

Copenhagen Offshore Wind 2005

Turbine access – now and in the future

The logo for Vestas, featuring the word "Vestas" in a stylized, italicized font with a registered trademark symbol, positioned on the right side of a dark blue horizontal bar.

Is it necessary to invent an access system?

If yes: why!

It should add some value to the existing method such as:

- safer access
- access in more adverse weather



- There are two ways of accessing an offshore turbine:
 - By helicopter
 - By vessel where access from vessel to wind turbine can be challenging
- Today and the future – according to Vestas



Vestas

Safer access

- Will it actually provide safer access?
 - Today's system is based on a simple method relying on one factor only.
 - Vestas has performed more than ½ a million transfers by the "Maersk" method without any accidents.
 - Some systems will imply higher "risks" of errors.
 - Many people say if an accident happens with the existing method, what then? Our answer is - what if an accident happens with an "access" system!



Access in more adverse weather

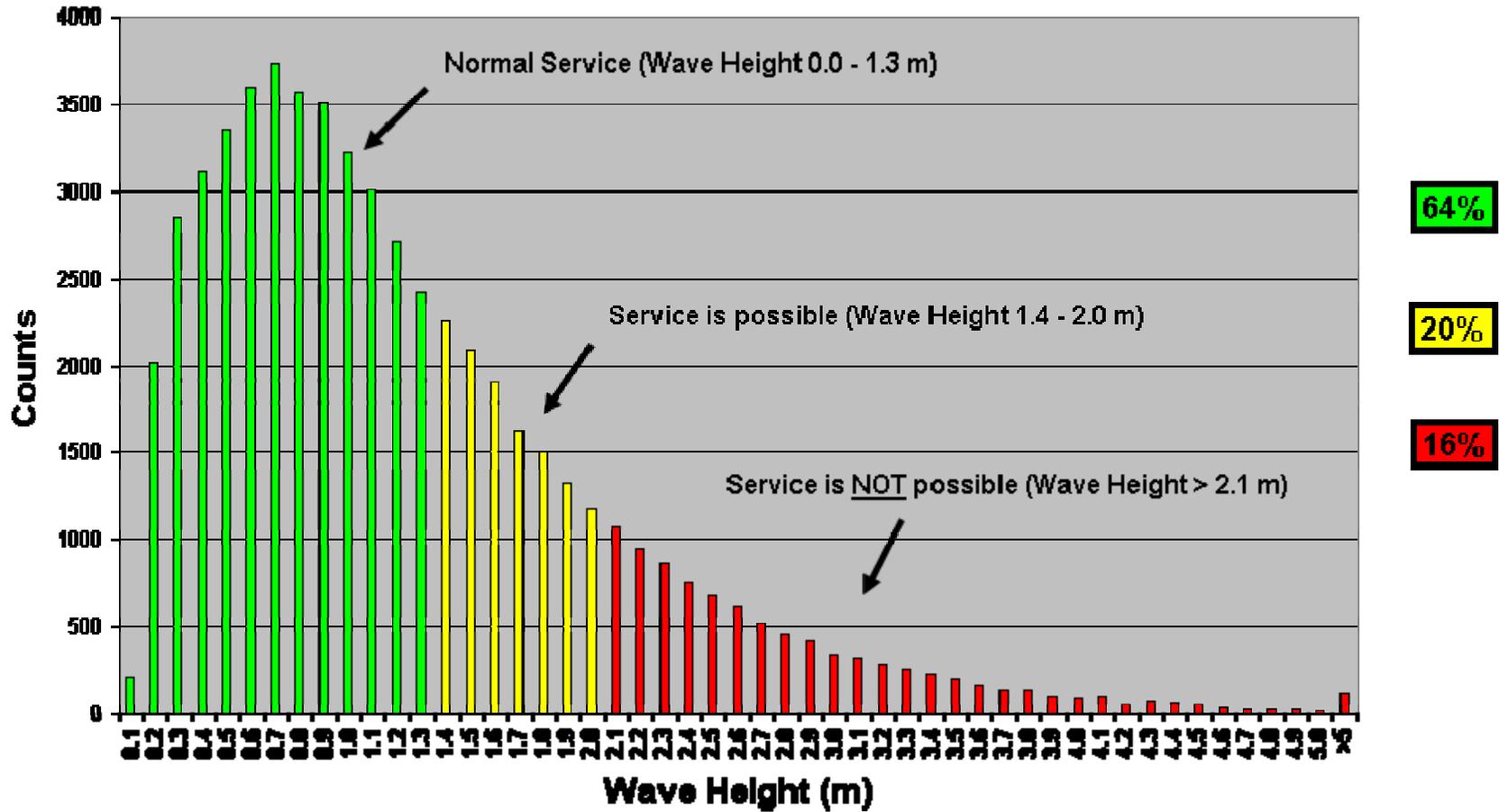
There is a lot of focus on a system to provide access in more adverse weather than today!

