender price a stated percentage below the average tender price quoted by all tenderers.

Although any definition will be subjective and open to debate, the MDB WG proposes the following definition – “*An ALT is a tender where the tender price, in combination with other constituent elements of the submission, appears to be abnormally low in relation to the subject matter of the contract to the extent that the tender price raises material concerns with the procuring entity as to the capability of the tenderer to perform the contract for the offered tender price.*”

Notwithstanding the above, the WG considers that **the manner in which an ALT is to be identified** is of far more significance than the proposed definition of an ALT.

5. RISKS OF ACCEPTING AN ABNORMALLY LOW TENDER (ALT)

The consequences for a CA that accepts an ALT can be varied and wide-ranging. They can include some, or, in very serious cases, many, of the following:

- The creation of an adversarial relationship between the contracting authority and the contractor (and its subcontractors), and an associated lack of trust, from the outset of the contract;
- A significant number of requests for variation orders and/or contractor claims during the project implementation phase which invariably creates a huge administrative burden on the implementing authority (and its supervision authority/consultant) during the contract implementation phase (and also the MDBs who may need to review and provide no-objection to the variation orders and/or contractor claims in order to determine their eligibility for financing from the proceeds of the loan);
- Significant cost and time overruns (as a consequence of the above);
- Attempts by contractors to lower overheads and costs by minimising staffing levels, providing inadequately qualified and experienced staff, seeing alternative (to those proposed) sub-contractors to execute works/provide services etc., providing materials, equipment and levels of workmanship that are the absolute minimum (or worse), adopting cheaper (usually meaning unsafe) methods of working, 'squeezing' sub-contractors and suppliers and minimising investments in health and safety aspects in an attempt to reduce construction costs;
- Slower disbursement of loan proceeds (which increases the cost of the loan to the borrower);
- A reduced level of competition due to a reluctance from tenderers - which are not prepared to submit uneconomic or unsustainable tenders - to participate in tender exercises in instances where they suspect that a competitor may submit an ALT;
- Costly referral of issues to the Dispute Adjudication Board (DAB) and similar dispute resolution mechanisms;
- Termination of contracts for poor/unsatisfactory performance which in certain instances can result in lengthy and costly arbitration cases;
- The risk of bankruptcy or insolvency of the Contractor prior to the completion of the contract;

- Serious financial consequences for sub-contractors and sub-suppliers (many of which constitute SMEs) in instances where contractors have failed to pay sub-contractors and sub-suppliers invoices due to delays in payment attributable to the contractors unsatisfactory performance or subsequent bankruptcy or insolvency,
- A need to deal with the “fall-out” which results from the poor/low quality work that often accompanies an ALT, such as additional payment to the Engineer to get the defective work rectified (i.e. during the Defect Notification Period (DNP) and correction of latent defects that arise after the end of the DNP); and,
- The possibility of corrupt practices during the contract implementation phase

The WG acknowledges that some, or all, of the above events may still occur following acceptance of an adequately priced tender. Nevertheless our collective experience shows that the likelihood of one or more of the above events occurring increases significantly when an ALT is accepted.

6. PREVENTION OF AN ABNORMALLY LOW TENDER PRICE

It is likely to be the case that whatever procedures/safeguards are put in a place by a CA in an attempt to prevent an ALT, for the reasons explained earlier in this paper, there will always be tenderers that will be prepared to submit an ALT in an attempt to secure a contract. Nevertheless, there are certain steps that can be taken to reduce the possibility/potential for an ALT. Examples of these steps are as follows:

- **Project Preparation/Design.** In recent years, partly as a consequence of political pressure and the associated desire to demonstrate speedy results, it can be argued that less attention has been paid by CAs to the project preparation/design phase of Bank financed projects. Inadequately prepared/designed projects will almost inevitably provide contractors with opportunities to seek variations and/or additional works and to submit claims during the subsequent project implementation phase and encourage the submission of ALTs. In this regard, the WG supports the initiative of CICA and its partners with regard to its development of the Well-Prepared Project (WPP) initiative and considers that this can be an effective tool to assist with the prevention on ALTs.
- **Adequacy of Budget for Works.** Particular attention should be given to ensuring that the financing allocated for works contracts is adequate and sufficient. Whilst cost estimates for works contracts are not routinely published and made known to tenderers, these can often be established by tenderers based on information published in the General Procurement Notice (GPN) or through the other sources, such as the Employer. Clearly in situations where the budget is considered by contractors to be inadequate, this may lead to a situation where tenderers submit ALTs, or look to minimise costs associated with issues such as health and safety or training, to ensure that their tenders are not rejected on the basis that they substantially exceed the cost estimate.
- **Quality of Tender Documentation.** Tender documentation for major works contracts needs to be of a high quality and needs to be devoid of ambiguities, contradictions and omissions in the contract conditions and technical documentation. As with inadequately designed projects, inadequately prepared tender documentation leads to a possibility that tenderers may misinterpret

(genuinely or intentionally) requirements and/or take pricing risks and also provides contractors with opportunities to claim during the subsequent project implementation phase. Particular attention should be given to ensure the accuracy and completeness of geotechnical data which frequently provides contractors with opportunities to make claims if inaccurate or incomplete. If a potential tenderer can see potential ambiguities in the tender documentation at the tender preparation stage, it may take this opportunity to submit an ALT in the knowledge that it will be able to exploit such ambiguities during the contract execution phase. Where a CA has insufficient capacity, experience or resources to prepare tender documents to a professional standard, the CA should be encouraged to engage qualified consultants with, very importantly, a well thought through Terms of Reference (TOR) and an adequate budget. It is further considered that CAs should be encouraged to make all available technical data to tenderers at the tendering stage (such as feasibility studies, full availability of the complete set of design documentation, where applicable, etc) which will help to eliminate the need for tenderers to make assumptions when preparing their tenders.

- **Adequacy of Response to Tenderer's Clarification Request.** All too frequently, CA's provide inadequate responses to tenderers' queries/request for clarification that do not answer, or inadequately answer the query raised by the tenderer. This approach often forces contractors to make assumptions which may be incorrect and which may impact upon the adequacy of the tender price. CA's should be encouraged to provide adequate, detailed responses to such requests.
- **Detailed Breakdown of Key Unit Rates at Tendering Stage.** Under current practices, tenderers are only required to insert unit rates for items of works in the Bill of Quantities or insert lump sums in the Price Schedules for design-build type contracts. If tenderers were routinely required to provide a more detailed breakdown of their key unit rates for major items of works at the tendering stage (for example, in the UK's Civil Engineering Standard Method of Measurement (CESMM) format, which sets out a procedure to which a Bill of Quantity should be prepared and priced and the quantities of work expressed and measured – although this approach only applies to Employer designed works, the Employer could specify a similar type of procedure/approach to be followed in the preparation of Price Schedules for a Design-Build contract) this would not only

facilitate the CA in its analysis and comparison of tender prices, but force tenderers to pay more attention to the manner in which their tenders are being priced and whether those prices can be substantiated. Whilst this approach would make no difference to a tenderer that is intentionally under-pricing it may help to reduce or avoid unintentional errors.

- **ALT Clause in Tender Documents.** For CAs that are permitted to reject ALTs under the applicable laws/regulation, potentially the most effective preventative measure is a statement in the tender documents which advises tenderers that ALTs will be rejected.
- **Prequalification Phase.** Following a prequalification exercise, the list of firms that will be invited to tender is made known to all tenderers. Assuming that the prequalification exercise has been undertaken in an appropriate manner, and only suitably capable/qualified contractors have been prequalified, tenderers have the comfort of knowing that they are only competing against other qualified tenderers meeting realistic minimum competence criteria with the assurance that inadequately qualified competitors will be excluded from submitting unrealistically low tenders.
- **Adequacy of Qualification Criteria.**
Notwithstanding whether tenderers will be subject to prequalification or postqualification it is essential to ensure that only tenderers that have adequate experience to undertake the contract can be qualified for contract award and criteria must not be set at arbitrarily low levels. In the Banks' experience there appears to be a direct link between ALTs and questionable financial soundness. As such, careful consideration should be given to the development of appropriate financial criteria to ensure that contracts are not awarded to tenderers with financial problems. It may also be prudent to limit qualification to tenders which comply with international standards on environmental management/health and safety (such as ISO 14001, OHSAS 18001 etc). Nevertheless, the issue of qualification criteria remains a very subjective and contentious issue in many of the MDBs' countries of operations and needs careful consideration to ensure that qualified local tenderers are not unreasonably excluded from the tendering process for reasons not related to their capability to perform the contract in

question. Appropriate consideration also needs to be given to the capabilities of Small and Medium Enterprises (SMEs) in this regard.

- **Adequacy of Performance Security.** As discussed in Section 2, currently the only recourse available to the CA in the event that it accepts an ALT is to increase the amount of performance security to be provided by the contractor. Historically, under MDB financed procurement, the amount of performance security is most commonly determined at the tendering stage in the fixed amount of 10% of the accepted contract amount. In the event that CAs are provided with the possibility to reject ALTs, there is a logical argument to remove this potentially controversial provision from the tender documents. The logic being that if a tenderer has submitted an ALT, but, following clarification and analysis, subsequently demonstrates that it is capable of implementing the contract for the price quoted, why should it subsequently be required to increase its level of performance of security (which may be considered as a punitive and non-competitive approach)? The issue with this logic is that, in reality, the amount of performance security (in the amount of 10% of the accepted contract amount) is normally set on an arbitrary basis with no real consideration as whether the amount of security genuinely reflects the ultimate cost to the borrower of non-completion by the contractor. If the level of performance security has, at the tendering stage, genuinely been set an amount that reflects the estimated losses to the CA as a consequence of non-performance by the contractor, it would be reasonable to accept that no further increase should be requested and that this provision could be deleted. If this level of performance security is made known to tenderers at the tendering stage this may also be a useful tool to discourage tenderers from submitting ALTs as the ultimate penalty for non-performance would potentially be higher. The other benefit of this approach is that it would help to avoid the lengthy delays that frequently occur as a consequence of the disputes that can arise when CAs attempt to invoke their right to increase the level of performance security.
- **Adequacy of Tendering Period.** All too frequently, CAs are providing contractors with an insufficient period within which to prepare and submit their tenders for major works contracts. This practice results in tenderers often having to make assumptions with regards to risks which they have not have ample

opportunity to assess and in some cases can result in a tenderer inadvertently submitting an ALT.

