# TOTAL OWNING COST (TOC) EVALUATION

## Distribution Transformers

### 1. Purpose and Application

This clause shall apply to the financial evaluation of bids for distribution transformers. HESCO shall evaluate financial bids on the basis of Total Owning Cost (TOC), which reflects both the quoted purchase price and the economic value of the bidder's guaranteed transformer losses.

The Total Evaluated TOC shall be used only for financial evaluation, comparison, ranking, and determination of the Most Advantageous Bidder. It shall not replace the contractual quoted price payable under the contract.

The lowest bidder shall be determined by using the Total Owning Cost (TOC). If a Firm has the lowest quoted unit price (lowest Schedule Price) but does not retain the lowest position after calculation of the Total Owning Cost (TOC), it shall not be considered the lowest / Most advantageous bidder.

### 2. Fixed Loss Capitalization Factors

For this tender, the following fixed capitalization factors shall be used. These factors are fixed by HESCO for evaluation purposes and shall not be changed, qualified, or replaced by any bidder.

| Symbol | Description | Unit | Value |
|---|---|---|---|
| **K1** | Iron loss / no-load loss capitalization factor | PKR per Watt | 299.948 |
| **K2** | Copper loss / load loss capitalization factor | PKR per Watt | 145.299 |

### 3. Definitions of Bidder Inputs

| Symbol | Input Required from Bidder | Basis |
|---|---|---|
| **Q** | Quoted unit price of the transformer, excluding GST | PKR, FCS basis, per unit |
| **I** | Guaranteed iron losses / no-load losses | Watts |
| **C** | Guaranteed copper losses / load losses | Watts |
| **Qty.** | Quantity of the item offered | Number of units |

### 4. TOC Formula

The bidder shall calculate the Unit TOC for each item as follows:

**Unit TOC = Q + (299.948 x I) + (145.299 x C)**

The Total Evaluated TOC shall then be calculated as follows:

**Total Evaluated TOC = Quantity x Unit TOC**

The TOC amount shall be calculated excluding GST. GST shall be shown separately on the quoted amount wherever required in the price schedule.

## 5. Required Price Schedule Information

For each offered item, the bidder shall provide the quoted unit price excluding GST, guaranteed losses, applicable GST information, and calculated TOC values in the prescribed price schedule. Q, I, and C shall not be left blank and shall be numeric, unconditional, and consistent with the technical offer.

## 6. Price Schedule Format

The following format shall be used for item-wise TOC calculation and evaluation.

| Sr. | Description of Goods | Qty. | Quoted Unit Price Excl. GST, Q (PKR, FCS Basis) | Guaranteed Iron Losses, I (W) | Guaranteed Copper Losses, C (W) | K1 (PKR/W) | K2 (PKR/W) | Unit TOC = Q + (K1 x I) + (K2 x C) | Total Evaluated TOC = Qty. x Unit TOC | GST on Quoted Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [Transformer rating and description] | [Qty.] | [Q] | [I] | [C] | 299.948 | 145.299 | [Calculated Unit TOC] | [Calculated Total Evaluated TOC] | [GST % / amount] |

## 7. Worked Example

Assume the following quoted and guaranteed values for a 25 kVA, 11/0.4 kV transformer:

| Description | Value |
|---|---|
| Quoted Unit Price excluding GST, Q | PKR 250,000 |
| Quantity | 90 units |
| Guaranteed Iron Losses / No-Load Losses, I | 140 W |
| Guaranteed Copper Losses / Load Losses, C | 936 W |
| **Step 1: Unit TOC** | 250,000 + (299.948 x 140) + (145.299 x 936) |
| **Step 2: Unit TOC** | 250,000 + 41,992.72 + 135,999.864 = PKR 427,992.584 |
| **Step 3: Total Evaluated TOC** | 90 x 427,992.584 |
| **Total Evaluated TOC Price** | **PKR 38,519,332.56** |