- Is that a goal? The journey out there will be very uncomfortable and the technicians are not seamen
- How much will a new system actually be beneficial compared to today!



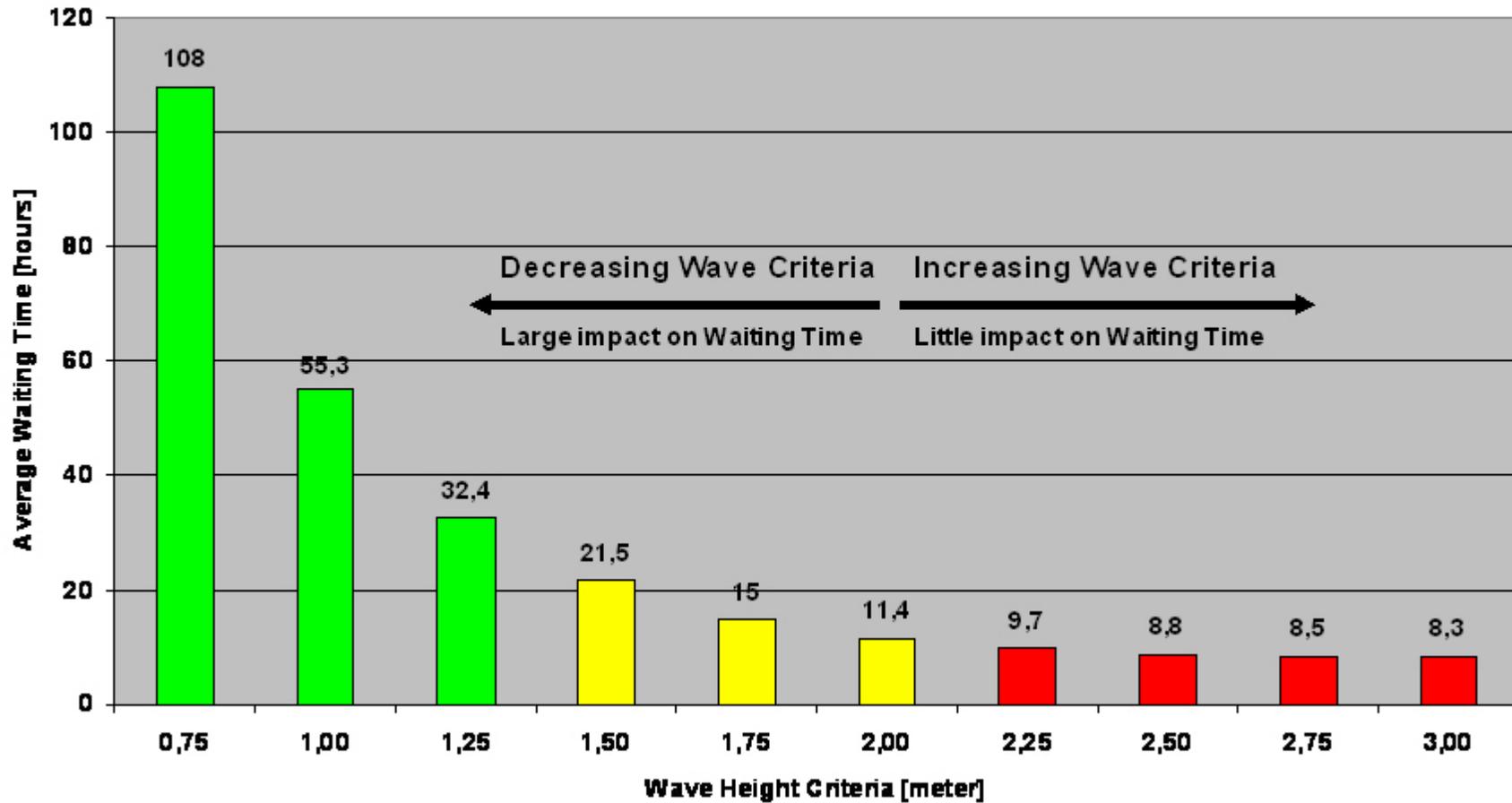
Wave statistics

Wave Statistics - 1979-1998: Significant Wave Height (Hs)