- **Use of Two-Stage/Multi-Stage Tendering.** For complex design and build type contracts, the risks associated with tenderers misinterpreting CAs requirements or making incorrect assumptions when preparing and pricing their tenders can to some extent be minimised through the application of a “two-stage” or “multi-stage” procurement strategy. An increased use of this approach for major works contracts, which encourages a dialogue between the tenderer and the CA during the tendering stage, could help to prevent ALTs. However, it should be noted that a high level of implementation capacity is necessary to successfully implement a two-stage procurement strategy and the two-stage process can lead to substantial delays in the tender evaluation process if the process is not used appropriately or undertaken by experienced and qualified personnel.
- **Adequacy of Budget for Supervision of Works.** In recent years, in instances there has been downward pressure on the amounts allocated by CAs for the supervision of works. In instances where the supervision engineer is adequately funded and resourced, and therefore in a situation where the supervision engineer has the resources to more closely supervise the works and investigate contractor claims and performance, it is considered more likely that a contractor would be less likely to risk submitting an ALT. Certainly, if the supervision engineer is adequately resourced there is far less opportunity for a contractor to minimise investments in health and safety aspects, and to attempt to cut corners on these aspects, in an attempt to reduce costs during the contract implementation phase. (Note: Whilst it is appreciated that in the majority of cases a contractor would not, at the tendering stage, be aware of the available budget for the supervision engineer, in instances, this information can be obtained from the published budget for TC assignments. In addition, there are clients that have repeatedly allocated low or insufficient budgets for supervision services which will be known by certain contractors), and finally;
- **Construction Sector Transparency Initiative (CoST).** CoST works with government, industry and civil society to promote the disclosure of information

on public investment in infrastructure. The information is designed to inform and empower stakeholders and enable them to hold decision-makers to account. Informed stakeholders and responsive public institutions combine to strengthen accountability and help create a business environment in which corruption is less likely to occur. It may be possible to make use of this initiative to help avoid the submission of ALTs through an increased disclosure of information with regard to the original tender price and the final out-turn cost and the basis upon which any costs increases/overruns have been incurred by a CA (at least this may force CA's to seriously consider the need to take all of the above mentioned factors into account in the procurement process as the CA's will be under pressure to publically explain cost increases identified in the contract execution phase).

Nevertheless, even if all of the above have been satisfactorily addressed and/or taken into account, there still remains a possibility that a tenderer may submit an ALT.

7. IDENTIFICATION/DETECTION OF AN ABNORMALLY LOW TENDER PRICE.

Currently, the Employer's cost estimate is the only indicator referred to in the MDB STD for Works (ITT 31) that may be used for the purposes of identifying an ALT. The cost estimate is not normally made known to tenderers. However, the Employer's cost estimate on its own is not always a reliable indicator. For example, it is not uncommon for the Employer's cost estimate to be:

- a) Calculated by a consulting firm at a very early stage of the project with very little input from the Employer;
- b) Based on outdated information (such as the feasibility study) and therefore no longer accurate or relevant at the tender evaluation stage;
- c) Based on a particular work methodology or method of construction proposed by the original designer which may not subsequently be proposed by the tenderer in its tender (of particular relevance to design and build contracts);
- d) Based on assumptions made by the designer (i.e. current cost of materials which are subsequently subject to price adjustment, current legislation which may be subject to change etc) which may subsequently be invalid; or,
- e) Simply inaccurate.

Other indicators, such as the cost of similar works contracted by the Employer, may equally be based on factors which are no longer relevant (i.e. the price of steel or oil based products/economies of scale as a result of other on-going contracts etc). At the same time, for a number of reasons, a tender price which is below the Employer's cost estimate may also not be abnormally low. For example;

- A tenderer's mobilisation costs could be significantly lower if the tenderer already has an on-going construction contract underway near the proposed project site, and could also benefit from economies of scale (for example, when procuring materials);
- A tenderer may be keen to enter a new market (e.g. in terms of country of operation and/or type of work) and takes the conscious strategic position to tender low, using a project as a 'loss leader'. *(The WG members have seen very little evidence of such an approach for major works contracts and consider this is more applicable to goods and*

consultancy services contracts. Nevertheless, a reference to this issue in the paper as this topic is often raised and referred to in any discussion on ALTs.);

- A tenderer could have proposed a much more efficient or innovative method of working than other tenderers;
- A tenderer may be attempting to break into a collusive market (in such cases, the “market” prices may be artificially inflated and therefore the Employer’s estimate could make a competitive tender look abnormally low by comparison; and,
- A tenderer may have received a state subsidy (for example, China).

It should also be noted that even tenders which are priced in excess of the Employer’s cost estimate may not be sustainable and could still be classified as ALTs if the tenderer has calculated its tender price on the basis of an incorrect assumption.

It is therefore considered that the key issue to focus upon during the tender evaluation process is to establish whether a tenderer to be proposed for contract award “is capable to deliver the contract for the tendered price”. In most instances, such a determination can only be made following a detailed clarification process between the CA and the contractor as a part of the tender evaluation process.

The first essential step in the tender evaluation process would be to identify which tenders may constitute ALTs and which therefore require further in-depth review and clarification. Typically there are two approaches that are followed in this regard known as the ‘absolute’ approach and the ‘relative’ approach. The ‘absolute’ approach generally entails the identification of an ALT based on a comparison of a tender price, and its constituent parts, with the client’s own cost estimate for the works, whilst the ‘relative’ approach permits the identification of an ALT based on a comparison of a tender price with the average tender price submitted by other tenderers. Whilst the ‘absolute’ approach can theoretically be applied in any given situation (on the assumption that a reliable cost estimate exists), in reality, as mentioned above, the cost estimate is often not accurate; for example, it can be based on outdated information, i.e. an old feasibility study, based on a particular work methodology or method of construction, based on assumptions made by the designer (i.e. current cost of materials).

The 'relative' approach compares the lowest tender price by deviation from the mean of the other tenders (also known as the 'arithmetic deviation' approach). The benefit of this approach is that it reflects real market conditions. However, this approach can only be applied in a meaningful manner in the event that a reasonable number of tenders are submitted (at least 5), and can be subject to manipulation through a prohibited practice.

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8. ELIMINATION OF AN ABNORMALLY LOW TENDERS

- **Most Economically Advantageous Tender (MEAT) Evaluation Criteria.**

Some commentators have put forward an argument that the application of MEAT evaluation criteria can help to eliminate ALTs. MEAT evaluation systems are generally based on a merit point approach which aims to identify the most economically advantageous tender based on the best quality and value for the CA rather than only the lowest price. Typically points allocated to quality based considerations, for example;

- Organisation and experience of the contractor's project team and management;
- Proposed procedures for planning and management;
- Proposed joint venture and/or sub-contracting arrangements;
- Identification of risks and proposals to manage those risks;
- Quality plan;
- Innovation of design and/or work methodologies;
- Maintainability;
- Quality of documentation;
- Health and safety proposals; and,
- Environmental aspects

Whilst the benefits of the MEAT approach in a complex tenderer evaluation process can be argued, it is unlikely that this approach would entirely eliminate ALTs. On the basis that, if economy in the procurement process is to be achieved, any MEAT based approach will always need to allocate a significant number of points for the 'tender price' this approach will not eliminate the worst ALT cases (as the 'abnormally low' tender price will still enable the ALT tenderer to achieve the highest overall score unless the technical proposal is significantly inferior to other tenderers). Furthermore, the MEAT approach frequently requires very subject judgement by the tender evaluation committee, and, in a worst case scenario, can be open to abuse (and claims of abuse, even when there has been no abuse) which can result in highly complex procurement related complaints. The WG also considers that this approach would be unsuitable for CA's with lower implementation capacity and could be counter-

productive. Finally, some WG members have indicated that a MEAT approach may require a material modification to their procurement rules.

For these reasons, whilst it is acknowledged that the MEAT approach could, in some instances, play a role in eliminating ALTs, this approach has not been considered further in this paper.

- **Rejection of ALTs**

Providing CA's with an opportunity to reject ALTs appears to be the only approach that can guarantee the elimination of an ALT.

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9. CONCLUSIONS

It is clear that the potential impact of ALTs can have severe consequences for all parties associated with works contracts. The MDBs' current approach to addressing the ALT issue is increasing becoming outdated and subject to criticism by not just Bank clients, and in some cases their respective Governments, but various stakeholders in the construction industry.

Whilst there are many steps that can be taken to help avoid the potential for an ALT, there appears to be no infallible method to eliminate the occurrence of an ALT. It is therefore not surprising that international organisations such as UNCITRAL and the WTO/GPA, the European Union and many country procurement systems, have introduced provisions into their respective procurement policies that permit the rejection of ALTs under various conditions.

As can be concluded from Section 3, the majority of regulations/laws that deal with ALTs fall into one of two categories. In the first category are regulations that define ALTs by arithmetic deviation from the average tender price and automatically exclude such tenders. In the second category are proposals that allow CA's to reject ALTs but which put an explicit obligation on CA's to ascertain whether there is any legitimate explanation for the low price before taking a decision to reject.

The MDBs now appear to have four potential options to consider with regard to the way forward. The advantages and disadvantage of each option are elaborated below:

Option 1 - Maintain the Existing Procedures and Practices. The first option is the "do-nothing" option and to maintain the existing procedures and practices.

- Advantages
 - The MDBs need to take no further action.
- Disadvantages
 - As highlighted in Section 5 of the paper, there are many serious risks and potential consequences for a CA that accepts an ALT. The impacts and effects of such risks and consequences have been seen by most MDBs on a number of Bank financed projects. The MDBs' existing procedures and practices do not currently allow the rejection of ALTs, purely on the basis of an abnormally low price. Failure by the MDBs to take steps to allow Bank clients to avoid these

consequences will increasingly result in criticism of the MDBs outdated approach and potentially result in significant reputational damage for the MDBs.

Option 2 - Maintain the Current Procedures and Practices with Minor Modification. The second option is to maintain the existing procedures and practices but to introduce modifications to provide further clarity to the existing provisions and procedures. For example, as highlighted in Section 2 of the paper, the provisions of ITT 31.2 – Tender Adjustments could be further clarified by, for example, a) introduction of the term “ALT”, b) referring to other indicators than simply the “Employer’s cost estimate” for the purposes of identifying an ALT, c) introducing wording which clarifies that if a tenderer does not accept any proposal by an Employer to increase the amount of performance security its tender will/may be rejected etc.

