



# EPC Contract Risk Analysis Associated with Onshore Projects in Developing Countries

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Richard J. Long, P.E.**

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## EPC Contract Risk Analysis Associated with Onshore Projects in Developing Countries

### 1. INTRODUCTION

Investments by government and private owners in infrastructure, commercial, energy, and other industrial projects in developing countries have substantially increased in the 21<sup>st</sup> century. As a result of the recent economic slowdown in the U.S. and European countries, large, experienced engineering, procurement, and construction (EPC) contractors, as well as smaller, inexperienced contractors, are lured to bid on such projects, sometimes without a full appreciation of the inherent risks. The preference by owners developing such projects to use lump sum or fixed price contract terms increases the exposure to the contractors who undertake such projects. However, the owner is not immune from the risk of project failure just because it thinks that it has mitigated its risks by using lump sum or fixed price contracts, thereby transferring risks to the contractor. The risk of project delay and the consequential cost increases can be catastrophic to an owner. As will be discussed below, delays and large cost increases under a lump sum or fixed price contract can lead to contractor default.

This document addresses those risks and provides potential mitigations for consideration by both owners and contractors undertaking projects in developing countries. The following categories of risks are discussed:

- Risks Associated with Working in Developing Countries;
- Risks Related to Camps and Catering; and
- Risks Related to Certain Contract Provisions.



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### 2. RISKS ASSOCIATED WITH WORKING IN DEVELOPING COUNTRIES

There are certain risks inherent in performing onshore EPC projects in developing countries that can be addressed in contract documents, but that cannot actually be mitigated by even the best and most careful contracting strategy possible. Unfortunately, these risks may be the most significant of all risks to the success of a project. The following risks and their potential mitigations are discussed below:

- Risk of Contractor Default;
- Community Unrest and Local Disruption Risk;
- Political Risk;
- Risk of Intentional Fraud by Project Participants;
- Risk of Competing Projects in the Developing Country; and
- Risk of Weather Interruptions to the Works.

#### 2.1 RISK OF CONTRACTOR DEFAULT

Projects costing hundreds of millions to several billion dollars are especially susceptible to delays and large cost increases. If such projects are executed in developing countries, the risk of extended schedule delays and/or significant cost overruns increases. When these problems occur under a lump sum contract, one of the biggest owner risks is the risk of the contractor defaulting on its obligations and walking away from the project, rather than incurring huge unrecoverable cost overruns. A contractor would clearly be in breach of contract and incur substantial contractual penalties for defaulting; however, a multi-billion dollar project being executed in a difficult construction location has the potential to bankrupt a contractor that is solely or largely dependent on revenues from designing and constructing projects. Faced with looming bankruptcy, the contractor and its parent company that provided a Parent Company Guarantee may have no option other than to walk away from the project to avoid bankrupting the contractor's organization and/or its parent company. If concessions are not granted, the possibility exists that the contractor and its parent company would declare bankruptcy as a means to achieve *de facto* termination of the contract.

A consortium or joint venture (JV) comprising multiple contractors with joint and several liability mitigates this risk somewhat; however, the share of the financial risk on the partner(s) remaining after one or more withdraws from the project may be sufficient for all of the remaining partners to also walk away from the project. The most likely scenario would be for the financially weakest partner in the consortium or JV to pull out first, leaving each of the remaining partners with a higher share of financial risk. The first partner's departure could domino into a chain of events that eventually leaves a single contractor entity holding all of the contractor risk for the entire project. This scenario would effectively undermine the mitigation gained by having multiple contractor participants.



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This situation would even be worse if the financially-strongest contractor were to become frustrated and pull out, leaving the weaker contractor(s) to complete the project. In this case, the domino effect withdrawals of the remaining partners would likely be much more rapid.

A more likely scenario that is perhaps not as grave as outright contractor default is a contractor *threatening* default unless the owner grants extra-contractual concessions to the contractor. These concessions could be approvals of change orders for cost increases and/or schedule extensions that are not sufficiently supported by the contractor to deserve full consideration on their own merits. The owner's concessions could be relaxation of the liquidated damages (LDs) provisions of the contract (perhaps lower daily rates for schedule LDs and/or performance LDs, and perhaps lower caps on the aggregate contractor liabilities for LDs and other contractor risk items). The owner's concessions could also include converting the contract from lump sum to reimbursable cost or some similar contracting form that transfers substantially more risk to the owner than did the original lump sum contract, including the risk of contractor and subcontractor labor productivity and resultant project delays.

### 2.1.1 Possible Mitigations

There is little that can be done within the four corners of a contract to successfully and fully mitigate the risk of contractor default if a project experiences long delays and large cost overruns.

The best mitigation is to select contractors that are financially strong and that have strong parent companies. Contractors with large annual turnover compared to the size of a given project, and contractors and parent companies that have strong revenue streams from non-EPC project work, are less likely to reach the brink of bankruptcy due to major losses on a single project. Intensive due diligence research into contractors and their parent companies must be performed to verify current and potential future financial strength and stability. The lowest-bid contractor may not be the financially-strongest contractor that would best mitigate the risk of contractor default.

Large EPC contracts are best executed when the number of contractor members of the consortium or JV is no more than two or three, and when they are all major players in the international EPC industry. If there are more parties involved, the risk increases that the weakest contractor partner or partners may default and start the domino effect discussed above. The potential for default increases when one or more contractor partners are selected from the local country to achieve required levels of local content. The local partners are often less stable and capable financially, and they are often unable to fund escalating costs that are not covered by approved change orders.

An owner should contractually require that all contractor consortium or JV members have joint and several liability. This requirement is vitally important if default by one of the contractors occurs. The owner should also contractually require that a single member of contractor's consortium or JV be fully empowered by the consortium or JV agreement to make decisions for and act on behalf of



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all other members of the partnership. Without this provision, contractor decisions are almost always delayed while the partners debate on how to proceed, and the project suffers from decision paralysis at times. Unfortunately, the decision paralysis usually occurs at the most critical times when the project is in trouble and needs to be reorganized to go forward. Without timely decisions, the focus of project management and contractor partners' management teams is on resolution of internal conflicts rather than on solving pressing project problems that are causing delays and cost increases. It may be appropriate to incorporate contractual provisions that give the owner the right to require a different JV/consortium member company to take charge under some specific circumstances, such as the JV/consortium's failure to timely act in times of crisis or to take timely action to mitigate significant project risks.

### **2.2 COMMUNITY UNREST AND LOCAL DISRUPTION RISK**

Delays and cost increases on projects in developing countries also occur as a result of community unrest and local disruption. The primary risks in this category are:

- Social Group Enmity and Ethnic Balance;
- Theft; and
- Local Content versus Country Content of the Workforce.

