



EchoBolt

BOLTED CONNECTIONS

HITTING THE TARGET

Pete Andrews





Wind Turbine Fastener Inspection

- Eliminate retightening
- Improve safety
- Reduce costs
- Increase production

RWE



TÜVRheinland®
Risktec

GE Renewable Energy

Worley
energy | chemicals | resources

Ørsted

sse

The SSE logo features a stylized green and blue flame-like graphic next to the lowercase letters "sse".

 Deutsche
Windtechnik

The Deutsche Windtechnik logo consists of a blue double-headed arrow icon followed by the company name in a bold, sans-serif font.

VATTENFALL 

The Vattenfall logo features the company name in a large, bold, dark gray sans-serif font, with a small circular emblem containing yellow and blue horizontal stripes to the right.



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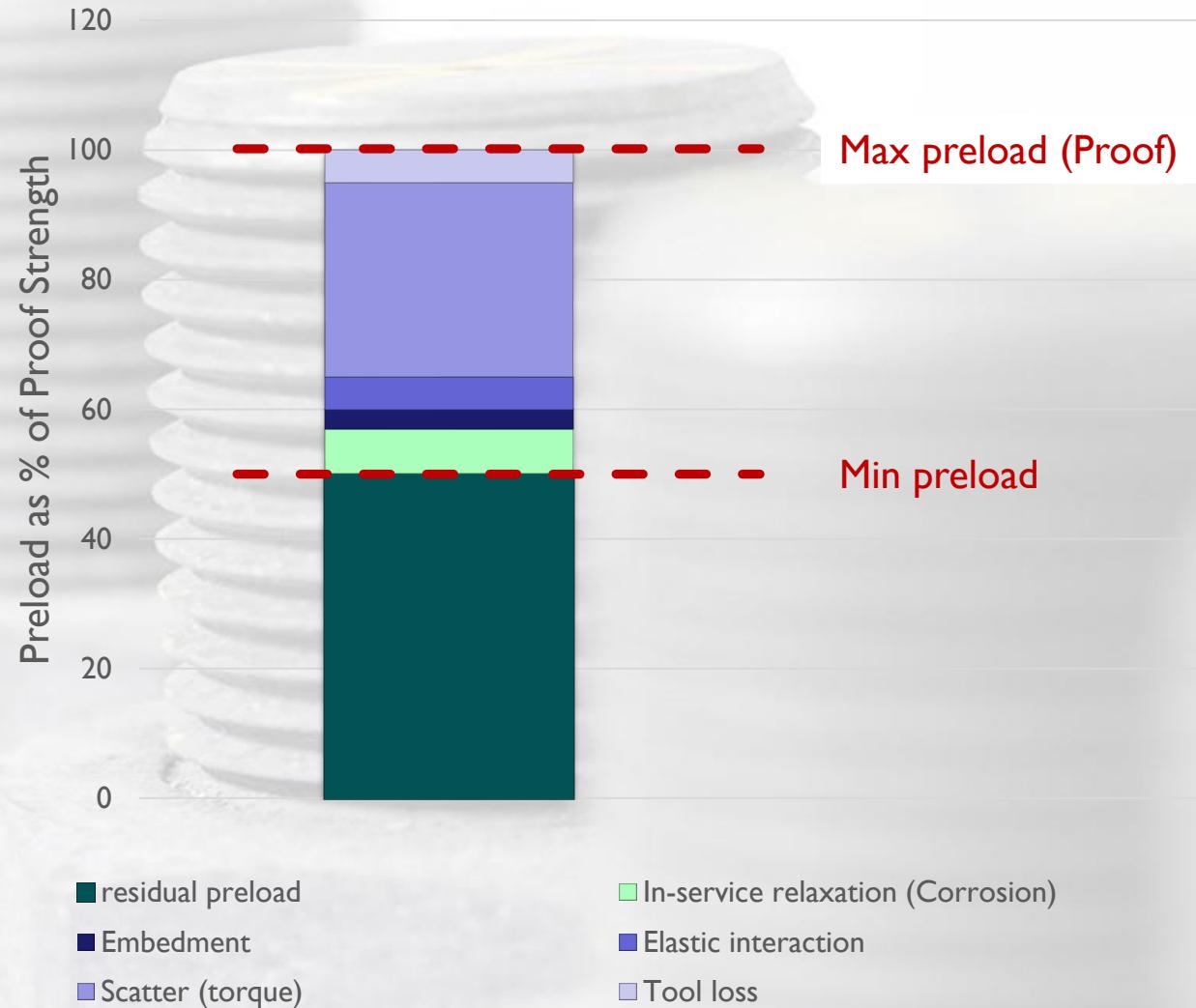