- Advantages
 - The required modifications could be developed and introduced into the STD for Works relatively quickly.
 - No amendment to the MDB’s procurement rules would be necessary.
- Disadvantages
 - The modified provisions would not permit the rejection of an ALT and therefore the same disadvantage noted for Option 1 above would apply.

Option 3 – Permit the Rejection of ALTs (based on an “arithmetic deviation” approach). The MDBs could introduce new provisions into the STD for Works which would permit the rejection of ALTs based on arithmetic deviation. Perhaps the best example of such an approach is the approach advocated by Northern Ireland Public Procurement Policy and detailed in Section 3.

- Advantages
 - This approach is the simplest to implement and, theoretically, the most transparent approach.
 - The approach itself may contribute to a reduction in intentionally submitted ALTs as clearly there is no advantage in doing so (as the ALT would be recognised as an ALT and rejected).
- Disadvantages

- The approach potentially eliminates ALTs which may be justifiably low and which are therefore perfectly acceptable and is therefore potentially anti-competitive.
- To be at its most effective, the approach requires a high level of competition and would not be effective in situations where there were a low number of tenderers.
- The approach would almost certainly require an amendment to the MDB's procurement rules as it potentially contravenes the key procurement principle of 'economy' in the procurement process.

Option 4 – Permit the Rejection of ALTs (after a clarification process). The MDBs could introduce new provisions into the STD for Works which would permit the rejection of ALTs if, following a detailed clarification process, a tenderer is unable to justify its low price.

- Advantages

- ALTs which cannot be substantiated are legitimately rejected.
- This approach is consistent with the general approach advocated by UNCITRAL, the WTO/GPA and the European Procurement Directives.
- If undertaken in the correct manner, the 'clarification process' should provide a transparent audit trail that would support the rejection (or acceptance) of an ALT.

- Disadvantages

- The approach will inevitably require an element of subjectivity and specialist skills that may not be readily available to all Bank clients.
- The approach could be very time-consuming.
- The approach could be abused and result in an elevated level of procurement related complaints.
- The MDB's would need to develop a detailed procedural guidance note covering 'identification of an ALT' and the subsequent 'clarification process' (as no industry standard/produced material currently exists) .
- The approach could potentially require an amendment to the MDB's procurement rules.

The WG considers that on the basis that rejection of an ALT appears to be the only way to ensure that an ALT is excluded from a procurement exercise, if the MDBs are to seriously address this issue, then neither options 1 and 2 provide a satisfactory solution.

The WG considers that whilst Option 3 provides the simplest and potentially most transparent method to eliminate ALTs through arithmetic deviation from the average tender price (and automatically exclude such tenders) this approach does have major drawbacks. Whilst this may be a useful approach to aid the identification of an ALT and is clearly the easiest approach to implement - and in most cases highly transparent as all tenderers are aware of the rules of the game up front - this approach potentially eliminates tenders that are legitimately competitively priced (as the tenderer would have no opportunity to explain and justify its pricing) and furthermore provides no guarantee that the remaining tenders which are not eliminated are also not ALTs. It is also evident that even in situations where a tender price is in line with a budgetary cost estimate, that in itself is no guarantee that the tender is adequately priced. A positive assessment in this regard can only be made after analysis by the contracting authority of the detailed breakdown of the tender price and its sub-components, vis-à-vis the proposed work methods, quality and source of materials. As can be seen from the example in Section 3, this approach may also create an illogical situation where tenders with very marginal differences in their tender prices can be considered in a substantially different manner (i.e. one is considered to be an ALT and the other is not). That said, in fairness, it must be acknowledged that no system is going to be perfect or fit every situation or provide the 'right' outcome every time and this approach may be considered appropriate or "fit for purpose" for very low value works contracts (i.e. those not subject to Open/ICB tendering procedures). However, in view of the fact this approach requires the automatic rejection of tenders that may justifiably not be ALTs, it is considered that this approach cannot be considered as meeting the MDB's fundamental principle for 'economy' in the procurement process and therefore is not consistent with the MDBs' current procurement rules and guidelines.

The WG members unanimously agree that Option 4 provides the only feasible solution to the ALT issue. As stated above, the principles of Option 4 are consistent with the approach advocated by UNCITRAL, the WTO/GPA and the European Procurement Directives and is therefore consistent with the principles of the MDB's procurement rules

and guidelines which are all consistent with at least one of the of these institutions procurement principles.

This approach allows CA's to reject ALTs but puts an explicit obligation on CA's to ascertain whether there is any legitimate explanation for the low price before taking a decision to reject. This approach is considered a much more rational approach which avoids the unreasonable and quite illogical and unacceptable rejection of tenders which may represent value for money. Naturally, it is essential that the process followed is undertaken in such a manner that provides the tenderer with every opportunity to clarify the basis and logic behind its tender price to avoid or reduce the possibility for subsequent procurement related complaints. This approach is also considered to be consistent with the MDB's procurement policies/rules and, in particular, the requirement for contracts to be awarded to the lowest evaluated tenderer who has been determined to be fully capable of undertaking the contract. The logic being that if a tenderer has submitted a tender at a stated price and is unable to demonstrate that it can deliver that contract for the price offered, it has not demonstrated that it is fully capable of undertaking the contract. It would therefore appear that modifications could be made to the STD for Works to incorporate this approach without a need for any MDB to make corresponding adjustments to its procurement policies/rules. However, this assumption will require consultation with each MDB's legal teams before a final decision can be made in this regard.

The main issue to tackle with this approach will be the need to develop a transparent procedure for CAs to use to identify potential ALTs and to follow during the 'ALT examination and clarification process' (as currently there is no industry standard material that addresses either of these issues) and which meets the MDB's overriding procurement principles that require public procurement to be undertaken in an economic, efficient and transparent manner. It is considered that this approach should be developed in consultation with external institutions such as CICA, EIC, FIDIC etc.

It is considered that the only potential area for controversy with regard to this approach is that it would effectively rule out the possibility of any tenderer intentionally submitting an ALT for a strategic reason, such as for the purposes of breaking into a new market. However,

in the MDBs' experience such instances are much more typical in the procurement of more simple goods and services contracts and are extremely rare for works contracts. It is therefore considered that whilst this issue may be raised during any subsequent consultation process, it is unlikely to present a major obstacle to the proposed approach.

Finally, the greater majority of the WG members consider that if the above approach is approved by the HOPs, the initiative should be introduced immediately and should not be subject to a pilot approach.

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10. STEPS UNDERTAKEN AS A CONSEQUENCE OF THE CONCLUSIONS

As stated in Section 9, the WG members unanimously agree that Option 4 provides the only feasible solution. However, as also stated in the earlier sections of this report, the introduction of this option requires the development of; a) a methodology to identify tenders which are potentially ALTs, b) the development of an ALT examination and clarification procedure, and, c) the development of an “ALT Evaluation Guidance Note”. In this regard, the WG has taken the following steps/actions:

a) Methodology to Identify Tenders which are potentially ALTs

The WG has developed an arithmetical formula for the purpose of identifying potential ALTs. Full details of the arithmetical formula, and the basis upon which it has been developed, can be located in Annex I of this report. In summary;

- The formula is based on the assumption that all tender prices have a ‘normal’ distribution (based on a number of ‘real-life’ tender exercises) and identifies potential ALTs using a ‘standard deviation’ approach;
- The arithmetical formula identifies tender prices which fall into what we call an ‘ALT risk-zone’ using a simple formula which any client can easily use (*i.e.* $AVERAGE(A1:AN)-STDEV(A1:AN)$ in MS Excel (or similar);
- There will be a mandatory requirement for an Employer to undertake a detailed analysis of any tender which falls into the “ALT risk-zone”, and which is subsequently recommended for contract award;
- The formula requires a minimum of 5 tenders to be meaningful; and,
- If there are 4 or fewer tenders, all tenders would be deemed to be in the “ALT risk-zone” and subject to the ‘absolute’ approach (see Section 7).

It should be noted that no tender shall be automatically rejected at this stage, the sole purpose of this step is to identify which tender or tenders, if any, are potentially ALTs and require further examination and clarification.

b) & c) ALT Examination and Clarification Procedure and ALT Guidance Note

The WG has developed a sample ALT examination and clarification procedure that can be applied to Employer designed works of an average complexity. In summary, the examination and clarification procedure:

- Is based on the concept that a tenderer must be able to demonstrate to an Employer its capability to implement a contract within its total tender price;
- Details the issues to be addressed and the steps that an Employer should follow in this regard;
 - Step 1 - Evaluation of the tenderer's estimate of resource inputs;
 - Step 2 - Statistical evaluation and comparison of unit rates;
 - Step 3 - Issues requiring further clarification; and
 - Step 4 - The Employer's recommendation
- Incorporates a sample form for requesting the detailed analysis/breakdown of unit rates.

In addition the WG has drafted an ALT Guidance Note which incorporates the above procedure. The draft ALT Guidance Note can be located in Annex 2 of this report.

II. RECOMMENDATIONS

Based on the preceding findings and analysis, the WG proposes the following recommendations:

1. The MDB approach to ALTs should generally be aligned with UNCITRAL, the WTO/GPA, & EU Directives and the MDBs shall introduce provisions into the Harmonised STD for Works that will ultimately permit the rejection of an ALT.
2. For the purposes of identifying an ALT, if there are more than 5 tenderers, Bank Clients shall be required to identify ALTs following a 'relative' approach. If there are 4 or fewer tenderers, the 'absolute' approach shall be used. The identification process shall be undertaken in accordance with the Guidance Note on the Treatment of Abnormally Low Tenders (ALTs) Under Works Contracts at the Tender Evaluation Stage (see Annex 2). **It must be emphasised that the above approach may only be used to identify any tenders that may potentially be ALTs, and which therefore require further investigation and clarification, and will not in any circumstances result in the automatic rejection of a tender(s) identified to be at risk.**
3. A tender identified as an ALT may only be rejected after the sufficiency of the tender price has been fully analysed and, if necessary, the tenderer has been provided with a reasonable opportunity or, if necessary opportunities, to clarify its capability to perform the contract within its total tendered price, and, has failed to do so **beyond reasonable doubt**. The ALT clarification and examination process shall be undertaken in accordance with the Guidance Note on the Treatment of Abnormally Low Tenders (ALTs) Under Works Contracts at the Tender Evaluation Stage (see Annex 2).
4. On the basis that any tender identified as being an unsubstantiated ALT will be rejected, Clients shall no longer have the right to request a tenderer to increase the amount of performance security (unless the tender price is unbalanced or front-loaded). This on the basis that:

- Retaining the right to increase the amount of performance security and accepting a tender proven to be an ALT, undermines the aim of the entire concept/approach (i.e. to eliminate ALTs);
- Once a tenderer has demonstrated its capability to implement a contract within its total tender price, why should it be penalised?
- The point at which an ALT should be accepted or rejected becomes highly subjective which defeats the object of this paper.