#### **2.2.1 Social Group Enmity and Ethnic Balance**

In developing countries, there is a significant risk of project delays and cost overruns due to activism by local communities in the vicinity of the project site, each trying to ensure that its skilled and unskilled laborers obtain a substantial share of the work. Such disagreements among the local communities may make it extremely difficult to negotiate the original or renegotiate the annual renewals of Project Labor Agreements (PLAs).

The rivalry and enmity between local communities is sometimes so acute that they cannot agree among themselves for long periods of time on which people from which communities are allowed to participate in PLA negotiations. There frequently seem to be situations where each local community leader believes that he is superior to other community leaders in the area. This is particularly apparent when different ethnic groups form the different communities near the project site.

It is likely that social changes within the communities will make it impossible to know who is or is not a member of a governing group and who does and does not have authority to speak and make commitments for the governing group. Owners and contractors sometimes find it impossible to begin or conclude labor agreement negotiations for the simple reason that they cannot determine with certainty which party or parties are allowed to speak and negotiate for the respective communities at a given time, or to sign labor agreements.



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Community enmity is not to be taken lightly, because it has the potential to lead to wildcat strikes or other types of unauthorized work interruptions, slowdowns, and stoppages.

It is likely that achieving at least a modicum of harmony on the project site will lead to requirements that are sometimes not recorded at the outset and that evolve over time as the project is executed. One such requirement is that in remote areas, harmony is usually not achievable until there is some sort of agreed-upon ethnic balance of workers on the project from the various communities in the area. It may not be easy to predict at the outset what these requirements will be and how they will be implemented as the project workforce ramps up from the beginning of work to the peak staffing period. However, it is very likely that these requirements will cause delays in staffing the project as staffing ramps up, and will probably add significant recruiting and training costs to the contractor.

Similar ethnic balancing problems are likely to be incurred as the project begins to de-staff and ramp down toward the end of construction. End-of-job de-staffing on projects in remote areas of the world in lesser-developed countries is usually a major crisis point in a project. Sit-down strikes, sick-outs, on-site fighting and disruptions, blockades of public access ways to the project site, and the like seem to be most prevalent during the critical time when construction is nearing an end and pre-commissioning is under way. If one or another community feels that its members are being de-staffed preferentially, the offended community often ramps up its level of on-site agitation.

### **2.2.1.1 Possible Mitigations**

Probably the best remedy for community enmity problems is to address the issues proactively by bringing them to the table for resolution earlier rather than later. Waiting for problems to arise before they are addressed usually delays reaching solutions, and later solutions are generally more costly than are earlier ones.

As the first post-contract-award PLA is negotiated, it would be good to establish procedures, and to agree them with the factious parties to be involved in the negotiations, by which the various parties to the PLA negotiations will nominate or select their representatives to sit at the negotiating table. The agreements should include provisions for quickly and efficiently replacing duly-selected representatives who later become disruptive to the negotiations to the point that working with them is impossible. Procedural rules as basic as establishing an agreed-upon list of actions that will lead to dismissal of a person from the negotiating team should be agreed upon before actual negotiations begin. Fighting and physical violence of any sort by or among negotiators must be one of the automatic-dismissal rules. Methods for replacing dismissed persons should also be agreed upon beforehand.

Because it is almost certain that some unwritten requirements will eventually come into play, such as ethnic balancing of the workforce among workers from the local-area communities, the issue should be brought to the negotiating table by the contractor or the owner so that guidelines for



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ethnic balancing can be established, and procedures can be developed for monitoring and enforcing the agreed-upon ethnic balances. Consideration should include establishing from the outset any quota requirements and/or the amount of variation in perceived ethnic balances that can exist without having problems erupt.

On-site security staff must be ethnically balanced. To preferentially staff on-site security operations with members of a single ethnic group/community would invite labor disruptions later in the project when other ethnic groups may feel that they are unfairly treated by security staff.

### **2.2.2 Theft**

Disgruntled employees often steal small, easily-concealed, but expensive and difficult-to-replace items, particularly late in the project as de-staffing is occurring. Small alloy valves and small instruments are favorite target items, including those that have already been installed—not just those from the warehouse. Non-warehouse personnel would have difficulty gaining entry to the warehouses to steal items, but they have access to the project facility itself to remove items that have already been installed. It is not difficult to hide such small items on one's person, and it is extremely difficult for security to detect all of the theft that occurs when the workforce numbers in the thousands. Employees often toss the stolen items over the perimeter fence and retrieve them later. It is not unheard of for some on-site security staff members to be participants and collaborators in the thievery. It is also not unheard of for disgruntled employees to steal hard-to-replace items and simply bury or hide them on site, with no purpose in mind other than delaying completion of the project.

Disgruntled employees in danger of being laid off soon sometimes resort to theft at higher levels than previously experienced for at least two reasons: 1) to generate personal income by selling the stolen items, and 2) to slow down completion progress while the stolen items are re-purchased and re-imported, which may delay completion of the project and perhaps give the disgruntled workers a few more days or weeks of employment before being laid off.

#### **2.2.2.1 Possible Mitigations**

Theft cannot be totally eliminated on large projects. There is a diminishing point of return on investment in more security measures versus the value of items lost to on-site theft and the schedule impact of replacing the stolen items. The contractor should already be aware of this problem, and should have historical data to use in setting procurement quantities for frequently-stolen items to avoid project delay when nominal levels of theft occur.

The contractor could use metal detectors at all exit gates used by its personnel, to detect weapons and/or stolen metallic objects such as instruments and alloy valves, copper wiring, copper tubing, and the like. However, using metal detectors would significantly add to the required numbers of on-



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site security forces, and would cause bottleneck delays in clearing the site at the end of the work day. Thus, metal detectors at the exit gates for labor forces are not commonly used.

On-site security forces are the first line of defense against theft. They should be well trained, including training on how to detect and reduce theft. Well-publicized random searches of exiting workers by security forces may be used to curtail theft. Workers from different cultures sometimes tend to steal certain items more than other items, particularly when the local populace uses the items for specific purposes. For example, a project in Algeria experienced extremely high levels of theft of stainless steel instrument tubing. An investigation revealed that the local workers and their families and friends used the stainless steel tubing as spits on which they roasted whole lambs for a traditional meal called a *meshwi*. Workers would cut tubing into meter-long sections and tape the sections to their legs under their clothing to get them off of the job site. Once management figured out this method of theft, it became relatively easy to spot a worker leaving the site with a stiff leg that did not bend at the knee. Many workers from Indonesia and the Philippines are extremely skilled metal workers who use stainless steel items to make jewelry and belt buckles. To the extent that the owner and contractor can identify specific commodities on site that the local culture values most highly, it may be possible to selectively police those commodities to reduce theft.

