Today several of the major wind turbine manufacturers offer long-term OMS contracts with coverage for scheduled and unscheduled maintenance, with all spare parts and components included, and even an availability guarantee.

This should in theory cover the client’s investment for most financial and operational risks and our experience is that the OEMs have trained their clients well – as today, most long-term service contract holders fail to see the importance of diligence in technical and operational aspects.

This means that many feel they do not need to analyse, inspect or in any other way be involved in the technical and operational aspects of their turbines because as they say; we have a 15 year warranty and maintenance contract and we are covered by these contracts in all aspects and doing further to assure safe operation and maximize output from the plant is not needed as there are insensitive payment structures that will motivate the OEM to do this for us.

However, one of the issues is that the wind turbine market is suffering, and several of the wind turbine manufacturers are operating with losses and have difficulties servicing their debts.

Imagine that your service providers are in default and the service has not been done according to the schedule, industry standards and service manuals – or at all, for that matter. This could be the result of a company in financial crisis and if you, as a turbine owner, do not perform periodic quality assurance on power output as well as the technical aspects of the turbines, you may not detect this neglect of your assets until it is too late. But by staying on top of your warranty and service provider you have the ability to take appropriate measures in a timely manner and if needs-be, make use of the bank warranty, which is used to back the warranty and service contract.

The trouble here is that most of these contracts have a cap of 5%-15% of the EPC purchasing price or the yearly value of the service contract. If your turbines were operating for any real amount of time at a compromised state or the service had been neglected, you would quickly cap out on compensation, and by diligently monitoring the work in the field you will never be more than one quarterly payment out of pocket and as such you are able to minimize your losses.

I am not saying that any of the larger OEMs will fold in the foreseeable future, but if they do can you afford to take over the cost of operation and potentially the need to perform capital investments in fixes such as gearboxes or generator replacements out of pocket? Remember, the service provider should be the one setting aside means for this type of situation from your quarterly or annual payments.

In a market where the OEM’s are continually moving into longer and longer maintenance contracts, it becomes increasingly important to make sure the contracts are backed by bank warranties and that your turbines are always in the best possible condition. Even when looking at turbine aged 10-20 years this should be the case; and when we travel to different wind sites around the world the picture we see is
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vastly different and a workhorse turbine in Germany bears no comparison to some turbines we have seen in other European, Asian or American countries.

I do not believe that this is down to the abilities of the technicians or the OEM’s ability to fulfill their obligations, but more that the mentality from the owners are very different, meaning that if you do not stay on top of your own assets and continuously pace your maintenance provider to give you the best possible service and make any remedies in a timely manner you are teaching them to cut corners.

I think that Germany serves as a good example of how it can be if you, as a client, stay committed to documenting and assuring all aspects of the turbine operation. We know that traditionally Germany has always set the benchmark for periodic inspections, quality assurance and general asset management. As this is a deep integrated part of the German work culture, the turbines in the field show the signs of this.

In most other markets you will need to show your presence and determination to get the most from your OEM maintenance provider.

So if you are a turbine owner operating turbines in more than one country it is extremely important to understand the different maintenance mentalities of the countries you operate in and act accordingly.

This is naturally generalizing quite a bit but in most cases it holds true, of course there is also the aspect of third party maintenance and of course the option of the OEM using these same third party companies to facilitate the need for maintenance in smaller markets and in remote locations or in the case of Vestas where many smaller turbines from the Vestas group of companies (Nordtank, Micon, NEG-Micon, Wind World) have been dropped and a small selection of third party maintenance companies have been positioned to take over the maintenance obligations.

In several of the OEM type service and maintenance contracts, the service provider gives an availability guarantee for the up time (time where the turbine is ready to produce power)

The calculation of the availability includes several things, but basically you can say that all stops and shutdowns of the turbine caused by faults in or by the turbine itself will reduce the availability of the turbine.

If the availability gets below the guaranteed number, the service provider will have to pay compensation to the owner.

By looking at the above it seems to be an easy task to calculate this compensation but it is not!

Let’s take the example where the turbine stops by phase asymmetry. This is typically categorised as a grid fault and should not have an impact on the availability number, but it could also have been caused by problems internal in the control or converter system in the turbine and it should then have been categorised differently.

A good question to ask is how many hours you can accept that your turbine is stopped for scheduled service every year. For most of the turbines, they require two scheduled visits per year and typically you will have the turbine stopped for 20-40 hours for this work to be carried out.

If your turbine is stopped due to a fault is the downtime for repairing the turbine registered as turbine fault or a scheduled maintenance?

By analysing the monthly availability reports and looking into all fault events these things can be corrected and the availability numbers could be calculated correctly.

Another issue could be that the turbine is running at limited capacity or that the small generator is disconnected. On the availability report the turbine will be, running ok but there will be missing productions and the service providers should be responsible to pay compensation.

We have seen several examples of turbines that have been too noisy and noise-reduction programmes have been uploaded in the turbine’s software. The noise-reducing mode is limiting the output from the turbine and a lower production is the result of that. The turbine is now running without reduced availability but for a reduced output capacity as well; in cases where an owner has identified low production on a unit and traced it back to noise curtailment of the turbine, many have received compensation in the form of a cash settlement. Naturally this is only applicable if the turbine was purchased from new and if the turbine was meant to produce nominal capacity without reaching the noise limits.

This article does not highlight all, but most of the parameters you should take into consideration when renewing or managing your long-term service contracts.

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