5. The ALT identification and clarification procedure must be undertaken in accordance with the ALT Guidance Note which will be published on each MDB's website; and,

6. The above recommendations shall apply to all works contracts procured under Open/ICB procedures.

12. Industry Consultation

At various stages of the WG's work, the WG's draft working paper and recommendations was circulated to the following institutions for comments and feedback:

- International Federation of Consulting Engineers (FIDIC);
- Confederation of International Contractors' Associations (CICA);
- Federación Interamericana de la Industria de la Construcción (FIIC);
- European International Contractors (EIC) Association;
- Organisation for Economic Co-operation and Development (OECD);
- The Council of Caribbean Engineering Organisations (CCEC);
- Chinese International Contractors Association;
- China Tendering and Bidding Association; and,
- The Builders Association of India (BAI)

The comments and feedback have generally been of a very positive nature. No major objections to any aspect of the WG's findings and/or recommendations, including the ALT arithmetical formula and ALT clarification and examination procedure, were received during the consultation process.

13. RISK AND CONSEQUENCES OF RECOMMENDATIONS

The WG acknowledges that the recommendations contained in this report will, if accepted, constitute a fundamental departure from the MDBs existing practices regarding the treatment of ALTs. This section of the report therefore highlights the risks and consequences associated with the recommendations:

- 1) If the WG recommendations are adopted as policy (and are not optional), MDB clients will have a mandatory requirement to identify and investigate ALTs and to reject an ALT (or ALTs) that cannot be substantiated.
- 2) This policy may result in an increased level of procurement related complaints from tenderers that have been rejected (and from tenderers that consider other tenders should have been rejected) which could be very complex and difficult to determine.
- 3) As many Bank clients may not have the necessary skills and expertise to undertake a detailed evaluation of an ALT, each Bank will need to consider how it will undertake its 'fiduciary oversight' in this regard before providing a no-objection to any proposal to reject an ALT.
- 4) Clients will no longer have a right to increase the level of performance security if a tender it proposes to accept is substantially below its cost estimate (unless the tender is front-loaded or unbalanced).
- 5) Tenderers will not be able to submit unsubstantiated low tender prices for the purposes of 'breaking into the market' (although 'subsidised' ALTs would have to be accepted).
- 6) MDB clients may need additional/enhanced consultancy support during the tender evaluation phase (for high value complex projects needs to be considered at project preparation stage).

14. NEXT STEPS

Following approval of the recommendations contained in Section 11 of this report by the Heads of Procurement (HOPs) the next steps are:

- Each MDB shall determine whether the proposed approach is consistent with its procurement rules or whether there is a need to introduce a corresponding amendment – est. Q2 - 2016
- Publication of updated STDs for Works (and a Bank specific ALT Guidance Note) on MDB websites which include provisions that will permit the rejection of ALTs – est. Q2/Q3 - 2016
- MDB Client Survey (for the purposes of obtaining clients feedback on the practical issues arising as a consequence of the new procedures – est. Q3/Q4 - 2017
- Following the above, review of ALT procedures and, if needed, update of ALT Guidance Note and STD provisions – est. Q4 – 2017/Q1 – 2018.

**ARITHMETICAL FORMULA FOR THE IDENTIFICATION
OF ABNORMALLY LOW TENDERS (ALTs)**

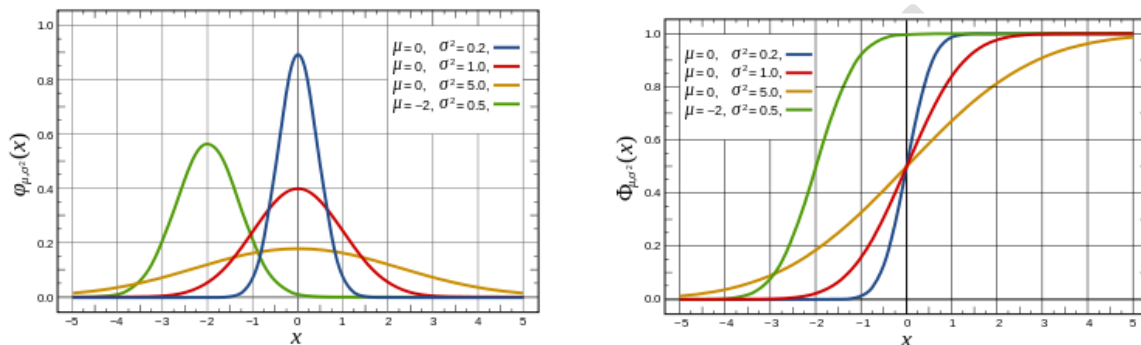
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1. Objective

The analysis was undertaken in order to identify a mathematical approach to identify tenders with a high risk of ALT, based on the tender prices quoted, with an aim to investigate such tenders further in line with the methodology proposed by EBRD.

2. Introduction

It has been observed that in cases when a large number of tenders were submitted, the distribution of tender prices may represent the normal (Gaussian) distribution, as described in probability theory.



As it is known, the normal distribution is a very common continuous probability distribution, which is often used in the natural and social sciences to represent real-valued random variables whose distributions are not known. In tendering the normal distribution is useful because of the central limit theorem. In its most general form it states that averages of random variables independently drawn from independent distributions are normally distributed. Should the assumption be confirmed the methods of statistical analysis of normal distribution and its theorems can be applied to develop an appropriate quantification method to identify a reasonable boundary for ALT.

3. Base line assumptions

- Tender prices have normal distribution

The probability density of the normal distribution is:

$$f(x, \mu, \sigma) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}},$$

where μ is the mean (expectation) of the distribution (and also its median and mode). The parameter σ is its standard deviation.

- It allows to determine the properties of the distribution (the mean, the standard deviation), given the data limitations.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i = \frac{1}{n} (x_1 + \dots + x_n). \text{ and } \sigma = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2}.$$

where x_i - i tender price ; n - number of tenders; \bar{x} - mean, σ - standard deviation.

- The limitations of the verification can be assumed based on the existing well known tests

- a) All tender prices are subject to the 3σ Rule (i.e. with the probability of 0.9973 all tender prices are located within $\pm 3\sigma$ interval)
 - b) The most commonly used tests of normality include the D'Agostino's K-squared test, the Shapiro–Wilk test and the Lilliefors test for normality (an adaptation of the Kolmogorov–Smirnov test). It shall be noted that the D'Agostino test requires 8 or more values, the Shapiro–Wilk test requires 7 or more values, the Kolmogorov–Smirnov test requires 5 or more values.
- Based on the assumption the whole array of data can be modelled, if needed;
 - A reasonable boundary for the ALT risk zone will be equal to the value equal to $\bar{x} - \sigma$.

4. Verification of the base line assumption on a real case (Case A)

Country: Serbia
 Project: Corridor X Highway Project
 Contract: Construction of Highway E 80, Pirot (East) – Sukovo
 Procurement method: Open international tender according to EBRD PP&R
 Year: July 2010
 Cost estimates: 2,938,140,000 RSD

Number of tenders: 16

Tender price distribution (in thou RSD)

1	2	3	4	5	6	7	8
1,145,142	1,330,191	1,342,106	1,378,232	1,462,176	1,476,269	1,486,226	1,579,100
9	10	11	12	13	14	15	16
1,613,371	1,657,703	1,856,166	1,900,885	1,912,355	2,099,006	2,149,893	2,242,001

As a result, we have

\bar{x} 1,664,426 and
 σ 315,975.

In order to verify if the quoted tender prices are distributed normally, we will check them vis-à-vis the 3σ Rule:

$\pm 3\sigma$ range is 716,503 to 2,612,350. As can be seen from the data all tender prices are located within the given range.

D'Agostino's K-squared test

In order to run the test we will adjust the array of data by \bar{x} to ensure that it becomes equal to 0 to simplify calculations vis-à-vis the basic assumptions of the test.

The formulas to be used to calculate statistics are as follows:

The mean: \bar{x} 0
 The standard deviation: σ 315,975,

which also represents the uncorrected sample standard deviation: S_n 315,975

After applying the Bessel's correction, the unbiased sample variation: S^2 106,495,887,734

Therefore, corrected sample standard deviation: S 326,337

The sample skewness: g_1 0.3349

The sample kurtosis: g_2 -1.0096

where, the sample skewness and kurtosis are defined as

$$g_1 = \frac{m_3}{m_2^{3/2}} = \frac{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^3}{\left(\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2\right)^{3/2}},$$

$$g_2 = \frac{m_4}{m_2^2} - 3 = \frac{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^4}{\left(\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2\right)^2} - 3.$$

These quantities consistently estimate the theoretical skewness and kurtosis of the distribution, respectively. Moreover, if the sample indeed comes from a normal population, then the exact finite sample distributions of the skewness and kurtosis can themselves be analyzed in terms of their means μ_1 , variances μ_2 , skewnesses γ_1 , and kurtoses γ_2 . This has been done by Pearson (1931), who derived the following expressions:

$$\mu_1(g_1) = 0,$$

$$\mu_2(g_1) = \frac{6(n-2)}{(n+1)(n+3)},$$

$$\gamma_1(g_1) \equiv \frac{\mu_3(g_1)}{\mu_2(g_1)^{3/2}} = 0,$$

$$\gamma_2(g_1) \equiv \frac{\mu_4(g_1)}{\mu_2(g_1)^2} - 3 = \frac{36(n-7)(n^2+2n-5)}{(n-2)(n+5)(n+7)(n+9)},$$

and

$$\mu_1(g_2) = -\frac{6}{n+1},$$

$$\mu_2(g_2) = \frac{24n(n-2)(n-3)}{(n+1)^2(n+3)(n+5)},$$

$$\gamma_1(g_2) \equiv \frac{\mu_3(g_2)}{\mu_2(g_2)^{3/2}} = \frac{6(n^2-5n+2)}{(n+7)(n+9)} \sqrt{\frac{6(n+3)(n+5)}{n(n-2)(n-3)}},$$

$$\gamma_2(g_2) \equiv \frac{\mu_4(g_2)}{\mu_2(g_2)^2} - 3 = \frac{36(15n^6 - 36n^5 - 628n^4 + 982n^3 + 5777n^2 - 6402n + 900)}{n(n-3)(n-2)(n+7)(n+9)(n+11)(n+13)}.$$