No major project can eliminate theft; however, some projects seem to control the problem better than others.

### **2.2.3 Local Content versus Country Content of the Workforce**

Probably the biggest risk to jobsite harmony is in the distinction between local content and country content of the workforce. The contract may address workforce country content, and may include references to national government laws and requirements. Certainly, the local communities will use such laws and requirements as tools to gain leverage for imposing their desires on the contractor and the owner.

However, the local communities will be much more interested in *local content* than they are in *country content*. Their first priority will always be to get benefits for their own workers and communities. Local communities are likely to be disinterested, other than to offer lip service, in obtaining benefits for the country in general and for communities in locations away from the local communities. The contract must address the level of discord that will almost certainly occur unless and until local communities are satisfied with their individual slices of the action. The contractor and the owner will likely find it difficult to impossible to bring even skilled labor from locations in the country remote from the local communities until the communities themselves are satisfied that their share of the work is sufficient to allow such “importation” of labor from other parts of the country. Importation of foreign workers will probably be even more difficult.



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### 2.2.3.1 *Possible Mitigations*

Prior to executing a contract for work to be performed at site, the owner and contractor(s) should agree on an integrated and united community action plan, and should make implementation of the plan mandatory in the contracts to be awarded for site work. Multiple contractors working for the owner at the same overall site must walk in concert with each other and with the owner. The contract terms and conditions may require such coordination in principle, but details are generally lacking on distinguishing local content from country content. The national government laws and requirements will largely govern site actions for country content, but contracts generally give inadequate attention to and emphasis on local content and how it is to be managed.

The parties will eventually be forced to satisfy local content demands by the local communities to maintain harmony at the job site. To the extent that this occurs, the owner, main contractor, and other contractors at the same site will be well served to proactively develop plans and establish funding mechanisms to implement the plans to keep the local communities satisfied in the amount of work the local labor force, vendors, and subcontractors are awarded. Failing to agree at least on the principles that will be used to address local content issues prior to contract award will probably lead to rancorous and drawn-out negotiations on potential change orders after award, when it becomes necessary to change hiring practices, quotas, implement ethnic balance procedures, and the like.

Sustainable Development (SD) refers to investment in local community infrastructure works unrelated to the project facilities to improve community relations. Typical SD projects are construction or improvement of community centers, local schools, athletic fields, roadways, and the like. SD contractual provisions should:

- Require a specific amount of SD commitment from the contractor;
- Require the contractor and the owner to cooperate on SD initiatives;
- Ensure that other contractors working at site will implement complementary and non-competing sustainable development projects of appropriate magnitudes; and
- Specify which party bears the risk if SD requirements end up being higher in cost than the contractor included in its bid price to achieve community harmony.

The contractor should be required to disclose its SD plans prior to contract award so that the owner can review the information to determine the extent to which it meshes well with the owner's SD initiatives and plans, and those of other contractors. The parties may need to agree at some time in the future that the project interests would be best served by increasing SD funding and activities. The parties should agree up front that this may occur, and should agree in advance on the mechanisms by which they will share the costs of such additional SD projects.



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Contract statements requiring the contractor to fully comply with the owner's policies and guidelines on community relations provided periodically to the contractor are among contractors' favorite opportunities for justifying change orders. Such contract provisions inform the contractor up front that the owner does not yet know what the policies and guidelines will be, and that they may change after contract award. Contractors could use such provisions to hold that the owner has taken over responsibility for community relations and is, therefore, liable for all schedule and cost increase risks arising from community relations issues after the date of such owner action. The contractor will probably argue that the owner cannot have it both ways; either the contractor drives the community relations train at its own cost and risk, or the owner takes over the throttle and accepts the attendant risk. If and when the owner imposes community relations requirements after contract award that were not included in the contract, the contractor may have a basis to make and sustain such claims unless the contractor is otherwise at fault for causing community and labor problems.

The best course of action is for the contractor to be contractually liable for risks stemming from community relations issues. Alternatively, the owner should have the right to require changes to the contractor's community relations plans to the extent that the owner agrees to consider change order coverage for the contractor's incremental costs and/or schedule impacts.

### **2.3 POLITICAL RISK**

There are certain political risks inherent in executing projects in developing countries, primarily:

- Change of Government Risk; and
- Change in Country Content Requirements Risk.

#### **2.3.1 Risk of Change of Government**

There is a risk that the government of a developing country will change during the term of the contract, either a change that brings different elected and appointed officials to power, or a change to install a new form of government. Agreements made by the owner or the contractor with the former government or appointed officials may not be popular with the new government, and may not be fully honored going forward. Changes in law that a new government or new officials might make include reducing or eliminating owner tax benefits, increasing import duties or similar costs associated with bringing goods into the country, reducing, eliminating, or refusing to grant work visas for foreign workers, and the like.

Many contracts define an "Owner Risk Event" to include change in law. Therefore, the owner generally bears the risk of changes in applicable law after contract award.



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### **2.3.2 Possible Mitigations**

Very little can be done by the owner or the contractor to mitigate the risk of changes in government, other than maintaining close and frequent contacts with government officials and remaining alert and sensitive to potential changes in government or government policy.

It would not be appropriate to make the contractor, rather than the owner, responsible for changes in law, as it is unlikely that any reputable world-scale contractor would assume such contractual risk in developing countries.

### **2.3.3 Change in Country Content Labor Requirements**

Certain country content laws recognize that there may not be sufficient capacity to perform any given project's work with in-country labor and materials; therefore, the government may authorize importation of certain labor and materials, but often only for a fixed duration. The risk is that the authorization duration is less than the planned project duration, or that project delays may extend the project beyond the fixed duration of the authorized importation of foreign-sourced items. Depending on circumstances and availability of local suppliers and resources, the government may extend the authorization window, but assuming that it will do so promptly and without cost or schedule impact to the project is a very real project risk. Also, it may take significant time for a government to extend the window of time for importation of foreign-sourced items. Evidence/proof of substantial actual project delays and cost increases may be required before a government decides to act, and developing such evidence/proof to the satisfaction of a government would likely take substantial time.

The experience of skilled local workmen may not be on par with workmen from other countries with much longer experience in the construction industry. While certain countries may be able to provide large numbers of workers, their skill levels on average may not be as high as those of other countries. In particular, the quality of welding performed on critical pressure-retaining piping and equipment, especially alloy materials, will likely be inferior to welding performed in more developed countries having the requisite experience in this type of welding. If the government requires fabrication and welding activities to be performed in the country where the project is being built, quality will suffer in the short run until the country's welding and fabrication skills are fully developed, and schedule delays are likely to occur if there is a lack of in-country capacity for welding and fabrication in times of high workload.

