Power curve, energy yield, and customer value

EWEA Resource Assessment Workshop
Dublin, Ireland, 25-26 June 2013

Henk-Jan Kooijman
GE Power & Water,
Wind Farm Engineering

imagination at work

GE commitment

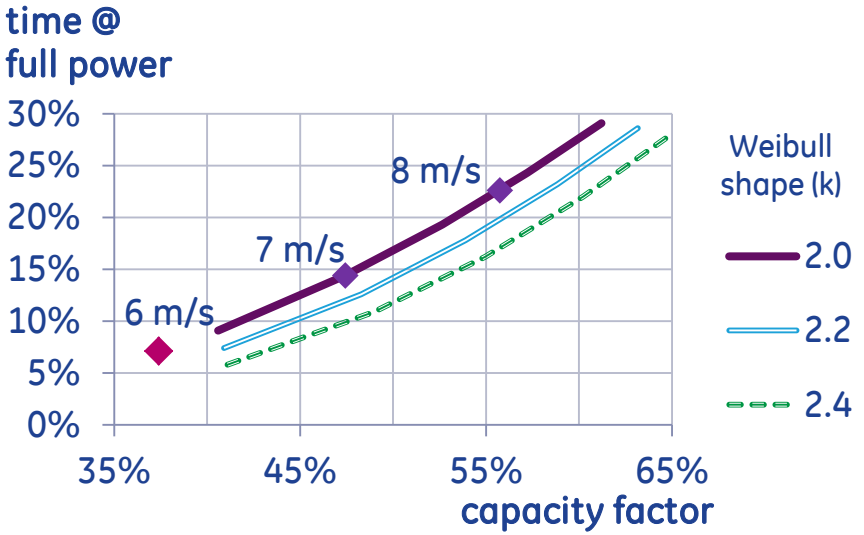
Our goal is to maximize the value of the wind farm for the customer based on safe turbine operation over the entire design life-time combined with the 'highest' energy revenue stream.

GE hereby considers turbine position-specific wind conditions, normal power production, and ultimate loads, ensuring that these meet the system and components design envelope.

Wind farm revenue stream

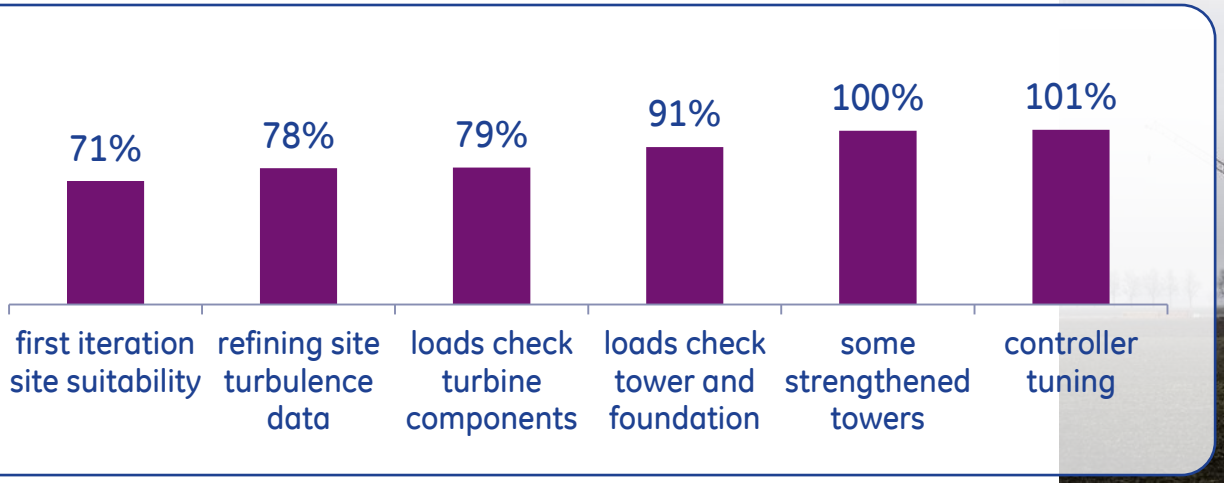
Reliable estimation of wind farm performance importantly depends on:

1. High-fidelity wind forecasting, e.g. using meso-scale and CFD
2. Accurate prediction models, i.e. micro-siting and turbine aero-elasticity, and controls
3. Site-specific power curves and AEP variability reduction; think of:
   - Variable feed-in tariff
   - Battery storage
   - Enhanced predictability of energy yield with turbine capacity factor
   - Eliminating curtailment



Summary

1. Turbine power curve is one element of the wind farm value proposition
2. More sophisticated analysis can significantly increase gross AEP



imagination at work

Thank You

imagination at work