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Competitive Bidding: Can competition for mining rights increase government revenues?

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This policy paper was written by the IGF and ATAF, with contributions from Thomas Pogge (Yale University) and the ministries of mines in Colombia and India.

1.0 Introduction

Competitive bidding, under the right conditions, can result in an efficient way to assign public licences to private companies to extract subsoil resources. It has proven beneficial—and lucrative—for many oil-rich countries. Noting that the two sectors are different, this policy paper explores how competitive bidding can be effectively used by mineral-rich countries to increase government revenue.

A competitive bidding process is meant to use competition and transparency to select the most efficient investors—technically and financially—to develop a given mineral resource, or at least to sieve out unqualified investors. A government agency provides information about the mineral deposit to potential investors who compete for the right to develop the resource. The investor with the best offer, or bid, is considered best suited to develop the resource and is allocated the corresponding mineral licence. This method is also known as the auction system or licensing rounds.

For known mineral resouces, the bidding process is, in theory, superior to other licence allocation mechanisms, such as "first come, first served" and "administrative" (also known as a beauty contest) processes, which are more common in the mining sector. In the first come, first served approach, a mining licence is awarded to the first qualified investor who expresses interest in developing the resource. Whereas this method is simple to administer, and the only viable one for exploration licenses over unknown resources, the probability that the first investor is the most qualified to develop a large-scale mine is low. In the administrative process, investors communicate their plans to develop a resource and governments engage in bilateral closed-door negotiations to award the licence to one investor. Both of these licence allocation mechanisms can be arbitrary and prone to corruption in the absence of strong transparency and oversight mechanisms .

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There is a renewed interest in competitive bidding in the mining sector as part of reforms to increase investment. Uganda and Saudi Arabia are the latest countries to introduce an auction system (El Yaakoubi, 2022; Uganda Gazette, 2021). As described in this handbook, there is an increased global demand for minerals to power the energy transition. Governments in resource-rich countries can leverage this demand and allocate their mineral resources to qualified investors who will maximize government revenue.

Licensing is an important risk area in mining sector governance (Natural Resource Governance Institute, 2021). A lack of transparency and oversight in the process can undermine the benefits accruing to mineral-rich countries. This policy paper describes the necessary conditions for countries to successfully implement competitive bidding to allocate mining licences and increase their revenue from the sector

2.0 How Does Competitive Bidding Work?

An auction process builds on the concept of a competitive market to set the price of a transaction. In a competitive licence allocation, the government wants to "sell" a mining licence to prospective investors. The government provides equal information about the licence and the geological and geophysical data of the mineral deposit to all interested parties. Investors then use the information and their own technical know-how to establish the value of the resource and submit an offer, or bid, to develop the resource. The investor who bids the highest above the government's minimum established criteria is given an exclusive mining right to develop the resource.

The bidding parameters established by the government can be based on

- Investment commitments (capital expenditure)
- Work program (time and volumes of production)
- Local content
- Fiscal terms (e.g., royalty rate or percentages of profit share)
- Signature bonus
- A mixture of the above.

An auction process is based on game theory. Bids can reveal to the seller how much value potential buyers attach to the mineral deposit. Because each buyer has an incentive to submit the best offer based on available geological information and their own experience, they can possibly outbid their competition while expecting a profitable investment. If their bid is too conservative, they risk losing the mining rights to another bidder. If they bid too high, they may not be able to deliver on their commitments and risk losing the licence or incurring financial losses.

2.1 Different Designs of Competitive Bidding

There are many ways to design an auction. Game theory predicts different outcomes depending on the auction design. Governments can choose from them depending on the type of licence they are offering, the level of interest from prospective buyers, and their own capacity to manage a complex licensing round. The most common are:

Sealed bids

In a sealed bidding process, bidders submit closed bids only once in a licensing round (Tordo et al., 2010). The bidder who bids the highest wins the auction. If the winner pays the highest bid, it is known as a first price sealed bid. If the winner is made to pay the price of the second-highest bid, it is known as a second-price sealed bid. A second-price sealed bid prevents the winner from paying the highest bid they quoted. The assumption is that the highest bid may be overly optimistic and that the highest bidder only used it to outbid competitors—as such, it is further away from the true value of the resource (Tordo et al., 2010).