Certain governments concerned about local content may require the owner to obtain government approval of advertisements, pre-qualification criteria, technical bid documents, technical evaluation criteria, and the proposed bidders lists. There may be a risk of significant project delays if the government officials fail to approve or take an unusually long time to approve this information.



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Certain local content laws may also require that the owner submit a succession plan for any position not held by an in-country citizen, and may require that an in-country citizen be assigned to understudy each incumbent expatriate for a maximum period of time, after which the position must be filled by an in-country citizen.

### **2.3.3.1 Possible Mitigations**

If local content laws of a developing country are rigorously enforced on a project, delays and cost increases will almost certainly occur. There is no possible set of mitigation measures that would completely eliminate these delays and cost increases. The best hope is for mitigation measures to be implemented that will reduce the potential detrimental effects of such laws on a project.

All contract documents must be reviewed and revised to make them compliant with the government's current local content laws. In particular, the owner must carefully determine if the contractor's procurement plan is based on worldwide sourcing of goods and services that may not be compliant with the country's local content laws. Also, the labor provisions of the contract should be reviewed to ascertain if they are consistent with the government's requirements for expatriate quotas, maximum assignment durations, in-country understudies, and the like.

Finally, pre-award negotiations with bidders should focus extensively on the government's local content requirements and their ramifications on the contractor's work plans, schedule, and costs. If bidders propose schedules of the same duration as would be achievable in similar circumstances but for the impact of the local content requirements, the schedules most likely will not be achieved.

## **2.4 RISK OF INTENTIONAL FRAUD BY PROJECT PARTICIPANTS**

The contract may focus on ethical business practices if there is evidence of previous corrupt business practices in the country where the project is being built. Contractor executives have been convicted and served prison time for bribing government officials on projects.

Where large sums of money are in play, and where a culture of corruption and bribery has existed in recent years, there will probably be unscrupulous individuals willing to risk the penalty of law or contract for personal profit or corporate gain. Prisons around the world house individuals who knowingly broke anti-corruption laws and contractual prohibitions on such activities for personal profit or corporate gain in the hope of not being caught.

### **2.4.1 Possible Mitigations**

Contract documents should be clearly written to make it a major contractual violation for the contractor or any representative of the contractor to participate in unethical behavior. However, that does not ensure that such unethical behavior will cease.



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The owner and the contractor are primarily responsible for applying the requirements of existing laws and the contract documents on a project. Vigilance is in order throughout pre-award negotiations and throughout the project to minimize the possibility of corrupt business practices being used.

The owner and the contractor should agree on the total maximum allowed value of any commission, fee, rebate, gift, or entertainment. Alternatively, the clause could be written to state that no such commission, fee, rebate, gift, or entertainment shall exceed the lesser of a stated maximum value or the value of a known commodity or item, such as the value of a business meal in the location where the meal is provided.

### **2.5 RISK OF COMPETING PROJECTS IN THE DEVELOPING COUNTRY**

Finally, there is a risk that other owners will initiate new projects in the developing country before a given project is completed. This, coupled with the local content laws, would put additional pressure on a project in the local communities and in the remainder of the country. Such competition would also cause competition for in-country vendors, suppliers, and subcontractors, which would tend to increase escalation in the region and to cause project delays.

#### **2.5.1 Possible Mitigation**

There is little that the owner or contractor can do to prevent competition from other projects in a developing country. No contract provisions will affect whether or not another owner initiates a new project in the country before a current project is completed. However, the owner should closely watch news of potential new projects in the country to avoid being surprised if one or more is awarded, and to develop plans of action in advance of any such new project awards.

### **2.6 RISK OF WEATHER INTERRUPTIONS TO THE WORKS**

The weather normally experienced in many areas of the world can be severely adverse to construction activities. Most contract documents generally do not address weather risk, other than inclusion of “flood, lightening, hurricane, or other acts of God” or similar terms as Force Majeure events.

Some contract documents provide a partial or full-day’s compensation to construction workers in the event that inclement weather prevents a worker who is available for work but is prevented from doing so, but often are unclear whether the contractor or the owners is responsible for costs or delays that results therefrom. Also, the contract documents often do not define the term “inclement weather.” A reference to weather “*normally experienced*” in the area leaves an opening for the contractor to claim that it was delayed and/or incurred unbudgeted costs for dealing with weather that was worse than that “*normally experienced*.”



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Most experienced contractors will include in the bid costs certain inclement weather lost-work-time costs up to a point, but may attempt to claim against the owner for weather-related costs in excess of whatever the contractor decides to define as “normal” weather events that are included in the contract price, if inclement weather is not defined. If the contract is silent on which party is to be responsible for weather risk other than Force Majeure events, the contractor may claim against the owner for weather events that delay construction and/or add costs to the project, to the extent that contractor can prove that these factors arose from weather events that were not “normal” events that the contractor had foreseen in developing its bid.

If there are no contractual stipulations regarding the definition of unusually severe weather, the contractor may use any convenient set of weather data it chooses to use in developing its case that weather was worse than that for which the contractor planned, and claim that the owner is liable for the contractor’s costs and project delays in excess of budgeted values. For example, the contractor may choose to define “normal” weather based on average weather statistics for either a 5, 10, 15, 25, 50, or 100-year period, absent any contractual requirement on the statistical period of weather history that the contractor is to use. In preparing its claim, the contractor would probably research all available historical weather data and select the set of data that maximizes benefit to the contractor, to the owner’s detriment.

### **2.6.1 Possible Mitigation**

The contract documents should address adverse weather risk as a risk separate from the Force Majeure events, should define which party is responsible for that risk, and should provide a clear definition of “*unusually severe weather.*” Contractors generally accept certain weather risks for onshore projects, but only to the extent that they are required to do so by the relevant contracts. When contracts are silent on which party bears the risk of unusually severe weather (*i.e.*, adverse weather that is not severe enough to qualify as Force Majeure events but that is severe enough to stop the work), contractors generally attempt to claim against owners for delays and additional costs due to adverse weather impacts that are due to weather that is more adverse than normal.



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### 3. RISKS RELATED TO CAMPS AND CATERING

The contract documents usually make the contractor responsible for estimating the size of contractor's total direct and indirect labor, supervision, and management team to be housed in onsite camps. In addition, the contract usually defines the owner's accommodation requirements for its management and labor forces, and may require the contractor to allow for a certain percentage of growth in the owner personnel requirements, with an associated allowance for increased catering costs associated with an increase in owner personnel housing requirements.

While the contract may set these requirements and responsibilities, the following risks can be significant:

- Camp Sizing Risk;
- Camp Catering and Other Services Risk; and
- Risk of Camp Delays due to the Type of Camp Construction.

