

Study on Bidding Evaluation Method and Bidding Strategy of Construction Project

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Abstract. Construction project bidding involving many factors have attracted much attention. According to the tender evaluation method has a higher probability of winning bid is the angle has been the focus of attention. This article is limited to the theoretical aspects and Bidding Strategy Research Project Bidding Ideally, reasonable legal compliance successful completion of the project tender, tender and has a certain significance.

Construction bidding due to large investments, and more involved in terms of factors such as the high-profile construction bidding activities. The following briefly Construction Bid Evaluation Methods in relation to the bidding strategy.

First, the construction method of evaluation

According to "People's Republic of China Bidding Law" Article 41: the winning bidder shall meet the following conditions: (1) be able to satisfy all the comprehensive evaluation criteria specified in the tender documents; (2) to meet the tender substantive requirements document, and accredited lowest bid price; but bid prices below cost. As can be seen from this provision, there are two main evaluation methods: comprehensive evaluation method, the lowest evaluated bid price. Below were two kinds of evaluation methods:

(A) Comprehensive Evaluation Method

Comprehensive evaluation method is characterized by the variety of qualifications related to qualifications, technology, business services and terms are translated into a certain point value, with a total score of 100 points. Evaluation of the bids, bidders for each of the indicators for compliance review, verify and give a score value, and finally, a summary comparison, take the highest score value as the successful bidder. The evaluation, each independent judges after scoring summary scores. This method has the advantage of easy-to-control standard scoring. The difficulty is precisely in this, to be in conformity with the laws and regulations, the development of indicators and evaluation of specific projects fractional value and, after refining the standard is difficult to meet the greatest degree tenderer wishes. The disadvantage is difficult to unified evaluation methods and standards and norms, easily lead to doubts and complaints, the judges too much discretion and the highest bidder winning the like.

(B) Evaluated the lowest evaluated bid price

Features review by the lowest evaluated bid price of qualifications, qualifications, performance and other conditions, to take "those who pass by, who failed phase out" approach, which is to conduct the compliance review, technical indicators in line with further review, then involving bidders variety of technologies, business and services index requirements, in accordance with uniform standards conversion price comparison, and "lowest evaluated bid" as the successful bidder's way. Under special circumstances, allowing bidders a situation markup (such as the international tender, domestic, domestic supply compared with the direct importers, allowing 15% of the "increase"). The evaluation, each independent judges comments, summarizing the evaluation conclusions drawn. This method is suitable for the use of financial funds and other mutual funds and carry out procurement tenders, to better reflect the savings through competition, to meet the needs of public procurement purposes and does not violate the laws and regulations under the premise of the principle that best fit the tenderer requirements and wishes; evaluation more scientific, meticulous, each bidder can tell their reasons for not winning. The disadvantage is setting

key technical compliance review and business indicators need to be carefully considered, although in most cases to avoid the "highest bidder won the bid," the problem, but difficult to accurately delineate the relationship between conversion "technical indicators" with the price, not performance the "price" really means.

Lowest reasonable evaluation method that is reasonable lowest bid among all those who offer to become the project the winning bidder. "Lowest reasonable" means should be able to meet the substantive requirements of the tender documents, and is accredited bids the lowest price, but lower than the tender price, except their own costs. Evaluated bid price is not necessarily the lowest bidder bidding the lowest bid price. Comments bid price is a measure of the competitiveness of quantitative indicators show a form of money, which in addition to considering price factors, but also considering the use of such factors as construction design, quality, duration, contractors previous experience in construction and construction of new technologies .

Second, a reasonable low bid tender status quo

Reasonable low bid and the lowest bid tender evaluation are two ways to choose. Since only the lowest bid and the tender price control, the rate of fall-related random, not in this repeat. The method focuses on the evaluation of the relationship between low and reasonable price bidding strategy.