Using sealed bids reduces the risk of investors colluding to distort the auction outcome because each company does not know the bids submitted by other bidders until the winning bid is announced (Crampton, 2010). This design also increases the chance of the government getting higher revenues as bidders are inclined to submit high bid prices to ensure that they win the auction (Crampton, 2010).

Ascending bids

In ascending bids—familiar to the general public from estate sales and popular culture—bidders openly submit multiple bids one after the other, trying to outbid each other until there remains one bidder who bids the highest (Tordo et al., 2010). Bidders adjust their bid offers subject to the bids quoted by other bidders. This design is prone to collusion, as bidders can plan during the auction to fix the winning bid (Crampton, 2010).

2.2 Stages of Competitive Bidding

The typical cycle of a competitive bidding process includes the following elements (Columbia Center on Sustainable Investment, 2019; Stanley & Mikhaylova, 2011; Tordo et al., 2010).

- ✓ Prequalification: The government invites potential bidders to submit Expressions of Interest (EOI) to bid for a mining licence. The objective of prequalification is for the government to gather interest from potential bidders and evaluate their track record and technical and financial capacity to develop the resource. It can help to triage credible investors and ensure there will be sufficient bidders for a licensing round. The government invites potential bidders to submit documents such as audited financial statements and their mining portfolios. Prequalification is not carried out by all jurisdictions. In Colombia, once a potential bidder is prequalified, they are permitted to participate in several bidding rounds offered by the ministry (Karen Bonilla, personal communication, 2022).
- ✓ Designing the bid: The government prepares the bid package and chooses the bidding process and bidding criteria. It compiles the geological and geophysical data to be shared with potential investors. The bid can be designed by a government agency or an independent party contracted to do this on behalf of the government. The government can also set up a bidding committee with representatives from different institutions to oversee the bid.
- ✓ Advertising the bid: The government shares the bid package with potential investors. In the case where a prequalification process was conducted, the bid package would be sent only to prequalified investors. Normally, a government representative would launch the

licensing round at a public event attended by many potential investors and transmitted online or on live television. Thereafter, a government agency may conduct international roadshows to advertise the bid.

The bid package can be accessed online on a government website, and physical copies are made available at government offices. A virtual-electronic data room is created where prospective bidders may view data available on the mining area and buy it. There may be a period within which the government can respond to questions from investors on the bid package.

- ✓ Conducting the bid: This step is done by either a government agency or a third party. Bidding itself can occur electronically or in person. If done electronically, potential bidders are given a timeline to submit their bids online. Once time has lapsed, the government will evaluate the bids. If bidding is done in person, the government will set a date and time for all potential bidders to meet and conduct the bid. Several bids can be auctioned together or sequentially. Sequential bidding can be time consuming and costly for governments.

  Bidding can result in a tie between two or more investors. In this case, the government may proceed to negotiate directly with each bidder to break the tie. If bidders bid below the minimum criteria, the government may annul the bid. The established minimum criteria may or may not be disclosed to potential bidders before or after the process.

- ✓ Awarding of the mining licence: The winning bid is awarded the mining licence. Other bidders are notified of the results; results should also be accessible to the public. In some jurisdictions, the award of a mining licence must be approved by parliament.

3.0 The Benefits of Competitive Bidding

Governments use competitive bidding to achieve different objectives, including increasing transparency in the licence allocation process, generating interest from a diverse set of investors and/or increasing overall government revenue from a mining project.