#### 3.1 *CAMP SIZING RISK*

Several variables affect the required size of a labor camp:

- **Quantities of work to be installed** – The starting point for camp sizing is an estimate of the quantities or equipment and materials to be installed, such as items of engineered equipment, meters of piping, cubic meters of concrete, number of instruments, tons of fabricated structural steel, etc. If estimated quantities are sufficiently accurate to fall within the contingencies used for the camp sizing calculations, then the camp sizing calculation will not be in error due to underestimates or overestimates of quantities. However, if quantities or equipment and materials to be installed that were used to define labor requirements, and therefore used for camp sizing, are understated, the camp size will be similarly underestimated.
- **Ratio of indirect labor to direct labor** – The estimate of indirect labor to direct labor is a variable that is often inaccurate at the bidding stage. Definitions of indirect and direct labor vary between contractors; a portion of the labor hours that some contractors include in direct labor may be considered indirect labor hours by other contractors. Even within the same contractor's organization, the direct labor to indirect labor ratio may vary by the location of the job site within countries that are lesser developed versus more developed countries. To the extent that more indirect labor is required on a given project in a given jobsite location (higher ratio of indirect labor to direct labor), camp sizing may be accurate for the direct labor but significantly underestimated for the indirect labor.



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- **Productivity of the workforce used to install the estimated quantities** – The estimate of productivity at site is a critical factor in estimating the required size of the construction camps. Even if estimates of quantities and the required ratio of direct and indirect labor are correct, errors in estimating on-site productivity will lead to errors in camp size calculations. If the camp size is based on average productivity of, say, 2.0 compared to U.S. Gulf Coast, and the actual productivity turns out to be 4.0 rather than 2.0, the camp will be undersized from the outset by 100 percent. This undersizing result assumes no other errors in camp sizing due to quantities or direct-to-indirect labor ratios.

Contactors' camp size estimates are more accurate when they are based on productivity estimates by craft rather than overall project average productivities. This is particularly important when considering that some crafts' peak workloads occur later in the project than do other craft peaks. For example, instrumentation and electrical work is heavily back-end loaded, whereas civil work is heavily front-end loaded. To the extent that contractors have historical productivity by craft in the jobsite location, the estimates of camp size requirements should be based on by-craft productivities rather than on overall site average productivity.

- **Planned construction duration** – The next major variable affecting camp sizing is the planned duration of the work. The required camp size is roughly inversely proportional to the construction duration. A project with a construction duration of 36 months will require approximately 50 percent more beds than will the same project size executed in 54 months. Performing the same amount of work in less time requires more workers to perform the work.
- **Numbers, timing, and durations of third parties requiring on-site accommodations** – One of the most difficult tasks in estimating required camp size is estimating the numbers, distribution over time, and durations of accommodations for third parties such as pre-commissioning, commissioning and start-up staff, and vendor service men. These third parties are typically required toward the end of construction. Therefore, accommodations for third parties may be planned on the basis that direct and indirect construction personnel will have de-staffed sufficiently by the time that the third parties are needed on site to avoid the need to add beds specifically for the third parties. To the extent that project delays may delay actual de-staffing of construction direct and indirect labor forces, the camp may be undersized when it becomes necessary to house the third parties.



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- **Security staffing** – Onsite security staffing levels are often underestimated on projects in developing countries, both for perimeter and internal site security.
- **Planned occupancy levels** – Large construction camps rarely if ever achieve 100 percent occupancy of all beds at any given time. Contractors typically use their historical data to estimate the number of beds required when camp occupancy is at peak. It is not uncommon for camps to achieve maximum occupancy levels no higher than about 90 to 95 percent at peak staffing times; logistics of personnel movements into and out of the camps are too complex to be manageable at occupancy levels nearing 100 percent.

Having a mixed workforce of males and females housed in separate buildings adds to the complexity of the logistics problems, and drives actual average peak occupancy levels for the overall camp downward.

To the extent that segregation of personnel within the camps along ethnic and/or local community lines is required to achieve harmony, logistics complexity increases and actual maximum average occupancy levels decrease.

- **Contingency for increases in base personnel requirements** – Surprisingly, it is not uncommon for contractors to use different contingency allowances for sizing camps than they use for estimating material quantities to be installed. For example, the contingency for quantity growth may be 10 to 15 percent, whereas the contingency on bed space may be only 5 percent. In such a scenario, if quantities to be installed increase more than the 5 percent allowed for growth in camp beds, the camp will be correspondingly undersized.

A major unknown factor in camp sizing calculations is the allowance that the contractor makes for future changes that will add work scope to a project. Assuming that all of the contractor's original camp sizing assumptions and calculations were accurate, the camp will be undersized if and when changes occur that must be accomplished when the construction staff is at or near peak loading. If change orders add ten percent to the original work scope man-hours during peak staffing periods, the ten percent cannot be accommodated without delaying the project if the camp is undersized.

Camp sizing calculations are complex on any remotely-executed construction project. However, accurately sizing the camp is the single most important factor in achieving success on a project. From the discussions above, it is readily apparent that errors in estimating one or more factors compound, and that the camp sizes can become limiting factors in achieving on-time construction execution. For example, a 15 percent error in estimated quantities, along with a simultaneous 30 percent error in estimating productivity yields a camp that is undersized by about 50 percent. A camp that is undersized by 50 percent will increase the construction schedule by about the same



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ratio. Extensive changes, rework to correct the contractor's errors, errors in estimating direct to indirect labor ratios, and the like will all further compound the problem.

The land area allocated for camps at the construction site is usually an owner risk item. If more area is required than was initially reserved for camps, the owner will be responsible for the contractor's costs and time delays in increasing camps to sizes larger than contemplated in the contract. Houseboats, floatels, and the like are often used as emergency housing measures during peak staffing periods if the site is near a body of water, but the unit cost of these accommodations is higher than land-based camps. Owner's risks also increase to the extent that owner physical changes and/or changes in owner requirements are detrimental to total-project productivity to the extent that additional bed space is required to accommodate the loss in productivity attributable to the owner.

### **3.1.1 Possible Mitigations**

When labor camps are required, they are among the greatest risks to success of any project. If the camps are not sized correctly at the outset, the project end date will almost certainly be delayed by camp and accommodation limitations. Delays in constructing and achieving full occupancy of the camps will directly delay the effective start of construction work for the permanent plant facilities, because the camps will be the residences for the construction workers, and the construction workers must have residences to be able to start work.

The owner should require the bidders to provide to the owner before contract award the bases and assumptions upon which they have developed their camp sizing calculations and camp designs. The owner and the bidders should then jointly review the camp's sizing assumptions and sizing calculations, and agree prior to contract award on the sizing bases and assumptions, but without lessening the contractor's liability for estimating and building appropriately sized camps. The owner should be particularly careful to establish the principles prior to contract award upon which the parties will negotiate in the future if the available land area for the camps is inadequate.

