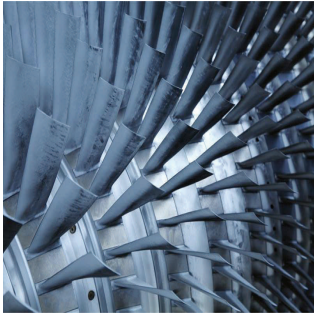




# 10 Things You Need to Know Before Buying a Gas Turbine

*(Lessons from the Field)*

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With almost daily news about the retirement of coal plants, the vast natural gas reserves we have on hand and the lack of certainty regarding the level of future governmental support for renewable energy sources, there is talk of a new boom in the construction of gas-fired power plants. As a result, original equipment manufacturers (“OEMs”) are ramping up production of gas turbines to meet the forecasted demand. Whether you are purchasing a gas turbine for the first time or are a seasoned pro, you will want to consider a number of key issues before entering into a turbine purchase agreement (“TPA”). Negotiating a TPA can be challenging enough without having to think about all of the possible scenarios where things can go wrong. This article will examine several of these key issues and offer suggestions on how an Owner can protect itself from potential pitfalls.

**1. Be sure to include protection for post-signing technical bulletins.** Technical bulletins are a standard part of the gas turbine industry. Among other things, OEMs use them to identify issues that arise in their gas turbine fleet. Quite often, these bulletins will include

recommendations for corrective action. It is not uncommon for Owners to sign their TPA 18-24 months (or longer) in advance of when the gas turbine is actually manufactured and delivered. As a result, updates or corrective action referred to in technical bulletins issued after signing and before delivery (or start-up) need to be addressed. Unless this coverage is specifically included under the TPA, an Owner runs the risk that such a technical bulletin will either not be implemented or will be implemented only for an additional charge. One way to address this issue is for an Owner to ensure that its TPA includes the implementation of any such technical bulletin updates and recommendations as an OEM obligation (at no additional cost).

**2. Structure performance guarantees to be project specific.** Negotiating performance guarantees is one of the most critical aspects of a TPA. While everyone is familiar with the classic five (output, heat rate, noise, emissions and reliability), Owners should think beyond just these criteria, and seek additional performance guarantees that will track the Owner’s specific project needs. Exactly what additional performance guarantees an Owner

seeks may well depend on the criteria that have led the Owner to purchase that particular gas turbine technology in the first place. For example, if an Owner is purchasing a particular gas turbine because it offers quick start-up capabilities, it may wish to seek a start-up guarantee. If being able to ramp up and down in a quick manner is important, then an Owner should consider negotiating a ramp rate guarantee. Tailoring performance guarantees to the Owner's specific project needs will ensure that the Owner is not only getting what it pays for, but will have a gas turbine that performs exactly as intended.

### **3. Have adequate financial security in place.**

One key area many Owners do not spend enough time considering is whether there is adequate financial security in place to backstop the OEM's obligations. Consider a TPA with a milestone payment schedule where 95% of the entire contract price is paid to the OEM by the time the equipment is delivered. This leaves only 5% of the contract price retained by the Owner to serve as security for any liquidated damages for performance or delayed Commercial Operation (*See point # 4 below*). To the extent the OEM becomes liable for liquidated damages in excess of this amount, the Owner will be under-secured. There are a number of ways an Owner can protect itself from this scenario. These include adjustments to the milestone payment schedule, retention, a letter of credit or a performance bond. An Owner should consider any one or a combination of these in order to ensure that it has adequate financial security to protect itself from the risk of collecting liquidated damages that the OEM may owe.

#### **Coordination with the EPC Agreement**

While it may be ideal for an Owner to enter into a full-on lump-sum, turnkey ("LSTK") EPC Agreement for a new facility, market realities often require Owners to utilize a multi-prime contracting approach. Under this method, the

Owner enters into a TPA and a separate (balance of plant) EPC Agreement and has the responsibility to manage both contracts. In this case, there are a number of areas where gaps between the contracts can arise. To best protect itself, an Owner should consider ways to bridge these gaps, with the goal of achieving a virtually seamless implementation.

### **4. Be protected if Commercial Operation is delayed due to gas turbine problems.**

Delays in start-up and commissioning of the gas turbine can cause the facility to fail to timely achieve commercial operation. In the case where an Owner is implementing a multi-prime approach, the Owner needs to ensure that it has some recourse against the OEM with respect to delays in start-up, commissioning or commercial operation caused by the gas turbine. Because the TPA is a separate agreement to which it is not a party, the EPC Contractor is not likely to take responsibility for a delay in achieving commercial operation if this date is missed due to problems under the TPA. One way to address this is to incorporate similar concepts of a "Guaranteed Commercial Operation Date" (with associated liquidated damages) into the TPA. There will of course need to be a link to causation – ensuring that the OEM is only liable for liquidated damages if commercial operation is delayed due to problems arising under the TPA. However, by taking this approach, the Owner will be able to hold the OEM responsible if it causes the delay.

### **5. Coordinate obligations between the EPC Agreement and the TPA.**

Under the TPA, the OEM typically has the obligation to deliver the turbine equipment to the facility site. Under the EPC Agreement, the EPC Contractor typically has the obligation to accept delivery and unload the equipment once it arrives. Coordination of these two obligations is critical. This includes not only coordinating the dates and times of delivery (so that the EPC Contractor can have crews and

necessary heavy lift equipment on site and ready to unload the equipment) but also coordinating the size of the delivery itself. For example, if the OEM unexpectedly arrives at 4:30pm on a Friday, with 8 trucks carrying 100 boxes of equipment, the EPC Contractor can easily be overwhelmed. This can leave the Owner on the hook under the TPA for demurrage and other charges associated with delays in taking delivery of the gas turbine equipment. Including a detailed provision in both contracts that requires notice and coordination with respect to these obligations is one way to avoid this situation.