Therefore, for the given data we would have:

Therefore, corrected sample standard deviation: S 326,337

The sample skewness: g_1 0.3349

The sample kurtosis: g_2 -1.0096

where, the sample skewness and kurtosis are defined as

$$g_1 = \frac{m_3}{m_2^{3/2}} = \frac{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^3}{\left(\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2\right)^{3/2}},$$

$$g_2 = \frac{m_4}{m_2^2} - 3 = \frac{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^4}{\left(\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2\right)^2} - 3.$$

These quantities consistently estimate the theoretical skewness and kurtosis of the distribution, respectively. Moreover, if the sample indeed comes from a normal population, then the exact finite

$$\mu_1(g_1) = 0,$$

$$\mu_2(g_1) = \frac{6(n-2)}{(n+1)(n+3)},$$

sample distributions of the skewness and kurtosis can themselves be analyzed in terms of their means μ_1 , variances μ_2 , skewnesses γ_1 , and kurtoses γ_2 . This has been done by Pearson (1931), who derived the following expressions:

and

$$\begin{aligned} \mu_1(g_2) &= -\frac{6}{n+1}, \\ \mu_2(g_2) &= \frac{24n(n-2)(n-3)}{(n+1)^2(n+3)(n+5)}, \\ \gamma_1(g_2) &\equiv \frac{\mu_3(g_2)}{\mu_2(g_2)^{3/2}} = \frac{6(n^2-5n+2)}{(n+7)(n+9)} \sqrt{\frac{6(n+3)(n+5)}{n(n-2)(n-3)}}, \\ \gamma_2(g_2) &\equiv \frac{\mu_4(g_2)}{\mu_2(g_2)^2} - 3 = \frac{36(15n^6 - 36n^5 - 628n^4 + 982n^3 + 5777n^2 - 6402n + 900)}{n(n-3)(n-2)(n+7)(n+9)(n+11)(n+13)}. \end{aligned}$$

Therefore, for the given data we would have:

$M_1(g_1)$	0.0000
$M_2(g_1)$	0.2601
$\gamma_1(g_1)$	0.0000
$\gamma_2(g_1)$	0.5424
and	
$M_1(g_2)$	-0.3529
$M_2(g_2)$	1.5100
$\gamma_1(g_2)$	1.6841
$\gamma_2(g_2)$	-2.0184

It is known that the sample skewness g_1 and kurtosis g_2 are both asymptotically normal. However, the rate of their convergence to the distribution limit is frustratingly slow, especially for g_2 . In order to remedy this situation, it has been suggested to transform the quantities g_1 and g_2 in a way that makes their distribution as close to standard normal as possible. In particular, D'Agostino (1970) suggested the following transformation for sample skewness:

$$Z_1(g_1) = \delta \cdot \ln \left(\frac{g_1}{\alpha \sqrt{\mu_2}} + \sqrt{\frac{g_1^2}{\alpha^2 \mu_2} + 1} \right), \text{ where constants } \alpha \text{ and } \delta \text{ are computed as}$$

$$W^2 = \sqrt{2\gamma_2 + 4} - 1,$$

$$\delta = 1/\sqrt{\ln W},$$

$$\alpha^2 = 2/(W^2 - 1),$$

and where $\mu_2 = \mu_2(g_1)$ is the variance of g_1 , and $\gamma_2 = \gamma_2(g_1)$ is the kurtosis — the expressions given in the previous section.

Similarly, Anscombe and Glynn (1983) suggested a transformation for g_2 :

$$Z_2(g_2) = \frac{\sqrt{9A} \left\{ 1 - \frac{2}{A} \left(\frac{1 - 2/A}{\sqrt{\mu_2}} \right)^{1/3} \right\}}{\sqrt{2\gamma_2 + 4}}, \quad A = 6 + \frac{8}{\gamma_1} \left(\frac{2}{\gamma_1} + \sqrt{1 + 4/\gamma_1^2} \right),$$

where

and $\mu_1 = \mu_1(g_2)$, $\mu_2 = \mu_2(g_2)$, $\gamma_1 = \gamma_1(g_2)$ are the quantities computed by Pearson.

Hence we have for the given array of data:

W^2	1.2549
δ	2.9676
α^2	7.8447
A	19.0163

and as a result:

$Z_1(g_1)$	0.6896
$Z_2(g_2)$	-0.4402

Statistics Z_1 and Z_2 can be combined to produce an omnibus test, able to detect deviations from normality due to either skewness or kurtosis (D'Agostino, Belanger and D'Agostino 1990):

$$K^2 = Z_1(g_1)^2 + Z_2(g_2)^2$$

If the hypothesis of normality is true, then K^2 is approximately χ^2 -distributed with 2 degrees of freedom. In our case we have K^2 equal to 0.6693.

Hence, the tender prices can be seen as normally distributed.

Shapiro–Wilk test

As known, the Shapiro–Wilk test utilizes the hypothesis principle to check whether a sample came from a normally distributed population. The test statistic is:

$$W = \frac{\left(\sum_{i=1}^n a_i x_{(i)}\right)^2}{\sum_{i=1}^n (x_i - \bar{x})^2}$$

where the constants a_i are given by the authors, based on their calculations, as follows

$$(a_1, \dots, a_n) = \frac{m^T V^{-1}}{(m^T V^{-1} V^{-1} m)^{1/2}}, \text{ where } m = (m_1, \dots, m_n)^T$$

and m_i are the expected values of the order statistics of independent and identically distributed random variables sampled from the standard normal distribution, and V is the covariance matrix of those order statistics.

As we have even number of data (16), $m = n/2$ or 8 in our case.

1	2	3	4	5	6	7	8
0.5056	0.3290	0.2521	0.1939	0.1447	0.1005	0.0593	0.0196

The hypothesis may be rejected if W is below a predetermined threshold.

In our case W is equal to 0.9488.

For the given value of n (16), the Shapiro-Wilk Tables provides the following the p -value for the test:

0.01	0.02	0.05	0.1	0.5	0.9	0.95	0.98	0.99
0.844	0.863	0.887	0.906	0.952	0.976	0.981	0.985	0.987

In our case the p -value is between 0.472 and 0.473. As the p -value is greater than 0.05 (*alfa level*, providing for about one test in twenty to falsely reject the hypothesis of normality), our assumption of the normal distribution of the tender prices is confirmed.

Kolmogorov-Smirnov test

This test for normality is based on the maximum difference between the observed distribution and expected cumulative-normal distribution. Since it uses the sample mean and standard deviation to calculate the expected normal distribution, the Lilliefors' adjustment is used. The Lilliefors' adjusted critical values used are those given by Dallal (1986). However, this test has been shown to be less powerful than the other tests in most situations.

For ordered tender prices we can define $S_n(x)$ as follows:

$$S_n(x) = \begin{cases} 0, & x < x_1 \\ k/n, & x_k \leq x < x_{k+1} \\ 1, & x \geq x_n \end{cases} \quad \text{where } x_n \text{ will be the highest tender price.}$$

Assuming that the sample comes from an array with cumulative distribution function $F(x)$ we can define D_n as follows:

$$D_n = \max_x |F(x) - S_n(x)|$$

The Kolmogorov distribution has value

$$F(x) = \frac{\sqrt{2\pi}}{x} \sum_{k=1}^{\infty} e^{-(2k-1)^2\pi^2/(8x^2)}$$

It can be shown that D_n doesn't depend on $F(x)$. Since $S_n(x)$ depends on the sample chosen, D_n is a random variable. Our objective will be to use D_n as a way of estimating $F(x)$.

For our data we have the following calculations:

$S_n(X_i)$	Z-score	$F(X_i)$	Difference
0.0625	-1.6434	0.0501	0.0124
0.1250	-1.0578	0.1451	0.0201
0.1875	-1.0201	0.1538	0.0337
0.2500	-0.9058	0.1825	0.0675
0.3125	-0.6401	0.2611	0.0514
0.3750	-0.5955	0.2758	0.0992
0.4375	-0.5640	0.2864	0.1511
0.5000	-0.2700	0.3936	0.1064
0.5625	-0.1616	0.4358	0.1267
0.6250	-0.0213	0.4915	0.1335
0.6875	0.6068	0.7280	0.0405
0.7500	0.7483	0.7729	0.0229
0.8125	0.7846	0.7837	0.0288
0.8750	1.3754	0.9155	0.0405

0.9375	1.5364	0.9378	0.0003
1.0000	1.8279	0.9662	0.0338

To facilitate calculations Z-score is used

$$Z = \frac{X - \mu}{\sigma}$$

As D_n , α is the critical value from the table, then $P(D_n \leq D_{n,\alpha}) = 1 - \alpha$. D_n can be used to test the hypothesis that a random sample came from a population with a specific distribution function $F(x)$.

If $\max_x |F(x) - S_n(x)| \leq D_{n,\alpha}$, then the sample data is a good fit with $F(x)$.

The distribution of D_n can be obtained from the calculation table above, as the largest value of the differences. In our case D_n is 0.1511.

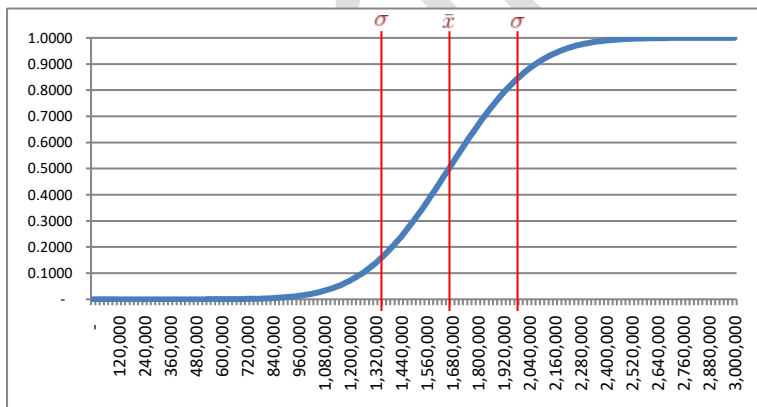
If the data is normally distributed then the critical value $D_{n,\alpha}$ will be larger than D_n . From the Kolmogorov-Smirnov Table we see that $D_{n,\alpha}$, in our case ($D_{16, 0.05}$), is equal to 0.328.