### **3.2 *CAMP CATERING AND OTHER SERVICES RISK***

Cooking, catering, laundry, potable water supply, sewage treatment, and recreational facilities are often bottlenecks when camp sizes need to be increased during a project. Camp size increases after the initial designs and construction of the camps are more than just adding beds in housing units; the personnel occupying the beds require services just as do the base loading personnel for which the camps were originally sized.

If the camps are undersized, the most likely outcome will be an overall project delay that keeps construction, pre-commissioning, commissioning, and start-up personnel on site for longer than originally planned. The delay in de-staffing the camps will lead directly to increases in catering and similar costs.



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Contracts often make the contractor responsible for providing a given percentage of additional beds for owner personnel than specified in the contract documents, but the contracts may not specifically require the contractor to absorb catering, laundry, and related costs for such additional owner personnel.

### **3.2.1 Possible Mitigations**

The contract should include principles and requirements by which catering risks are to be shared by the parties. Generally, the contractor should be responsible for catering and other services risks for increases in unit costs, for increases in quantities due to the contractor's estimating errors prior to contract award, for increases in labor and supervision due to lower than planned productivity due to the contractor's estimating errors or the contractor's performance problems, and for growth in catering and other services quantities attributable to the contractor's own delays. Depending on how the owner and the contractor decide to handle catering and related costs for the contemplated allowance for additional owner personnel, these costs may be for owner's or for the contractor's account. If responsibility for these costs is not stated in the contract, the contractor is likely to claim for catering costs for the increased owner staffing levels in the camps.

### **3.3 RISK OF CAMP DELAYS DUE TO THE TYPE OF CAMP CONSTRUCTION**

There is a risk that the contractor may plan on importing pre-fabricated buildings for use in constructing the camps, but that the government of the country in which the project is being built may prohibit such importation as a means of increasing local content. Also, import regulations may allow or disallow importation of prefabricated buildings based on whether they are considered to be permanent or temporary facilities.

If the contractor plans on importing prefabricated camp buildings and is later denied permission to do so, there will be corresponding delays and cost increases for importing "flat-pack" buildings that are partially pre-assembled before shipping to site, or for stick building the entire camp.

### **3.3.1 Possible Mitigations**

The owner and the contractor should investigate the country's importation limitations on prefabricated camp buildings before the contract is executed to ensure that the contractor's plans for the camps are aligned with any importation limitations and restrictions. The contract should comply with the current importation requirements of the country in which the project is being built.



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### 4. RISKS RELATED TO CERTAIN CONTRACT PROVISIONS

A discussion of the risks associated with the following potential contractual provisions that are particularly relevant to performing work in developing countries is discussed below:

- Risk of Cost Increases and Delays for Compliance with Local Laws
- Risk of Site Security Cost Increases
- Risks of Claims due to Financers' Requirements
- Risk of Interference and Delays from Other Contractors
- Risk of Escalation in Labor Costs at Site
- Risk that Advance Notice Provisions May not be Enforced
- Risk of Claims Caused by Owner Delays in Providing Review Comments
- Risk of Disputes Regarding Contractor's Responsibility for Community Disturbances

#### 4.1 *RISK OF COST INCREASES AND DELAYS FOR COMPLIANCE WITH LOCAL LAWS*

Contracts often define "Applicable Laws" as the laws of any national, state, local, environmental, and/or other governmental body having jurisdiction over a project. Thus, the contractor may be at risk for the costs associated with complying with local laws to the extent that the laws' jurisdiction includes the project, unless the contractor can demonstrate that it had a reasonable basis to believe during the bidding phase that the jurisdiction did not exist. If the local government bodies do have jurisdiction, and the local laws change after contract award, these post-award changes in law would normally be risk events for which the owner is responsible.

If local jurisdiction exists, the risks are significant in terms of both schedule and cost. Local communities in developing countries are likely to make changes in law or in interpretations of existing laws that provide advantages to themselves to the detriment of the owner and/or the contractor. The changes in law or interpretations of existing laws could involve quotas, ethnic balance, hiring practices, and the like, which have the potential to significantly delay a project.

##### 4.1.1 Possible Mitigation

Recommended mitigation measures include proactive dealings with the local community leaders to keep them satisfied with their share of the work so that they have little or no incentive to enact new laws or to interpret existing laws to their further benefit.



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### **4.2 RISK OF SITE SECURITY COST INCREASES**

The contractor is usually responsible for the site security plan and the development of a security induction training program, which is normally subject to the owner's approval. When security requirements are not defined prior to contract award, there is risk of contractor claims for the owner's requirements that are defined after award.

Security costs will also increase in proportion to any schedule delays that occur on a project, and the parties will generally be liable for these costs in proportion to their respective responsibility for the schedule delays.

#### **4.2.1 Possible Mitigations**

Security on a large project site is a complex and ever-evolving process. It is not always possible to accurately predict before work actually begins at the site how much security staff will be required, either for the owner or for the contractor.

To mitigate these risks, the owner and the contractor should jointly define and agree prior to contract award the basis upon which the contractor's bid was developed, and on how to allocate the risks due to changes in security requirements. To the extent that the owner and contractor can agree before contract award on joint security procedures to be followed after award, the owner's risk is reduced.

### **4.3 RISKS OF CLAIMS DUE TO FINANCERS' REQUIREMENTS**

Projects financed by export credit agencies (ECAs) are frequently subject to higher costs and some schedule delays due to ECA requirements placed on owners and contractors. Certain typical ECA requirements are discussed below:

- **Purchases from Countries not Contemplated by Contractor** – Contracts may address the potential that it may become advantageous for the owner to utilize financing from one or more ECAs or other governmental agencies of a country in which the contractor would not otherwise intend to place orders with subcontractors or suppliers, or in which the amount of such orders would not be sufficient to achieve the owner's financing goals. The contract may state that the contractor shall not unreasonably refuse the owner's request to place an order with the alternative subcontractor or supplier identified by the owner.

Such contractual statements leave the contractor in a position of not knowing whether increased costs or schedule delays attributable to changes in source countries will be compensated. The parties may not agree on whether the



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purchase in question is on or near the critical path of the project, and it often takes a lot of time for the contractor to prove that an item is truly a critical path item. If the purchase is actually on the critical path, the overall project will be delayed day for day until the parties reach a mutually acceptable solution. This negotiating is also disruptive to the project, as it distracts contractor management from focusing on other project issues. Change orders will certainly arise if the contractor is forced to procure from specific countries at potentially higher costs, with longer delivery times, and/or with inferior quality of materials and workmanship.