**6. Address project schedule impacts due to late delivery of minor components.**

It is common for OEMs to guarantee delivery dates for their equipment. However, these guarantees typically extend to “major components” of the equipment only. OEMs often object to guaranteeing the delivery of “minor components,” arguing that they do not want to be responsible for paying delayed delivery liquidated damages because a “few bolts” failed to arrive on time. The problem is, at some point, even those bolts become critical to the overall project schedule. An Owner should pay close attention to how delivery delays are handled, and ensure that even minor components that can cause schedule delays or impact the critical path are not overlooked.

**7. Maintain rights to freely assign the TPA.**

Because an Owner often does not know whether it will be able to utilize a multi-prime or LSTK approach, it needs to allow for the greatest possible flexibility with respect to its right to assign the TPA to an EPC Contractor. However, this may not be as easy as it sounds. More and more, Owners are finding OEMs pushing back on the Owner’s right to freely assign the TPA. Drilling down into the reasons for this resistance may uncover any number of objections. For example, is there a past history of problems between the two parties? Are they currently in a

dispute? Are there concerns regarding creditworthiness? Owners should take the time to work through these issues during TPA negotiations rather than leaving the right to assign the TPA subject to the OEM’s “reasonable approval” at the time the Owner wishes to make the assignment. If details regarding how that approval will be obtained can be worked out ahead of time, it will make things considerably easier when the time comes for the Owner to assign the TPA. For example, consider establishing specific criteria and/or assignment arrangements that, if satisfied, will permit the assignment without further action on behalf of the parties. Or mutually agree to a list of pre-approved EPC Contractors.

**8. Make the OEM responsible for collateral damage during start-up and commissioning.**

A number of gas turbine failures that can occur during the commissioning process will result in significant collateral damage to the gas turbine and quite possibly other components of the facility. While an Owner may have collateral damage coverage under an LTSA, this coverage will typically only apply to damage that arises due to a failure of a part provided *under the LTSA* – not an originally installed part that is provided under the TPA. If the EPC Contractor has procured the Builders’ All Risk (“BAR”) insurance, pre-COD property damage will often be considered an EPC Contractor risk. However, the EPC Contractor will likely object to bearing the deductible risk if the gas turbine is being supplied under a contract to which it is not a party, given its lack of recourse against the OEM. Likewise, if the Owner has procured the BAR, the Owner should consider whether it is willing to bear this deductible risk. This can be a significant cost when one considers that it is not uncommon for the BAR deductible to double or even triple during hot testing. Thus, an Owner should consider negotiating a provision that requires the OEM to bear certain risks – including BAR deductible – associated with

damage to the gas turbine and the Owner's property arising from failures of the gas turbine during start-up and commissioning.

### **Coordination with the LTSA**

It is quite common (and well-advised) in today's market for an Owner to simultaneously negotiate a long term service agreement ("LTSA") to cover the gas turbine at the same time it is negotiating its TPA. This is when the Owner has the most leverage, and should take advantage of it. There are a number of areas where an Owner's TPA and LTSA should align in order to ensure that the Owner is getting the best possible protection. The following points will address two of these areas.

**9. Mitigate the impact of pre-COD hours.** It is common practice for payments under the project's LTSA to be tied to some function of gas turbine hours and/or starts. Because gas turbines accrue both hours and starts during start-up and commissioning, the Owner will typically be expected to pay for these hours and/or starts under its LTSA before the project has achieved commercial operation and generated any significant revenue to offset this payment. This has the potential to create a headache for the unwary Owner who is suddenly hit with what could be a significant invoice under its LTSA for variable payments tied to pre-COD hours and/or starts. Owners should make sure that their project model accounts for payment for these pre-COD hours/starts, and consider ways to mitigate the impact to the bottom line. For example, perhaps these payments can be deferred until after COD, when project revenues are more certain.

**10. Bridge the warranty gap to ensure uninterrupted coverage.** Typically, the warranty period under a TPA will extend for a relatively short period (e.g., 1 year after COD). If the Owner has an LTSA in place, it will likely only cover warranty failures for parts that are provided *under the LTSA* – not originally

installed components that are provided under the TPA. As a result, an Owner could be faced with a gap in warranty coverage – with no warranty protection during the period between when the warranty under the TPA expires, and the time when new parts are installed under the LTSA. Taking steps to bridge this gap will be crucial for ensuring that the gas turbine parts are always covered in the case of warranty-related failures.

### **Conclusion**

These tips cover just a few of the many areas where Owners will want to focus when negotiating a TPA. Unfortunately, despite hoping for the best, things can and often do go wrong. Experience has taught us that by addressing these and other issues head on in their TPA, Owners can avoid these potential pitfalls and the many problems that accompany them.

*About the author: Jason B. Yost is a partner in the law firm of Mercer Thompson LLC. He concentrates his practice on representing both regulated and non-regulated infrastructure and energy companies in all aspects of domestic and international project development and finance, including in their development, acquisition and sale, and ownership and operation of projects. He has extensive experience drafting and negotiating equipment procurement agreements (turbine and balance of plant), engineering, procurement and construction (EPC) agreements, long term service agreements (LTSAs), operation and maintenance (O&M) agreements and asset purchase and sale agreements (ASAs), as well as finance documents for project development and finance transactions. His experience includes projects deriving electric energy from gas, coal, solar and wind energy sources.*