## Filling of Form for Calculation of TOC

| Sr. | Description of Goods | Qty. | Quoted Unit Price Excl. GST, Q (PKR, FCS Basis) | Guaranteed Iron Losses, I (W) | Guaranteed Copper Losses, C (W) | K1 (PKR/W) | K2 (PKR/W) | Unit TOC = Q + (K1 x I) + (K2 x C) | Total Evaluated TOC = Qty. x Unit TOC | GST on Quoted Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 kVA, 11/0.4 kV Transformer | 90 | 250,000 | 140 | 936 | 299.948 | 145.299 | 427,992.584 | 38,519,332.56 | 18% |

## 8. Evaluation and Basis of Award

i. The financial comparison shall be made on the basis of the Total Evaluated TOC and not merely on the quoted unit price.
ii. The bidder with the lowest Total Evaluated TOC, after being determined eligible, technically compliant, commercially compliant, and substantially responsive, shall be considered for award as the Most Advantageous Bidder, subject to approval of the competent authority and completion of all procurement formalities.
iii. No evaluation criterion, multiplier, capitalization factor, financial loading, or comparison basis other than those expressly stated in the bidding document shall be used for TOC-based financial evaluation.
iv. The TOC is for evaluation and ranking only. Contractual payment shall be made on the basis of the accepted quoted unit price, plus applicable taxes, duties, and other payable amounts in accordance with the contract.

## 9. Guaranteed Losses, Testing, and Supporting Documents

i. The guaranteed iron losses and copper losses quoted by the bidder shall be firm, binding, and shall form part of the accepted bid and contract documents.
ii. The bidder shall quote one firm set of guaranteed loss values for each offered item. Alternative values, conditional values, or ranges of loss values shall not be accepted for evaluation.
iii. The bidder shall submit documentary proof of the guaranteed iron losses and guaranteed copper losses with the bid, including manufacturer's guaranteed technical data, loss values, test certificates, and other documents required under the technical specification.
iv. The quoted losses shall be subject to verification during inspection, routine testing, type testing, acceptance testing, or any other testing specified in the technical specification, inspection plan, applicable standard, or contract.
v. If tested losses exceed the guaranteed losses or the maximum permissible losses specified in the bidding document or applicable technical standard, HESCO may apply the remedies stated in the technical specification and contract, including rejection, replacement, rectification, penalty, price adjustment, or any other contractual remedy, as applicable.

## 10. Grounds for Non-Responsiveness

A bid may be treated as non-responsive if any of the following occurs:

i. Q, I, or C is missing, conditional, ambiguous, non-numeric, unverifiable, or inconsistent with the technical bid.
ii. The bidder changes, qualifies, or refuses to apply K1, K2, the TOC formula, the basis of comparison, or the prescribed price schedule format.
iii. The bidder fails to submit documentary proof of guaranteed losses with the bid.
iv. The offered transformer does not comply with the applicable technical specification, prescribed loss limits, testing requirements, or guaranteed technical data requirements.

PRICE SCHEDULE FORM

| LOT | Description of Goods | Qty. Nos. | Quoted Unit Price Excl. GST (Q) (PKR, FCS Basis) | Guaranteed Iron Losses (I) W | Guaranteed Copper Losses (C) W | K1 PKR/W | K2 PKR/W | Unit TOC = Q+(K1xI)+(K2xC) | Total Evaluated TOC = Qty x Unit TOC (Col: 9 x 3) | GST Amount on Quoted Price |
|---|---|---|---|---|---|---|---|---|---|---|
| I | **200 KVA Distribution Transformer** | 358 | | | | 299.948 | 145.299 | | | |
| II | **200 KVA Distribution Transformer** | 357 | | | | 299.948 | 145.299 | | | |

***Name*** ________________________________________
***In the Capacity of*** ________________________________________

***Signature of Bidder*** ________________________________________

***Duly authorized to sign the Bid for and on behalf of Dated on*** ________________________________________

***Stamp & Signature of Bidder*** ________________________________________