- **Financing Parties' Engineer** – Contracts usually give authority to a person designated as an authorized representative of the owner and/or the financing parties' engineer assigned to make inspections of the Work, including labor, contractor items, and owner items at the work site(s). Such stipulations may give the financing parties' engineer essentially unfettered access to any and all portions of the work at all times, with the right to demand information on any part of the work and to require the contractor to make changes if the financing parties' engineer so requests. A contractor has no way to estimate in advance the impact of the potential financing parties' engineer on its work. Thus, it is likely that the contractor will claim against the owner for time and/or money impacts on the work caused by the financing parties engineer in excess of estimated reasonable impacts.
- **Replacement of Subcontractors and Suppliers** – Owners often include in the contract terms and conditions the requirement that the contractor seek the owner's concurrence and obtain the owner's written consent prior to replacing any supplier and/or subcontractor, and provide the owner with appropriate technical and commercial information appertaining to the proposed supplier and/or subcontractor.

There is a risk of delay and attendant costs due to disagreements between the owner and the contractor on the contractor's desired suppliers and/or subcontractors. Any local content requirements of the contract are also likely to cause disagreements between the parties, which is a topic previously discussed. Owner's requirement for the contractor to provide equipment and materials from countries represented by the ECAs will likely make it much more difficult for the parties to agree on the contractor's requests for approval of alternate suppliers. To the extent that such disagreements relate to suppliers and/or subcontractors to provide materials, equipment, or services that fall on the critical path, there will be a day-for-day delay to the project's end date (absent acceleration measures to mitigate the delays) until the disagreements are resolved, with attendant cost consequences. Local content



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laws may give in country suppliers equal footing with international suppliers if their prices are within a stated percent of the international suppliers' prices; however, the contractor's evaluation of any in-country suppliers' ability to provide the required quality of services and products within the time that international suppliers can provide acceptable products also comes into play.

### **4.3.1 Possible Mitigations**

If the intent is for the owner to approve a change order for any additional time and/or costs if it forces the contractor to procure from an alternate source country pursuant to ECA requirements, the contract should clearly so state.

If the contract does not assign responsibility to one party or the other, any contractual ECA provisions will almost certainly lead to protracted negotiations between the parties on the ECAs' impact on the project, which will delay the project and add costs associated with the delays.

Mitigation actions to reduce these risks include selecting the smallest possible number of ECA financing organizations from the smallest-possible number of countries/regions. This strategy would minimize the potential number of source areas from which the contractor must procure target values of goods and services. To the extent that selected ECAs represent highly-developed countries/regions with ample qualified and competent equipment and material suppliers, the risk that the contractor will be adversely impacted will be reduced.

To the extent possible, the owner should negotiate with potential ECAs prior to making financing commitments to define and limit, to the extent possible, the areas in which the financing parties' engineer will have access to the contractor's day-to-day work processes and procedures. It would also be advisable to pre-qualify potential ECAs on the basis of requiring them to work together to minimize the number of different financing parties' engineers are assigned to the project, with the goal being to have a single person represent all ECAs on the project. Because the owner has little control over ECAs, this potential mitigation may be difficult to impossible to achieve.

It is unlikely that the owner will be able to successfully contract the risk of project impact from the financing parties' engineer away from the owner and onto the contractor.

### **4.4 RISK OF INTERFERENCE AND DELAYS FROM OTHER CONTRACTORS**

This risk exists on any project with multiple contractors working on site at the same time. The risk is unavoidable unless the owner is willing to award multiple scopes of work to a single contractor. On large and complex projects, it would probably not be wise to award most or all of the on-site work to a single contractor; hence, the risk of interference is essentially the lesser of two risks—the risk of interference between contractors or the risk of a single contractor underperforming or encountering cost overruns that exceed its capacity to absorb losses.



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It is advisable to put overall project interface coordination under the owner's responsibility where there are multiple contractors on the site at the same time. The owner will be in the best position to manage interfaces than will be any one of the multiple contractors at site, particularly when the main contractor has no contractual relationship with other contractors working for the owner at the site.

There is inherent risk of interference and delays from other contractors due to:

- Other contractors being late in delivering required interface information to Contractor;
- Other contractors' competition with the main contractor for limited labor resources from the local community labor pools, suppliers, and subcontractors;
- Other contractors' competition with the main contractor for use of limited construction equipment available at and near the project site; and
- Other contractors' delays in completing their respective scopes of work, which may limit the main contractor's ability to perform work associated with the other contractors' scope, such as completing tie-ins at interfaces and timely completing final punch list work leading to pre-commissioning and commissioning activities.

This is not an exhaustive list, but it serves to demonstrate that the main contractor and other contractors at the project site will probably have ample opportunities to claim against the owner for the owner's alleged failure to correctly and/or timely manage project interfaces and to manage the overall project to ensure that no other contractor(s) cause delay and/or cost impacts to the main contractor.

#### **4.4.1 Possible Mitigations**

The owner should hire a world-class, competent Project Management Consultant Contractor to assist the owner in managing the overall project and its myriad interfaces.

The owner can also mitigate risks somewhat by implementing a project-wide incentive program involving the main contractor and all other contractors working at the site.

The owner should carefully consider how it communicates potential delays in one portion of a project to the various contractors on other portions of the work. For example, it may become clear that an offsite works contractor will be substantially delayed in completing tankage or utility facilities. The owner would have the option of sharing the delay information with the main onsite works contractor, or conversely, of not doing so. The onsite contractor may be experiencing its own



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delays, but not to the extent that the offsite contractor is delayed. If the owner does not inform the onsite contractor that the offsite contractor is significantly more delayed than is the onsite contractor, the onsite contractor may unnecessarily expend large sums of money on acceleration measures that are successful in mitigating the onsite contractor's delays, but to no avail—the onsite contractor may finish its work on or near schedule and then have to wait for the offsite contractor to finish the offsite and utility works before the onsite contractor can commission the facilities located in the onsite work area. The onsite contractor's acceleration costs will have been unnecessarily wasted if such a scenario plays out.

The owner may prefer to play a what-if game with the onsite contractor rather than communicate the offsite contractor's delay to the onsite contractor. What if the onsite contractor is not currently delayed at all, or is currently delayed a little bit but not as much as the offsite contractor? If the owner informs the onsite contractor that the offsite contractor is substantially delayed, the onsite contractor may choose to reduce its costs by pacing its work to finish concurrently with the offsite contractor's forecasted completion date. But, what if the offsite contractor is able to mitigate its delays and accelerate its work to reduce the previously-forecasted amount of delay? The onsite contractor's pacing approach may end up putting it at risk of finishing later than the offsite contractor. What if the onsite contractor is not currently delayed, but something should arise in the near term future that causes the onsite contractor's own delay to become equal to or longer than the offsite contractor's currently known delay? Would it be advisable for the owner to keep the onsite contractor in the dark about the offsite contractor's delay so as to keep as much schedule pressure on the onsite contractor as possible, just in case?