Since $D_n = 0.151$ is less than $D_{n,\alpha} = 0.328$, we can conclude that the data is a good fit with the normal distribution.

Now, justifiably assuming the normal distribution of the tender prices, the whole required array of data can be modelled, using the formula:

$$f(x, \mu, \sigma) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

For the given sample we will have the following graph illustrating the data range:



A reasonable (from mathematical perspective) boundary for the ALT risk zone will be equal to the mean minus the standard deviation (σ), since the latter represents a measure that is used to quantify the amount of variation (or dispersion) of a set of data values from the expected value of random variables. Therefore, mathematically the ALT risk level may be seen as the value equal to $\bar{x} - \sigma$. In our sample, the risk zone boundary is equal to 1,348,452 (thou RSD). Hence, all tenders with the quoted tender price below this level should be verified in respect of adequacy of their price. This adequacy shall be checked based on the reasonableness of the quoted price vis-à-vis the proposed project organisation and the work methods. In the given tender three lowest priced tenders should be seen as being exposed to the ALT risk. It shall be noted that the history of the contract in question, awarded to the lowest price tenderer, confirms that the ALT risk was real.

As can be seen from the analysis above common practices of using the cost estimates as a benchmark for ALT assessment does not seem to be in any way justified. In the given example the cost estimates were off the mark by large - beyond $+3\sigma$, which suggests that the figure cannot be even considered as a part of the data set in question.

Another practice by drawing the ALT risk zone threshold by an arithmetical margin, expressed as a pre-set percentage of the mean or the cost estimates, does not seem to be justified in any form, and does not represent anything, but an arbitrary set limit. Hence, use of such practice should also be avoided, given that such percentage margin will inevitably in some cases be well within $\bar{x} - \sigma$ range, whilst in other cases outside of it.

5. Conclusions

From the rational reasons the statistical results and observations discussed above can be explained as follows:

A normal distribution of the tender price can be supported by the fact that any tender price for works contract is a function of the materials, machinery and labour used as well as the overheads and profit.

With a given quality of the permanent works, the cost of materials would have minimal divergence between the tenderers, especially in cases of re-measurement contracts, implemented in accordance with the available design. Similarly, in a situation of competitive pricing (open tender) - the profit margins tend to vary little between different tenderers.

The overheads in their turn can be seen as consisting of two major parts, namely (a) contract terms related ones (will have a minimal divergence between the tenderers) and (b) tenderers' organisational, as well as project management arrangements on and off site. The latter, as well as the cost of machinery and labour, to a large extent depend on the program and construction methods adopted by a tenderer. Therefore, these components will vary between the tenderers and depend on development of the construction sector in the region as well as engineering and project management skills of tenderers.

In analysis of tender prices the designer's cost estimates shall not be considered on equal merit with market based tender prices, as the former is based on the designers' assumptions and their reactive empirical knowledge of the market prices, which is usually based on an averaged statistical data (published rates and indexes), covering large regions and broad spectrum of works. These publically available data often may be influenced by a highly inflated works prices obtained outside of an appropriate competitive selection of contractors (unlike an open international tender).

The above observations give us a reasonable ground for the following assumptions:

- should the tenderers adopt similar work methods the tender prices will deviate insubstantially;
- substantial price deviations may be a result of use of an unique work method. Therefore, in cases of the works to be designed by contractors or when alternative technical solutions are offered large price divergences between tenderers should be expected;
- for price analysis of tenders the prices designer's cost estimates shall not be considered on equal merit with market based tender prices;
- arbitrary set ALT margins should be avoided;
- substantial price deviations from the mean may not necessarily be ALT, but a result of reasonably justified price vis-à-vis the proposed organisation of the construction works, given the chosen work method;
- given that a limited number of tenders submitted on a regular tender, it may be impractical to use common statistical tests to verify the normality of distribution of the tender prices, due to (a) lack of data and (b) inability of some procuring authorities to apply tests correctly. However, from the discussions above, it can be concluded that the sufficient test to confirm normality may be either the Kolmogorov–Smirnov, which requires 5 tender prices as a minimum, or the Shapiro-Wilk test, requiring 7 tender prices. In this respect it shall be noted that some researchers believe that both the Shapiro-Wilk and the Kolmogorov-Smirnov tests are valid for samples as little as three;
- assuming that all work tender prices due to their nature are normally distributed, the reasonable boundary for the ALT risk zone can be considered be equal to the mean minus the standard deviation ($\bar{x} - \sigma$), where

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i \text{ and } \sigma = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2};$$

Hence, all tenders below this threshold shall be checked on ALT risk, should they be considered for a contract award;

- should the number of tenders be less than 5, all of them shall be considered to be in ALT risk zone. Hence, similarly to the above, any tender, which is considered for a contract award shall be verified on the ALT risk.

6. Verification of the above conclusions

In order to verify the conclusions three more sample projects were randomly chosen for the analysis.

Case B

Country: Bosnia and Herzegovina
 Project: Construction of Sarajevo Bypass
 Contract: Construction of Josanica-Butila (including Butila Interchange)
 Procurement method: Open international tender according to EBRD PP&R
 Year: May 2007
 Cost estimates: EUR 70,200,000

Number of tenders: 9

Tender price distribution (in EUR):

1 2 3 4 5

56,746,728	59,301,721	66,241,207	67,955,354	69,968,048
6	7	8	9	10
73,270,844	78,208,290	105,576,554	120,295,563	-

Analysis of the tender prices by Kolmogorov-Smirnov test gives us the following result:

D_n is 0.2639. From the Kolmogorov-Smirnov Table we see that $D_{n,\alpha}$, in our case ($D_{9, 0.05}$), is equal to 0.432. Since $D_n = 0.264$ is less than $D_{n,\alpha} = 0.432$, we can conclude that the data have normal distribution.

Based on the data, we have

\bar{x} - 77,507,145 and σ - 20,206,178.

Hence, the ALT risk threshold will be equal to EUR 57,300,967. That leads to the conclusion that only the lowest priced tender needs to be assessed in respect of the ALT risk.

The history of the contract in question, awarded to the lowest price tenderer, confirms that the ALT risk was real.

Case C

Country: Bosnia and Herzegovina
 Project: Design and Construction of Banja Luka - Dobož Motorwa
 Contract: Design and Construction of Section Prnjavor - Dobož
 Procurement method: Open international tender according to EBRD PP&R (two stage process)
 Year: July 2012
 Cost estimates: EUR 145,000,000

Number of tenders: 6

Tender price distribution (in EUR)

1	2	3	4	5	6
180,000,000	183,647,401	194,832,000	199,860,000	229,587,000	272,812,638

Analysis of the tender prices by Kolmogorov-Smirnov test gives us the following result:

D_n is 0.2914. From the Kolmogorov-Smirnov Table we see that $D_{n,\alpha}$, in our case ($D_{6, 0.05}$), is equal to 0.521. Since $D_n = 0.291$ is less than $D_{n,\alpha} = 0.521$, we can conclude that the data have normal distribution.

Based on the data, we have

\bar{x} - 210,123,173 and σ - 32,291,212.

Hence, the ALT risk threshold will be equal to EUR 177,831,961. It can be seen that none of the tenders seems to be in the ALT risk zone. The progress of works under the contract, awarded to the lowest price tenderer, supports the assessment of that the ALT risk as negligible.

The fact that all tender prices were outside of the ALT risk zone in this particular case may be explained by two reasons (a) two stage tendering approach allowed the tenderers in a dialogue with the employer to understand better the employer's requirements and the conditions on and around the

construction site; and (b) design and build contracting approach allowing tenderers to use appropriate work arrangements and optimize their cost.

This example once again illustrates the irrelevance of using the cost estimates in the assessment of the tender prices.

Case D

Country: Montenegro
 Project: Lastva - Pljevlja Transmission Project
 Contract: Lot 3: 400 kV OHL Lastva - Pljevlja (Section Cevo - Pljevlja) and associated 110 kV OHL diversions
 Procurement method: Open international tender according to EBRD PP&R
 Year: July 2014
 Cost estimates: EUR 45,300,000

Number of tenders: 11

Tender price distribution (in EUR)

1	2	3	4	5	6
29,422,125	29,835,804	31,999,742	33,062,913	34,022,679	34,559,208
7	8	9	10	11	12
35,865,527	37,849,898	37,982,500	39,899,196	42,598,449	-

Analysis of the tender prices by Kolmogorov-Smirnov test gives us the following result: D_n is 0.2152. From the Kolmogorov-Smirnov Table we see that $D_{n,\alpha}$, in our case ($D_{11, 0.05}$), is equal to 0.521. Since $D_n = 0.215$ is less than $D_{n,\alpha} = 0.521$, we can conclude that the data have normal distribution.

Based on the data, we have \bar{x} - 35,190,731 and σ - 4,976,934.

Hence, the ALT risk threshold will be equal to EUR 30,213,797. It can be seen that two lowest priced tenders appear to be in the ALT risk zone. The contract was awarded to the lowest price tenderer. The initial progress of works under the contract demonstrates some issues with the contractor's cash flow. Although, it may not be affecting the project progress, but suggests that the in depth ALT risk assessment should have been undertaken.

This is another example illustrating the irrelevance of using the cost estimates in the assessment of the tender prices.

7. Final conclusions

The verifications confirmed the key conclusions made before, i.e.:

- for price analysis of tenders the prices designer's cost estimates shall not be considered on equal merit with market based tender prices;
- arbitrary set ALT margins should be avoided;

- substantial price deviations from the mean may not necessarily be ALT, but a result of reasonably justified price vis-à-vis the proposed organisation of the construction works, given the chosen work method;
- assuming that all work tender prices due to their nature are normally distributed, the reasonable boundary for the ALT risk zone can be considered be equal to the mean minus the standard deviation ($\bar{x} - \sigma$), where

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i \text{ and } \sigma = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2};$$

Hence, all tenders below this threshold shall be checked on ALT risk, should they be considered for a contract award.