Saudi Arabia and Nigeria introduced competitive bidding as part of a strategy to diversify economies that are dependent on the hydrocarbon sector and increase investment in the mining sector (El Yaakoubi, 2022); World Bank, 2013). India introduced competitive bidding to increase transparency (Dr. Veena Kumari, personal communication, 2022). Guinea used it twice in the last ten years to allocate bauxite and iron ore licenses previously explored and retroceded to the state.

Successful competitive bidding can result in the following benefits for resource-rich countries.

It can bridge informational assymetry

Bidding gives governments access to additional information that various potential investors have on the commercial viability of a mineral resource, based on their expericence and interpretation of the geological data provided. In competitive bidding, investors have an incentive to disclose their best offer to develop the resource. This gives the state information about the value of its resource that it did not have before. This bridges the information asymmetry that is typical of direct bilateral negotiations where the potential investor has more information about the resource and

its development plans and can use it to their advantage to obtain concessions and fiscal incentives from the government.

It can increase investment

As an open process with international visibility, competitive bidding can increase investors' interest in a mining jurisdiction. Egypt's first licensing round increased the number of gold investors from one (Centamin) to 11 mining companies (Mining Technology, 2020).

It can increase government revenues

Competitive bidding can increase government revenue in three ways:

a) Monies paid by all bidders (cost of bidding), such as bidding fees

b) The financial components of a bid, such as a signature bonus

c) The increased profitability of a mine from the selection of an investor who can optimize the deposit based on their financial and technical capacity as well as track record and as such increase the overall revenue potential of the project.

Example A: Afghanistan's Aynak copper deposit was put up for international auction in 2007. The bid translated into a one-off cash payment of USD 808 million and higher mining royalty rates (Stanley & Mikhaylova, 2011).

Example B: The Government of India receives an additional revenue stream referred to as an auction premium because of the design of its competitive bidding process. This is in addition to royalties and other fiscal payments, such as corporate income tax. The auction premium is calculated as a percentage of the value of minerals sold in a month, as quoted by the highest bidder during the auction. From 38 of its auctioned blocks, the government has received USD 2.6 billion in auction premiums. This is comparable to the USD 2.7 billion in mineral royalties collected from 405 of its working mines (auctioned and non-auctioned mines) (Dr. Veena Kumari, personal communication, 2022).

Table 1. Impact of auctions on revenues in India

State	Total number of working mines	Out of (a), number of auctioned working mines	Total royalty[1] collection from all the working mines (USD million)	Total auction premium from the auctioned mines (USD million)
	(a)	(b)	(c)	(d)
Odisha	140	23	2, 576	2,407
Karnataka	131	11	81	235

[1] While royalty and auction premium have different objectives, table 1 gives a context of the magnitude of the auction premium.

Andhra Pradesh	134	2	1	1
Total*	**405**	**36**	**2, 658**	**2, 643**

It can reduce the risk of corruption

Competitive bidding is premised on the use of transparency to allocate mining licenses. As long as bidding is conducted in an open and transparent process, the bid package and results can be accessed by the public, and there are strong oversight mechanisms, competitive bidding can limit discretion, collusion, and corruption.

It can discourage concession sitting

The prequalification stage of competitive bidding can weed out investors who have no technical and financial capacity to develop the resource. This prevents concession sitting, where unqualified investors take up licences for speculative reasons only to later sell them at a premium without having done any development. Other measures to minimize the risk of concession sitting include imposing minimum work programs, rising yearly surface fees and relinquishment of the mining area, also available under other license allocation methods.

4.0 Risks Associated With Competitive Bidding

Competitive bidding is susceptible to risks, which may result in a less-efficient outcome or an altogether failed bid. These risks are described below.

Collusion

Bidders can conspire to fix the winning bid. The risk is higher in ascending bids where bidders know each other's bids or where a bidder can be coerced to withdraw their bid to allow another company to win. Also, bidders can use intermediaries and shell companies to hide their connection to one another and create the illusion of competition (Organisation for Economic Co-operation and Development, 2016).