Setting evaluation reference value, a random lottery fall rate, the integrity of rankings is to avoid confining the subject an effective means. Different tender documents the evaluation reference value calculation is different, there are differences in the way the value of a random lottery to fall rates. In general, the tendering process there are a few key points: ① tender Relationship: Tender Notice to opening time is very short; qualification very "strict"; expert evaluation of subjective factors; opaque in the evaluation process; inadequate supervision and management, the main limitation is the bidder from subjective factors to influence the tender results. ② tender side relationship: pre-restrictive technical requirements and technical score ratio; tender side judges; Tendering responsible, technical score and subjective factors. ③ relationship bidders: Number of bidders; bidders offer; the main competitor information, etc., mainly tender price. These factors are the laws and regulations of the bidding companies, the tender side, bidders accordingly constraints. Due to the comprehensive score and the lowest score to make profits than ever before bidding, the bidding system is state laws and regulations, in violation of the contradictions of individual enterprises adventure once intensification, the consequences will be unbearable. But in this case, still be the individual knowingly take risks for the benefit of the phenomenon.

Third, the bidding strategy case studies. The tender price control and cost gap is not general, combined with the tender documents before the tender (including drawings, list) need to calculate their own costs (by multiple factors), based on the use of legitimate and reasonable profit targets bidding strategies (such as unbalanced pricing, etc.) to determine whether We can undertake to implement. For the purposes of the tender, bidders accounted for participation, the greater the chance of winning, in general, offer a centralized or decentralized distribution density offer two ways to bid. Case evaluation combined with the more commonly used evaluation reference value, a random fall rate tender score were analyzed. Case One, two analysis strategies using the inductive method, Case III a combination inductive and deductive analysis strategies.

Case 1:

① evaluation reference value = (tender price control + B) ÷ 2. Where: B: enter the evaluation phase, the control is not higher than the tender price not lower than the arithmetic mean of the tender price control 93 percent of all bidders offer, tender offer less than 93% of the tender price control does not participate in the evaluation reference value calculations, but to participate in the next review.

② reasonable price = bid evaluation reference value * (1 - adjustment coefficient), the adjustment coefficient: Live by the supervision departments, the tender and bidders from 1%, 1.5%, 2%, 2.5%, 3%, 3.5%, 4 %, 4.5% coefficient randomly selected three factors, the average coefficient of three adjustment factor.

③ bidders tender offer reasonable bid price equal to or closest to the first successful candidate;

if the tender offer bidders with a reasonable bid price equal to the absolute value of the deviation to the low tender offer for the first successful candidate.

A price control if the tender has been published, how tender offer to bid?

Bidding Strategy Analysis:

① Let evaluation reference value y .

Assuming that all bidders quotes are 93% A , then $y_{\min} = (A + 93\% A) \div 2 = 96.5\% A$;

Assuming that all bidders offer to A , both $y_{\max} = (A + A) \div 2 = A$;

Therefore, $96.5\% A \leq y \leq A$.

② Reasonable offer for p , adjustment factor q .

Three randomly selected minimum coefficient combination is 1%, 1.5%, 2%, or $q_{\min} 1.5\%$;

Random combination of three factors is the maximum was 3.5%, 4%, 4.5%, or $q_{\max} 4\%$;

Therefore, $1.5\% \leq q \leq 4\%$, $92.64\% A \leq 96\% y \leq p = y * (1-q) \leq 98.5\% y \leq 98.5\% A$,

Because $p \geq 93\% A$, it is $93\% A \leq p \leq 98.5\% A$.

③ reasonable tender offer must be reported within $[93\% A, 98.5\% A]$ range. Tender offer between $98.5\% A \sim A$ bid can not determine, but it can reasonably raised the bid price, which may offer slightly greater chance of winning.

Case 2:

Evaluation reference value = (the tender offer and the effective / efficient bidding unit number) * 0.96. Wherein: the tender offer shall be valid between $[0.85 * \text{price controls}, \text{price controls}]$ between; each valid tender offer for each one percentage point higher than the evaluation reference value, subtract 1 point, each lower than the tender offer bid reference value a deduction of 0.5 percentage point points deduction last. How tender offer to bid?

Bidding Strategy Analysis:

① Let evaluation reference value y , control price A .

Assuming that all bidders quotes are 85% A , then $y_{\min} = 85\% A * 0.96 = 81.6\% A$;

Assuming that all bidders offer to A , both $y_{\max} = A * 0.96 = 96\% A$;

Therefore, $81.6\% A \leq y \leq 96\% A$.