These what-if games can become very complex and intertwined. History demonstrates that few owners are able to predict what may happen in the future, but that they are best served by openly communicating current status to all project participants, rather than trying to keep secrets between the parties. Few secrets can be kept for very long on a site where employees of the main contractor and various other contractors live and work in close proximity. The word will get out in some form, regardless of any owner attempts to keep it secret. Once the main contractor is even unofficially aware that other contractors are delayed, the main contractor will begin making project decisions on how best to use the information to reduce its own costs and risks.

In almost all circumstances, it is best for the owner to communicate delays by one project participant to all other project participants, so that there can be a joint approach by all involved parties to solving extant problems and minimizing or eliminating future problems. Failure to communicate known other contractor problems with the main contractor would almost certainly open the owner to supportable claims from the main contractor for time and money in the future. This secretive approach would also at least partially abrogate the potential positive impact of any contemplated project-wide incentive program.



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### **4.5 RISK OF ESCALATION IN LABOR COSTS AT SITE**

Until the first PLA is negotiated and executed, the parties will be unsure of the actual all-in labor costs that the as-executed agreement will require to be paid. There is substantial risk that the first PLA will come in at higher-than-budgeted costs, and that subsequent renegotiations and renewals of the site-wide PLA will reflect even higher cost increases than currently forecasted. This is a typical pattern at most remotely-located construction sites physically removed from major populations of skilled and semi-skilled labor. PLA negotiations often include discussions and negotiations of atypical requirements, such as levels of sustainable development (SD) projects to be instituted in the host communities during the coming term of the PLA, and it is not uncommon for disagreements to arise over which local community is served first in implementation of planned SD projects.

Even though all contractors on site are expected to comply with the initial site-wide PLA and future annual renewals thereof, limitations on available labor from the local communities and from other areas of an under-developed country, especially semi-skilled and skilled labor, will lead to competition between the main contractor and other contractors for the limited resources. The situation may be very significantly complicated further by the requirements of any country-wide labor content laws that require high in-country labor content. This substantially increases the risk of cost escalation with each successive PLA renewal negotiation.

Lump sum contracts typically contain provisions that prices and rates are firm and fixed for the duration of the contract. The owner may not be able to fully enforce these requirements. The contractor may be entitled to increases in labor rates attributable to owner-approved PLA labor rate increases. Daily rates for equipment rental for use in performing change order work may be subject to escalation. Any requirement to use local equipment will likely cause construction equipment costs at and near the remote site to escalate. Daily overhead rates for project management personnel and other time related costs will also escalate due to delay, and to the extent that delay is caused by the owner, the contractor will seek increased time-related costs.

#### **4.5.1 Possible Mitigations**

The contract documents should be aligned with the requirements of any in-country content laws to the extent that the owner intends to enforce the in-country requirements on the contractor and the overall project. Also, the contract documents should allow labor rates and construction equipment daily rental rates to escalate as the PLA is renegotiated annually.

### **4.6 RISK THAT ADVANCE NOTICE PROVISIONS MAY NOT BE ENFORCED**

A typical contract contains many requirements for the contractor to timely notify the owner of potential problems as a condition precedent to entitlement for later claims for schedule extensions or financial damages. There is a risk that these notice provisions may not be enforceable, particularly in lesser-developed countries where case law precedent is not established.



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Contractors that fail to comply timely with such formal notice provisions usually argue that the owner was aware of the problems and received “effective notification” or “constructive notice” via participation in meetings, exchanges of e-mails, project monthly reports, and the like. It is difficult to predict which way the trier of fact will rule, but there are many cases where the trier of fact has ruled that contractor entitlement was established or maintained by “effective notification” or “constructive notice,” even if the contractor failed to follow timely the formal notice provisions of the contract.

### **4.6.1 Possible Mitigation**

It may be advisable for the owner to add a general provision stating that the contractor agrees by executing the contract that it will not later be able to sustain an argument for “effective notification” or “constructive notice” via participation in meetings, exchanges of e-mails, project monthly reports, and the like in the absence of formal written contractor notifications as required by the contract.

### **4.7 *RISK OF CLAIMS CAUSED BY OWNER DELAYS IN PROVIDING REVIEW COMMENTS***

For projects that are performed in developing countries, the owner’s and contractor’s personnel are often not co-located during the project design phase. This separation may complicate and delay the owner’s design review and approval work. During contract negotiations, contractors typically attempt to insert a contractual provision requiring the owner to provide review comments on the contractor’s submissions within a given time period, such as within 14 calendar days of owner’s receipt of the documents. This provision gives the contractor an opportunity to initiate schedule delay claims against the owner for owner delays in excess of 14 days in providing comments on the contractor’s documents.

Recognizing this potential delay problem, an owner may then insert the requirement that if it fails to review and comment within the time specified, the submittal is “deemed to be approved” and the contractor should proceed without such review and comment; any owner comments or approval delay should not constitute an owner-caused delay. The owner may also request additional time to review a large contractor package of documents.

With these types of contractual provisions, the owner may request additional time to review a large contractor package of documents, or fail to provide comments after requesting the additional time, and thus cause the contractor delays that may not be claimed against the owner. To the extent that these delays are to critical path work, the project end dates may be affected. The contractor may attempt to argue that these types of provision should not be enforceable, based on their perceived unfairness and one-sidedness in favor of the owner.



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### **4.7.1 Possible Mitigations**

The owner and the contractor should agree on limits of owner document review provisions to set limits in advance on the amount of extra time that the owner is entitled to request and the minimum size of the contractor-submitted packages that shall be subject to any extended time provision. The owner should also include a clause to the effect that the contractor can only submit document packages that can reasonably be reviewed in the agreed review period, say 14 days (*e.g.*, not all P&IDs at once), and establish a limit on the number of packages that can be submitted per week without the owner having the right to receive extended review time.

### **4.8 *RISK OF DISPUTES REGARDING CONTRACTOR'S RESPONSIBILITY FOR COMMUNITY DISTURBANCES***

Typically, the owner is responsible for and the contractor receives schedule relief for community disturbances, except where contractor is culpable for such problems. Because the owner has an inherent financial incentive to find the contractor to be responsible for such problems, these issues are likely to lead to owner/contractor disputes if and when community disturbances occur.

#### **4.8.1 Possible Mitigation**

The owner and the contractor should avoid subjective guidelines regarding determination of responsibility for community disturbances and use a more objective approach to ensure that the owner will not have a financial incentive to decide in its favor rather than in the contractor's favor. Objective guidelines should distinguish the responsibility whether contractor is even partially responsible for the community disturbance, rather than solely responsible.



## EPC Contract Risk Analysis Associated with Onshore Projects in Developing Countries

### About the Authors



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