One way to mitigate collusion is to require prospective investors to submit information on beneficial ownership to ascertain any relationship between the bidders. Another is to consider using closed bids where the bidders do not know the other bids submitted, thus reducing the risk of coercion. Governments may also establish penalties, such as banning bidders taking part in collusion from participating in subsequent licensing rounds.

Corruption

Corruption in competitive bidding can occur when the licensing round is supplemented by direct negotiations. Direct negotiations bring with them risks of corruption through bribery and fraud if the process is not transparent and individual government officials hold discretionary powers.

Corruption can still occur in the absence of direct negotiations when a government official with privileged information, such as a member of the bidding committee, secretly grants confidential information to one of the bidders to help them to win the auction (Organisation for Economic Co-operation and Development, 2016). Corruption includes conflicts of interest, such as when a government official has an ownership stake in a company that is participating in the bid (Sayne et al., 2017).

Low participation from junior companies

Auctions can lock out junior companies that may have the fiancial and technical capacity to develop the resource but may be outbid by large companies who are equally competent.

Some countries allow for joint bidding, where bidders can work together to develop the resource. Others do not, for fear of collusion or reduced competition in the licensing round. Other countries, such as Angola, require investors to indicate their preferred level of participating interest and whether they want to participate as the operator of a joint venture. Depending on the response, the government may require investors to partner—also known as "forced marriage"—to develop the resource (Tordo et al., 2010).

Low Competition

When the auction fails to attract competition between bidders, it may result in a less efficient outcome. There is no specific recommendation on the number of bidders required. India, for example, requires the participation of a minimum of three qualified bidders in its first round of ascending auction. If the bid fails to attract at least three bidders, they can re-auction the same block under the same conditions. If fewer than three bids are received on the second attempt, the auction can proceed (Dr. Veena Kumari, personal communication, 2022).

Investors might not take part in a bidding round if the auction is not properly advertised and only a handful of companies know about it. The timing of the auction might also limit participation, for example, when there is a downward trend in the price forecast for the mineral being auctioned and financing conditions are difficult.

Investors may be reluctant to participate in a bidding round if a country has a high risk of asset expropriation (Crampton, 2010). Investors will avoid making huge upfront payments associated with bidding, such as bonus payments, if the risk of not recovering those costs is high. Political instability and poor governance also hinder prospective investors from participating in competitive licence allocation processes.

5.0 Conditions for the Success of Competitive Bidding in the Mining Sector

Given the above discussions, a successful competitive bidding process will depend on the elements described below.

Sufficient competition

The first requirement for competitive bidding is competition. The auction system relies on competition to identify the most efficient investor(s) to develop the resource (Crampton, 2010). The auction should therefore attract more than one bidder for competition to take place. The number of bidders will depend mostly on the quality and quantity of the mineral resource, judging from the geological information.

Investors will also consider the market projections for the mineral. For example, high demand for critical minerals to fuel the energy transition would be followed by an increase in the price forecasts for these minerals. Investors will place high bids for such resources with the confidence that they will recoup their investments (Crampton, 2010).

Available geological information

Investors assess the quality of a resource primarily using the geological information provided as part of the bid package. Governments should therefore consider sharing as much relevant geological information as possible. Limited geological information will discourage potential investors from participating in the bid. Those that do participate may incorrectly value the licence and, as such, make uninformed decisions; investors with mining licences adjacent to the licence being auctioned will have an added advantage in determining the value of the licence.

Brownfield investments have more geological and geophysical data than greenfield investments, making them easier to auction than unexplored areas. Countries such as Colombia or Guinea only auction mining blocks where the Colombian Geological Survey has collected sufficient data (Karen Bonilla, personal communication, 2022). Governments should consider investing in collecting more data on unexplored areas in the mining cadastre and prequalifying investors to gather interest before conducting a bid.

Governments may still auction greenfield investments with a view to increasing the level of exploration activity. In this case, the priority is to design the bid to attract exploration companies—for example, including minimum work programs rather than signature bonuses, socio-economic development, employee training, and local content as bidding variables. It may be necessary to allow for joint bidding for greenfield investment as it allows investors to share the financial risks.