② Reasonable offer for p , adjustment factor q , reasonable pricing $p = y * (1-q)$.

A random coefficient minimum of 1 per cent, or $q_{\min} 1\%$;

A random coefficient maximum is 4.5%, which $q_{\max} 4.5\%$;

Therefore, $1\% \leq q \leq 4.5\%$, $77.93\% A \leq 95.5\% y \leq p = y * (1-q) \leq 99\% y \leq 95.04\% A$,

Because $p \geq 85\% A$, it is $85\% A \leq p \leq 96.04\% A$.

③ reasonable offer must be reported within $[85\% A, 96.04\% A]$ range. Tender offer between $96.04\% A \sim A$ bid can not determine, but it can reasonably raised the bid price, which may offer slightly greater chance of winning.

Reasonable pricing calculation interval range is large. Without considering other factors, the best way to offer: ① offer moderate, because it is not the lowest bid, so do not deliberately reported low, while ensuring that 85% can not be too close to the bidding or tender control price control price, the highest so avoid being removed the lowest price and the number of bidders and reduce the risk of common; ② quote density need to focus on, so make the evaluation reference value is more biased side. In summary, the offer can be centrally controlled 92.5% * bidding price is better. Consider Yaohao determine the rate to fall, according to 95% * tender control price! But can this probability is very small, we need to take into account other factors.

Case 3:

① evaluation reference value = (the tender offer and the effective / efficient bidding unit number) * (1-adjustment factor). The tender offer shall be valid between $[0.80 * \text{price control}, \text{price control}]$ between.

② adjustment factor: Live by the supervision departments, the tender and bidders from 0.5%, 1%, 1.5%, 2%, 2.5%, 3%, 3.5% coefficient in a random factor adjustment factor.

③ When the evaluation reference value obtained when the bid price equal to 100 points, while the tender offer bid higher than the reference value for each one percentage point deducted 1.5

points lower than the tender offer bid reference value every 1 percentage point 1 point deduction, the deduction until the End .

④ After considering the integrity of the ranking score accounted for 20%, accounting for 80% of the bid price score added as an overall score, ranked first for the winning unit.

How tender offer to bid?

Bidding Strategy Analysis:

① Let evaluation reference value y , control price A . In view of the evaluation reference value is determined only valid bid adjustment factor, and therefore, the density of centralized bidding in the tender price control. 2 analysis using case, all prices were between $95\% A \leq y \leq A$.

② Reasonable offer for p , adjustment factor q , reasonable pricing $p = y * (1-q)$,

A random coefficient minimum of 0.5%, or $0.5\% q_{min}$;

A random coefficient maximum value of 3.5%, that $q_{max} 3.5\%$;

Therefore, $0.5\% \leq q \leq 3.5\%$, $91.68\% A \leq 96.5\% y \leq p = y * (1-q) \leq 99.5\% y \leq 99.5\% A$,

Because $p \geq 95\% A$, it is $95\% A \leq p \leq 99.5\% A$.

③ reasonable offer must be reported within $[95\% A, 99.5\% A]$ range. Bidding in the interval $[99.5\% * \text{Control the tender price, the tender price control}]$ may determine not winning, but can be pulled reasonable bid price. Combined with the integrity of public ranking of the top 10 was made in good faith smaller gap, only a maximum of 0.582. Therefore, they will not be considered when analyzing the impact on the overall integrity of the ranking score, the bid strategy analysis generally range little effect.

④ Since the deduction is higher than 1.5 points lower than the 1 point deduction, which is more inclined to the former integrity ranked ten, offer slightly higher unit, which marked a great chance.

IV Summary

This article is limited to the theoretical study of project bidding bidding strategy, and to have a higher probability of winning angle to analyze the actual situation is affected by many factors. Bidders in terms of legal compliance not bid because the interests of desperate consequences will be unbearable. Of the bidding companies, the tender, the tender to carry out legitimate work, the use of legal rules and regulations permit conditions, timely adjustment optimization, the maximum to meet the tender requirements and wishes of people is an important goal of the tender exercise.

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