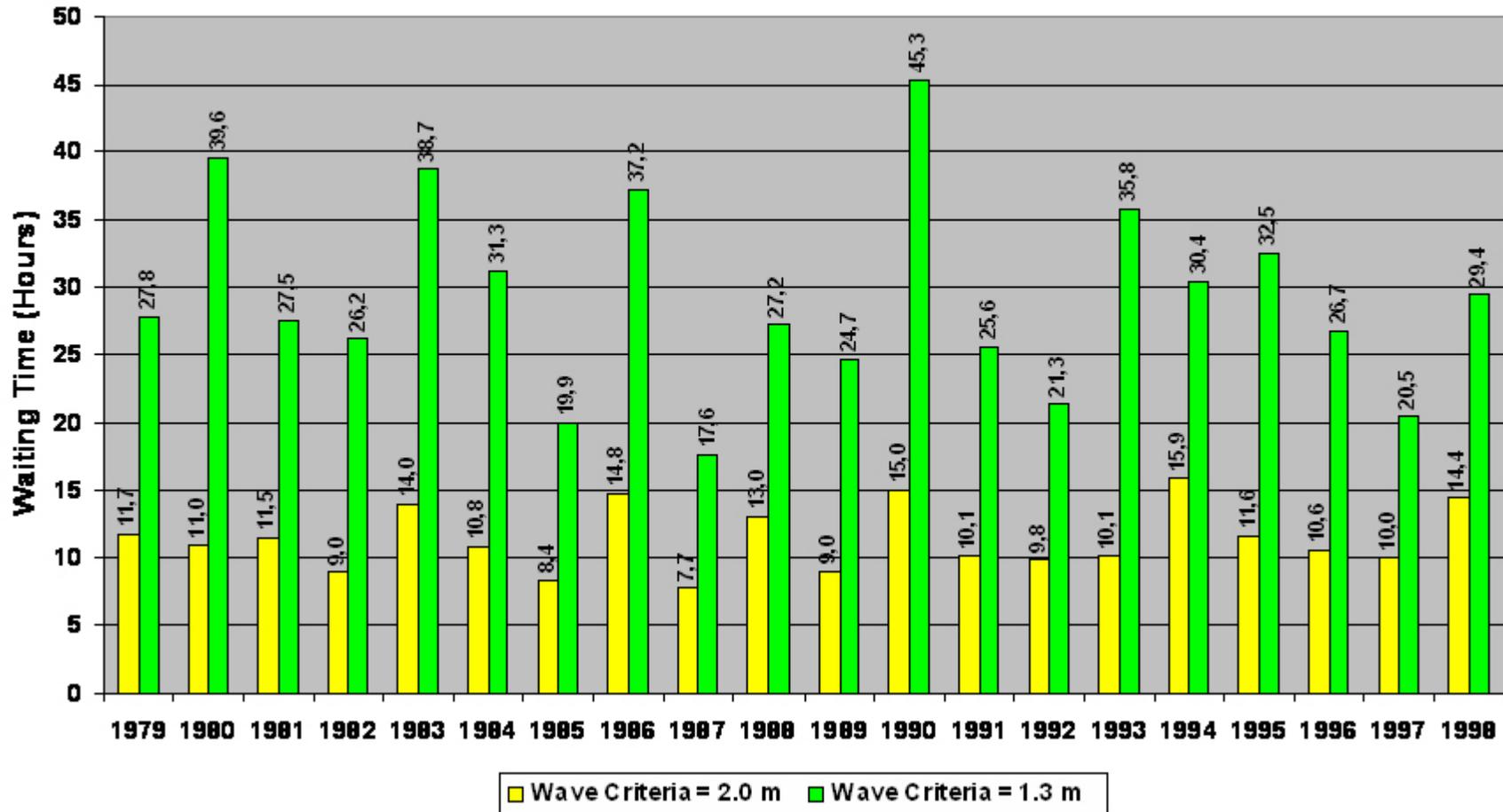
Average waiting time

Average Waiting Time as a function of Wave Height Criteria



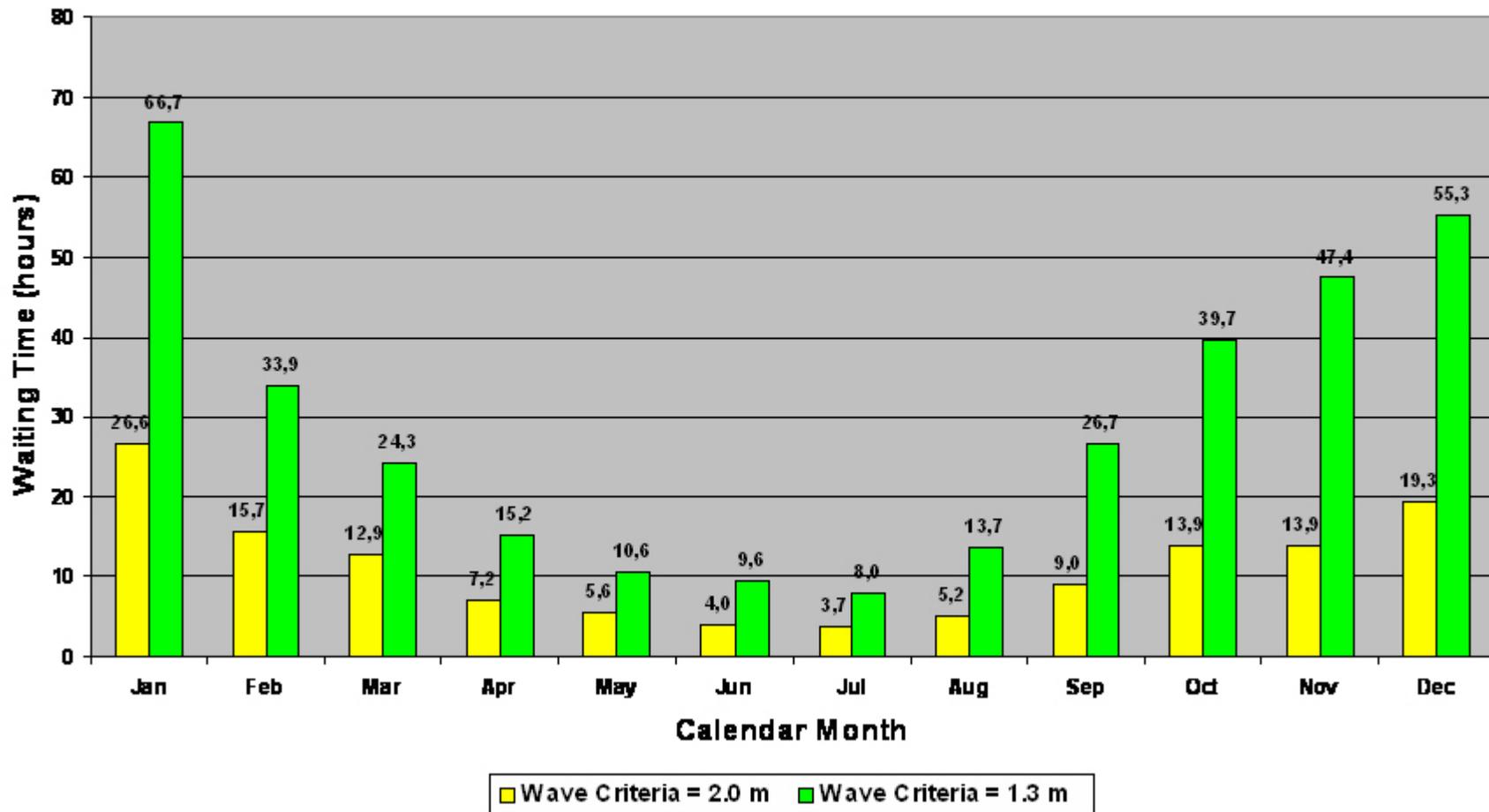
Waiting time - Year

Waiting Time as a function of Year



Waiting time – Calendar month

Waiting Time as a function of Calendar Month



Requirements to a system

- “Single system” means based on the vessel
 - We do not want to maintain xx systems offshore
- Investment
 - Cost benefit analyses to be made
- Low weight
 - The system’s weight will reduce the vessel’s load capacity
- Easy/inexpensive maintenance



Requirements to a system



Conclusion

- Vestas has, of course, seen all the ideas on new systems that are out there. We feel, however, that nobody has yet proven that they have the right system
- Vestas' message is "Don't invent a system for the sake of the system, and make sure it is beneficial"
- Vestas believes that at present it's worth putting more focus on developing the vessels further
- Yes, there will eventually be a system, but until then Vestas believes in improving what is already there!