In practical terms the calculations may be done by using MS Excel, or similar applications, by entering the array of data (say A1...AN), the mean can be calculated by using the following function *AVERAGE(A1:AN)*, and the standard deviation – by using the formula *STDEV(A1:AN)* thus the formula for calculation of the ALT risk zone threshold is:

AVERAGE(A1:AN)-STDEV(A1:AN).

- should the number of tenders be less than 5, all of them shall be considered to be in ALT risk zone. Hence, similarly to the above, any tender, which is considered for a contract award shall be verified on the ALT risk.

**DRAFT GUIDANCE NOTE ON THE TREATMENT
OF ABNORMALLY LOW TENDERS (ALTs) UNDER
WORKS CONTRACTS AT THE TENDER
EVALUATION STAGE**

Final Report

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Appendix I Relative Approach for the Purposes of Identification of an ALT

1. Introduction

In _____ 2016, the Multilateral Development Banks' (hereafter referred to as "MDBs" or "Banks") introduced provisions into the Standard Tender Document for Works (STDfW) which permit the rejection of Abnormally Low Tenders ("ALTs"). The Banks' recognise that the grounds upon which an ALT may be rejected can be highly contentious and controversial. As such, any subsequent decision to reject a tender on this basis must be supported by robust documentary evidence and able to withstand scrutiny. To assist clients in this regard, the Banks' have produced this 'Guidance Note' with the intention of clarifying the process Bank clients will be expected to follow during tender evaluation prior to making a decision to accept or reject an ALT.

2. Definition of an ALT

It is generally accepted that it is very difficult, if not impossible, to provide a definition of an ALT that captures all possible scenarios. For the purposes of this 'Guidance Note' as a general rule, the Banks' consider an ALT to be a tender where the tender price, in combination with other constituent elements of the submission, appears to be abnormally low in relation to the subject matter of the contract to the extent that the tender price raises material concerns with the procuring entity as to the capability of the tenderer to perform the contract for the offered tender price.

3. Identification of an ALT

In view of the general difficulty in establishing a common definition of an ALT, the first essential step in the tender evaluation process is to identify if the qualified and responsive tender offering the lowest evaluated price may be an ALT and therefore requires further in-depth review and clarification. Typically there are two approaches that may be followed in this regard, the 'absolute' approach and the 'relative' approach. The 'absolute' approach generally entails the identification of an ALT based on a comparison of a tender price, and its constituent parts, with the client's own cost estimate for the works, whilst the 'relative' approach permits the identification of an ALT based on a comparison of a tender price with the average tender price submitted by other tenderers. Whilst the 'absolute' approach can theoretically be applied in any given situation (on the assumption that a reliable cost estimate exists), the 'relative' approach can only be considered reliable in a situation where a reasonable number of tenders have been submitted.

As a general rule, in situations where fewer than five (5) tenders have been submitted, the Banks' advocate the use of the 'absolute' approach as a basis to identify ALTs. In situations where five (5) or more tenders have been submitted, the Banks' advocate the use of the 'relative' approach. In this regard, the Banks' have developed a mathematical formula, for the purposes of attempting to identify tenders which fall into the ALT 'risk zone', which shall be used when the 'relative' approach is to be applied.

The formula may be used in MS Excel, or similar applications, by entering the array of data (say $A1 \dots AN$), the mean can be calculated by using the following function $AVERAGE(A1:AN)$, and the standard deviation by using the formula $STDEV(A1:AN)$. Thus the formula for calculation of the ALT risk zone threshold is: $AVERAGE(A1:AN)-STDEV(A1:AN)$.

Following the 'relative approach', any tender that falls into the ALT risk zone (and is therefore potentially an ALT), and which is subsequently proposed for contract award, must be subjected to the ALT Evaluation and Clarification Process elaborated in Section 4 of this Guidance Note prior to the submission of the contract award recommendation to the Bank. In the event that fewer than 5 (five) tenders are submitted all tenders shall be considered to be in the ALT risk zone and the tender which is subsequently proposed for contract award must also be subjected to the ALT Evaluation and Clarification Process.

In the event that an ALT has been identified in the tender evaluation process, the tender evaluation report shall contain full details of the 'absolute' or 'relative' basis upon which an ALT (or ALTs) has or have been identified.

Notwithstanding whether an 'absolute' or 'relative' approach is applied to identify a potential ALT, clients shall be aware that the Banks' will not, under any circumstances whatsoever, accept or agree to the automatic rejection of tender suspected to be an ALT in a situation where no attempt to clarify the basis for the suspected ALT has been made by the client). Equally, no tenderer shall be permitted by a client to withdraw its tender (without the forfeiture of its tender security), during the tender validity period, purely on the basis of its own determination that its tender is an ALT, for example, based on a comparison of its own tender price with the read-out prices of the other tenderers.

4. ALT Evaluation and Clarification Process

Following a determination by a client that a tenderer has submitted a tender that is potentially an ALT, in the event that a client subsequently proposes to recommend award of contract to that tenderer, the client has a mandatory requirement to establish the capability of the tenderer to perform the contract within its total tender price, before submitting the tender evaluation report to the Bank for no-objection (for contracts subject to prior review), or, finalising the tender evaluation process and awarding the contract (for contracts subject to post review).

The process of establishing whether a tenderer is capable to perform a contract within its total tender price can be highly complex and subjective, particularly for Design and Build type contracts, and in instances where Bank clients do not have the necessary in-house capability and expertise, clients may require the input of independent consultants with substantial knowledge and experience in the relevant sector.

The following provides details of a sample procedure that could be applied to works contracts of an average complexity, and particularly where a detailed design and Bill of Quantity (B/Q) exists. For more complex works contracts, for example those requiring a substantial level of innovation from tenderers, a more appropriate procedure may need to be developed with the support and assistance of suitably qualified consultants (if applicable, due consideration to this aspect should be considered during the project planning stage to ensure that the 'Terms of Reference' for any implementation consultant(s) includes an appropriate provision at the outset of the project).

The determination as to whether an ALT shall be rejected shall be made in accordance with 'Instructions to Tenderers' (ITT) 31.2 of the STDfW which states "*If in the opinion of the Employer the Tender which results in the lowest Evaluated Tender Price, is seriously unbalanced or front loaded or determined to be abnormally low, the Employer may require the tenderer to produce detailed price analyses for any or all items of the Bill of Quantities, and supplementary evidence, to demonstrate the internal consistency of those prices with the methods and schedule proposed. After evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, in the event that the Employer considers that the Tender is seriously unbalanced or front loaded, the Employer may require that the amount of the performance security be increased at the expense of the tenderer to a level sufficient to protect the Employer against financial loss in the event*

of default of the successful tenderer under the Contract. In the event that the Tenderer fails to demonstrate its capability to deliver the contract for the offered tender price, the Employer shall reject the Tender.”

Requests to tenderers to produce and submit “detailed price analyses” shall be carried out in accordance with the procedure contained in ITT 27 – Clarification of Tenders of the STDfW. Clients shall ensure that tenderers are provided with a reasonable period within which to provide any requested clarifications and/or detailed price analyses. Under normal circumstances, and depending on the volume/complexity of information to be provided by a tenderer, a period of 5 - 10 business days shall be considered to generally constitute a reasonable period.

This price analysis would normally comprise of the following basic cost components: *Tender Price = Cost of Works (materials and labour) + Overhead Expenses + Contingency + Profit.* Therefore, the Employer’s evaluation of the capability of a tenderer to perform the contract within its total tender price shall focus on the price analysis of any or all the items of the works to be performed by the tenderer and their internal consistency with the tenderer’s estimate of the resource inputs required for the performance of the works and/or associated pricing by the tenderer.

The evaluation process shall commence with a preliminary evaluation of the tender price. The purpose of this preliminary evaluation is to identify any particular parts of the works which may have been grossly underestimated by the tenderer and which would therefore merit further detailed evaluation of the tenderer’s estimate of resource inputs and associated pricing incorporated in the tenderer’s total tender price. This preliminary examination should look to identify issues such as;

- Has the tenderer omitted to price some items and does this appear to have been intentional or accidental?
- Are some items priced significantly lower than estimated? And if so, is this an arithmetical error or a misplacement of a decimal point or has the tenderer misunderstood what is to be included in the rate?
- Are certain items/types of items consistently under-priced across the B/Q (e.g. cost per metre of laying pipes in a trench) and are there any indications why this may be the case?

Following this preliminary evaluation the following steps shall be undertaken:

Step I

- **Evaluation of the Tenderer's Estimate of Resource Inputs associated with Performance of the Works.** Contractors may perform identical works using differing volumes, sequencing, timing and combination of resource inputs, such as construction equipment, staff and labour, materials. A tenderer's estimate of such resource inputs, which would be required for the performance of the works, shall be the first step in the evaluation of the tenderer's capability to perform the contract. All tenderers should have estimated the volume of the resource inputs required for the performance of the works on the basis of the construction methods, sequence and timing of the various construction activities, sources of materials etc, i.e. on the basis of the tenderer's preliminary work programme. Accordingly, the Employer shall first examine the preliminary work programme submitted by the lowest price tenderer and determine if it is in fact realistic, taking into account the specific circumstances of the project site.

For example, a tenderer may choose topsoil removal works to be executed using self-propelled scrapers. If successful, the tenderer should be able to execute several construction activities using the selected equipment and construction method and ultimately perform the works faster, with less support equipment, fewer operators and lower operating costs as compared to other construction methods. Consequently, the selected construction method should have direct impact on the prospective cost of the works to the tenderer and ultimately its tender price. However, should the tenderer misjudge the specific circumstances of the project location e.g. availability of the equipment, transportation distances to the designated dumping sites, concentration of rocks in the topsoil, etc, the tenderer may not be capable of following the selected construction method and, if awarded the contract, will suffer substantial cost overruns during the execution of the works on account of having to: a) modify or substitute the selected construction method; and b) cover the cost of additional support or new equipment, operating costs, etc. Moreover, if the Employer were to accept the tenderer's tender price, having full knowledge that it is based on a flawed preliminary work programme, then the possibility arises that, following contract award

to the tenderer, any inability to execute the works in accordance with such a programme could give rise to a claim or variation by the tenderer.

