

What would work for your company in terms of increasing power output? It's very difficult to give a straight answer to that question - as it depends.

There is no standard solution on how to increase power output and there are many related topics that needs to be included.

From O2O WIND's more collaborative perspective, the best approach to help wind asset owners to advance on this topic is to present a wide selection of case studies where wind asset owners give a short presentation for what has worked for them.

On the 23<sup>rd</sup> of November 20 wind asset owners are presenting 20 case studies on how they have managed to increase power output.

## The next coffee break with your colleagues in operations



On your next coffee break with your colleagues in operations, ***print this document***. Go through the 17 questions found on the next page.

Has your company done any projects that are in-line with any of these questions?

Great! That will be the entrance ticket for you and all the colleagues within your company.

As for now please indicate a possible headline for your presentation and also let us know which of these 17 questions that your presentation will touch upon.

**Suggest a case study** – please [click here](#).

Please use these 17 bullets as Inspiration to help you remember any projects you have done within increasing power output:

1. Does your company have experience for how an initiative to increase of power output has affected the life of electrical main components?
2. Has your company experienced the downside of upgrades in terms of potential risk of blade damage, load increase on drive train etc - any specific cases where upgrades have caused unexpected side effects?
3. Does your company have experience in the area of using reactive power consumption during low wind periods, to improve revenue?
4. Has your company found a method to investigate poor yaw misalignment?
5. Any experience from when the default pitch settings couldn't be trusted, even if the contractual power curve is respected. Does anyone have experience with achieving further improvements through software modifications to change the pitch strategy?
6. Does your company have experience on how the OEMs use the wind speed sensors to perform power control, any insights?
7. Does your company have experience for when an increase of output lead to the necessity for the owner to re-agree connection to the grid conditions because the facility generates more power that it was declared?
8. Does your company have experience for how to achieve the correct north-orientation of the WTG, so that the measured yaw direction is correct?
9. Does your company have experience on how to effectively use SCADA data to analyse turbine underperformance?
10. One of the major challenges is ensuring that the OEM achieves the contractual Availability guarantee.
11. Does your company have experience on how to make sure that the OEM achieves the contractual Availability and how to focus on this bottom line through contractual agreements with the OEM?
12. Does your company have experience on how to approach concerns around the performance of a particular turbine at the knee of the power curve and how outputs may be increased and furthermore how to approach the OEMs in such power performance concerns.
13. There are many "power-ups" offered by various manufacturers in the post-warranty phase of the wind farm. Several power-ups may conflict with lifetime extension plans, i.e., possible more power now and less life after 25 yrs. Does your company have experience on how to do a realistic test to verify the theories from the manufacturer?
14. Does your company have experience on how to accurately measure power performance in an operational environment where a high degree of curtailment applies?
15. Does your company have experience on how analysis of alarms contribute to strategies for increasing power output?
16. Wind Speed measurement appears to be a black box. For example, why does a particular turbine sometimes seem to behave differently to its' neighbour? Does your company have any cases where you have figured out how the wind speed is corrected, to the influence of the wind Speed Transfer function and how much this affects underperformance?
17. Does your company have experience on how to of static pitch (mis)alignments as a cause of power production loss?