Terms of the bid

If the government sets the minimum bidding criteria too high, few companies will participate in the bid. If the bid proceeds and the winning bid is overly optimistic, it can create inefficiencies, also known as a "winner's curse." The highest bidder may not meet the project milestones and, as a result, be required to pay penalties or force the government to renegotiate the terms. Governments should set a realistic reserve price and potentially consider using second price-sealed bids in cases where the first price seems unrealistic.

Additionally, auctions with multiple bidding criteria may be complex to administer, posing a risk that auctioning countries may—due to a lack of expertise—make poor choices about bidding parameters or scoring and ranking competing bids. Any weakness can be exploited by investors that are able to hire experts and lobbyists to support their bids. Governments should limit the

number of bidding parameters or hire independent firms to conduct bids on their behalf if they do not have the capacity to operate complex licensing rounds.

Transparency

Transparency in competitive bidding is critical. Without it, political interference and corruption can undermine its objectives. Governments should ensure that all information on the bidding criteria, bid evaluations, and bid results are made public. The process should also limit the use of direct negotiations. Governments should prohibit officials holding interests in mining companies from participating in bidding committees as it would result in a conflict of interest (Westenberg & Sayne, 2018).

Capacity

Governments may lack the capacity to conduct complex bidding rounds. In this case, they may hire an independent auction expert to plan and carry out the bid on their behalf. For example, Afghanistan procured a third-party contractor to prepare its first international tender (Anyak) in 2004 since it had limited capacity. The third-party contractor worked closely with an interministerial committee (Stanley & Mikhaylova, 2011).

To minimize the time and financial resources spent in hiring auction experts, resource-rich countries could come together and create an international auction house for natural resource licence allocations. Any member country could then ask the auction house to manage its competitive bidding rounds. The auction house could be created under the United Nations system or housed by an international organization and dedicated to serving resource-rich countries' collective interests, much like conventional auction houses (such as Sotheby's or Christie's) operate in the long-term collective interests of sellers. It would be able to work with countries to auction mineral deposits in line with consensual forecasts of global mineral demand and, as such, would both optimize resource-rich countries' licence allocation outcomes and help stabilize the long-term supply and demand of minerals.

An international auction house would have three crucial advantages. First, due to economies of scale, it could afford to hire top experts that would match any expertise that even large investors could assemble. This would help neutralize any competence deficit on the government's side.

Second, it would organize successful auctions that are well publicized months or years in advance to ensure that all potential bidders are well informed of upcoming opportunities. This would maximize investor interest and increase competition for licences. It could also help countries plan in advance and coordinate their bidding rounds in the interest of avoiding excessive volatility and prolonged slumps in mineral prices.

Finally, an international auction house could also greatly promote transparency, ensuring that citizens of resource-rich countries know what licences have been awarded, to whom, on what terms, and according to which criteria. A high level of transparency would also reduce corruption. Countries would remain free to make deals outside the auction house, but the decision to do so would raise legitimate questions, especially if the country's officials then accept terms that seem unfavourable compared to those achieved by other countries or if they fail to disclose the terms of their deals altogether.

6.0 Conclusion

Demand for critical minerals to fuel the energy transition presents an opportunity for governments to increase investment in their mining sectors. Under the right conditions, replacing the first come, first served and administrative methods of licensing allocation with competitive bidding could lead to a more efficient and transparent system. The success of the auction system depends on the geological information available on the resource, which is used as a basis for potential investors to compete for the right to develop the resource.

For the auction system to deliver increased investment in the sector, governments will need to carefully design the system. The minimum bidding criteria should not be so prohibitive that it locks investors out of participating in the bid. The system should provide little room for direct and closed negotiations, or else it will be prone to corruption. Compared to the first come, first served approach, the auction system is more complex to administer and will require governments to increase their capacity or turn to independent experts and auction houses for support.

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