In view of the above, if the Employer determines that the preliminary work programme submitted by the lowest price tenderer for any part or all of the works is not realistic, the Employer shall evaluate whether the tenderer will be capable to modify or substitute the proposed construction methods therein within the tenderer's total tender price whilst remaining consistent with the mandatory requirements of the contract. It should be noted that such evaluation can be carried out by the Employer without violation of the Banks' procurement rules (i.e. "Tenderers shall not be allowed or asked change their tender..... during evaluation or as a condition of award) only if the preliminary work programme accompanies, but does not form a part of, the tenderer's tender. (Note: This provision is also consistent with the FIDIC recommended Example Form of Instruction to Tenderers, according to which, "the tenderer shall also submit the following supplementary information accompanying, but not forming part of, his Tender:" — "(d) details of the arrangements and methods which the tenderer proposes to adopt for the execution of the Works").

Step 2

- **Statistical Evaluation.** All tenderers will have individually determined the prospective cost of the works prior to the submission of their tenders. Therefore, providing that the preliminary work programmes adopted by the tenderers are comparable (see above paragraph), the average subtotal of rates (subtotals) quoted by the tenderers for various parts of the works should be representative of the actual cost of the works and constitute a sound benchmark for the preliminary assessment of the sufficiency of subtotals quoted by the lowest price tenderer for the respective parts of the works.
- **Line Chart of Subtotals Quoted for Various Parts of Works by other Tenderers.** With the exception of subtotals quoted by the lowest price tenderer, the Employer shall first enter all subtotals quoted by other tenderers for various parts of the works into a combined line chart. The Employer's estimated subtotals for the respective parts of the works should also be inserted into the line chart.

The Employer shall compare all subtotals for each part of the works in the line chart and note the nature of any inconsistencies with the view to:

- (a) identify any evidence of frontloading; and
- (b) determine the average representative subtotal of rates for each part of the works (average subtotals).

All line charts should normally be balanced providing that the preliminary work programmes adopted by the respective tenderers are comparable. A substantially unbalanced subtotal should generally constitute evidence of frontloading by a tenderer or incidence of a gross error in the tenderer's estimate of the actual cost of the respective part of the works. For comparison purposes, such individual subtotals should be adjusted within the total price quoted by the respective tenderer or, as the case may be, the Employer's estimate for the entire works, in proportion with the average subtotals for the respective parts of the works quoted by other tenderers and the Employer's estimates.

- **Comparison of Subtotals Quoted by Lowest Price Tenderer with those Quoted by other Tenderers.** Once the Employer has determined the average representative subtotals for each part of the works (average subtotals), these shall be compared with the respective subtotals quoted by the lowest price tenderer.

In the event that all the subtotals quoted by the lowest price tenderer transpire to be consistently below the average subtotals, such a price ranking may constitute evidence that the lowest price tenderer has grossly underestimated its overhead expenses and/or chose to incorporate an exceptionally low profit margin and contingencies in its rates. In such instances, the Employer's further evaluation should concentrate on the breakdown of the tenderer's overhead expenses and clarification of the basis for determining its profit margin and contingencies.

In the event that of any exceptional shortfall between the average subtotal and the subtotal quoted by the lowest price tenderer for any individual part of the works, the Employer's further evaluation should concentrate on the detailed price analyses and assessment of its internal consistency with the estimate of resource inputs and pricing of the respective individual part of the works.

- **Preliminary Clarification and Request for Tenderers' Detailed Price Analyses for the Works.** Following the preliminary evaluation, if the Employer considers that further clarification from the tenderer is required, the Employer may request the tenderer to produce detailed price analyses for any part of the works in accordance with ITT 31.2 of the STDfW.
- **Content of the Employer's Clarification Request for Price Analyses.** The Employer's clarification request for price analyses shall focus on the issues that will have been identified during the preliminary evaluation and clarify the basis on which the Employer determined that the tenderer's pricing of the works may be abnormally low. The contents of the Employer's clarification request shall ensure that the tenderer will be in a position to provide an equally focused response to the Employer. In order to expedite the tender evaluation, the Employer shall also provide the tenderer with the format in which the tenderer will be expected to submit its price analysis. In this regard, a sample 'Form for Detailed Analysis of Unit Rates' that may be used for this purpose, if appropriate, is attached at Appendix I.
- **Clarification of the Tenderer's Overhead Expenses and Contingency.** It should be noted that the basis upon which a tenderer may factor overhead expenses into its tender prices can be substantially different from that used by other tenderers. The respective value of the individual overhead expenses may therefore fluctuate within considerable margins. This can be evidenced with reference to the outcome of tendering exercises held on a "slice and package" basis, which show that tenderers' discounts for the award of more than one contract can range between 0-30% of the tender price. Hence, the margin of overhead expenses may vary substantially and can be manipulated by any tenderer after the date of tender submission taking into account the ranking of its tender price vis-à-vis other tenderers. The Employer should therefore require that all tenderers shall provide detailed information pertaining to their overhead expenses as part of the tender submission. The same position should be taken with regard to contingencies for the same reason.

Step 3

- Detailed Clarification and Request for further Tenderer's Price Analyses for the Works.** Following the receipt of the tenderer's detailed price analyses, the Employer shall determine if the tenderer's estimates of the resource inputs and the pricing of the works provided therein are consistent with the Employer's respective assumptions. If the Employer determines a potential shortfall in any of the items of the tenderer's price analyses the Employer shall request further clarification from the tenderer which may include appropriate documentary evidence that would validate the tenderer's price analyses. The Employer's clarification request shall focus on the issues that will have been identified during the detailed evaluation of the tenderer's initial price analyses and clarify the basis on which the Employer determined that the tenderer's assessment of the works may be abnormally low. The Employer should also convey to the tenderer that any attempt of misrepresentation by the tenderer within the framework of the tender evaluation shall fall within the definition of the prohibited practices and will be subject to the Banks' respective Enforcement Policy and Procedures.
- Clarification of the Tenderer's Estimate of Resource Inputs.** If the Employer determines that the tenderer's estimate of a resource input associated with particular part of the works may not be realistic or is substantially below the Employer's respective assumption, the Employer shall request the tenderer to clarify to the Employer's satisfaction the basis on which the tenderer has:

 - estimated the respective resource input; or;
 - determined that the underlying work programme arrangements can be modified or substituted within its total tender price;

The tenderer's clarification may include its estimate of labour requirements; sources and volume of materials, construction plant and equipment, transportation distances, etc required for the performance of the part of the works for which the Employer requires clarification.

- Clarification of the Tenderer's Estimate of Pricing.** If the Employer determines that the tenderer's estimate of the cost of a resource input may not be realistic or is

substantially below the Employer's respective assumption, the Employer shall request the tenderer to submit appropriate evidence that would substantiate its pricing of the respective resource input including, as may be necessary, further detailed price analyses in respect of the resource input questioned by the Employer.

The tenderer's clarification may also include a description of the nature of the tenderer's access to the proposed construction equipment e.g. hire, lease, purchase agreement, etc and any documentary evidence that the tenderer utilised for determining its tender price during the tendering period.

- **Report of Evaluation of Tenderer's Detailed Price Analyses and Employer's Recommendation.** At the end of the detailed evaluation of the tenderer's price analyses the Employer shall produce a concise report that shall form an annex to the Tender Evaluation Report (TER) and that shall include the following summary information:
 - The value of the tenderer's estimates of the resource items and respective pricing which the Employer determined to be unrealistic or substantially below the level required for satisfactory performance of the works;
 - The value of the Employer's estimates and assumptions in relation to the resource items and respective pricing required for satisfactory performance of other works;
 - The value of the shortfall identified in the tenderer's tender; and
 - The recommended outcome of the 'Detailed Evaluation of the Tenderer's Price Analyses'.

The report shall also include details of any objection that the tenderer may have highlighted with regard to the Employer's estimates and assumptions in relation to the resource items and their respective pricing and appropriate justification of the grounds on which the Employer has rejected the tenderer's objections. The Employer's recommendation shall be included in the report.

Step 4

- **Employer's Recommendation.** Following evaluation of the tenderer's price analyses and detailed clarification thereof, the client shall:

- (a) In the event that it is established that the tender price is unbalanced or front loaded, require that the amount of the performance security be increased at the expense of the tenderer in accordance with ITT 31.2; or,
- (b) In the event that it is established that the tenderer is unable to demonstrate, beyond reasonable doubt, its capability to perform the contract within its total tender price, reject the tender submitted by the lowest evaluated substantially responsive tenderer in accordance with ITT 31.2.

If applicable, the tender evaluation report shall also include details of any objection that the tenderer may have highlighted during the clarification exchange process and the basis upon which the Employer has rejected the tenderer's objections.

In addition, the tender evaluation report shall incorporate copies of all clarification exchanges between the client and the tenderer.

Clients should be aware that, as a part of the Banks' fiduciary oversight, for complex/high value cases it may be necessary for the financing Bank to seek an independent opinion with regard to the basis and logic behind any decision to reject an ALT prior to the Bank being in a position to issue the Bank's no-objection to the proposed contract award.

APPENDIX I

Sample Form for Detailed Analysis of Unit Rates

Final Report

Item No.	Description	Unit	Production	Direct Cost								Total
				Position (4)	Quantity / hour	Unit rate						
(0)	(1)	(2)	(3)									
											Sub total 1	
				Materials								
				Type	Quantity / hour	Unit rate						
											Sub total 2	
				Equipment								
				Type	Quantity / hour	Unit rate						
											Sub total 3	
				Total Direct Cost = Sub-total 1 + Sub-total 2 + Sub-total 3								
				Site Overheads								
				Give precise description of each category of site overhead in column (4) below								
				(4)								
											Enter K ₂ multiplying factor of direct costs	
				Expatriate staff							K ₂ =	
				Equipment							K ₂ =	
				Others							K ₂ =	
				Total site overhead cost								
				Headquarters Overheads								
				Give precise description of each category of headquarters overhead in column (4) below								
				(4)								
											Enter K ₃ multiplying factor of direct costs	
				Headquarters							K ₃ =	
				Insurances							K ₃ =	
				Other financial costs							K ₃ =	
				Profit							K ₃ =	
				Total Headquarters Overhead cost								
				Total Unit Rate								