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WHY STRUCTURAL FAILURES OCCUR

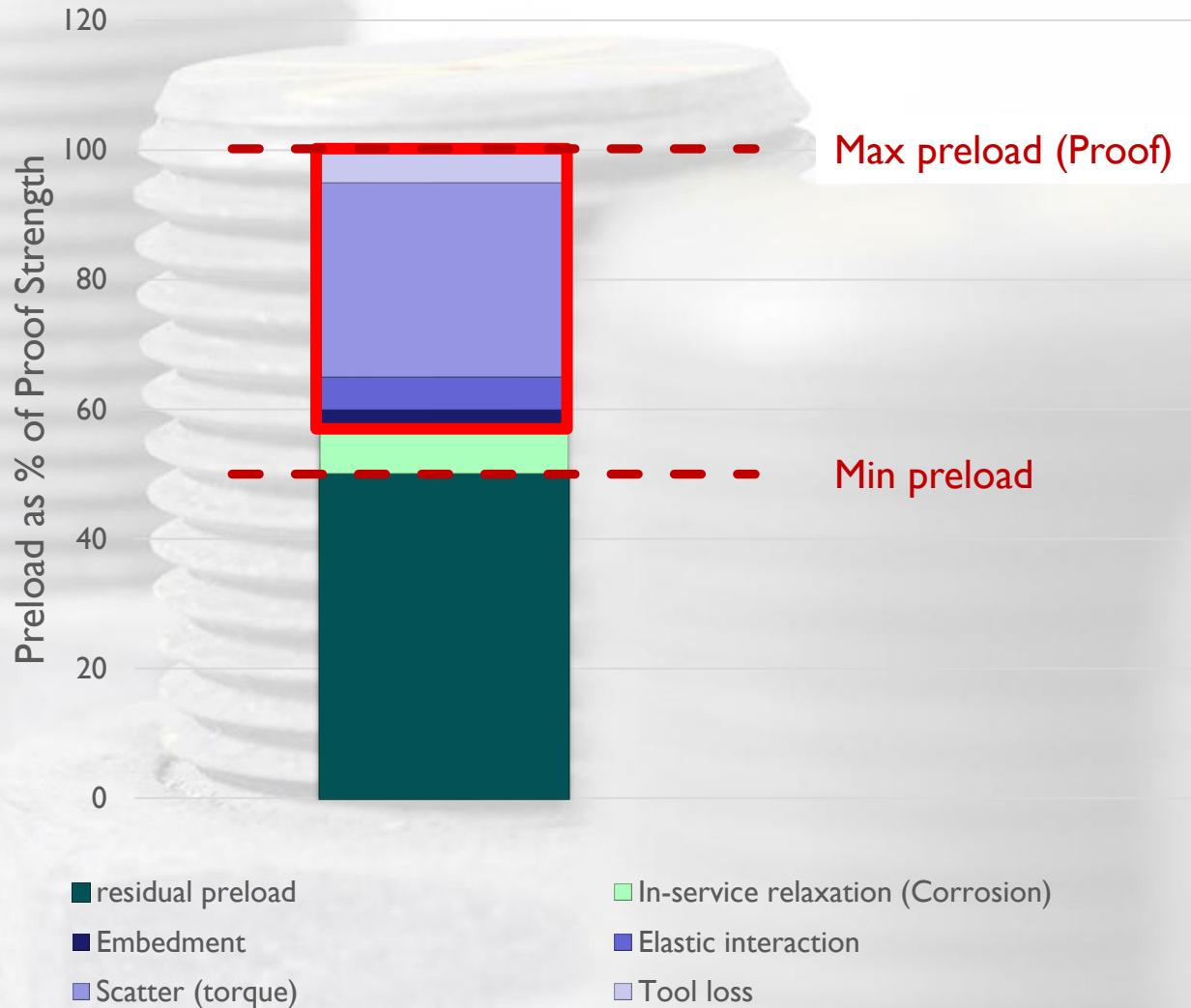
PRELOAD LOSSES





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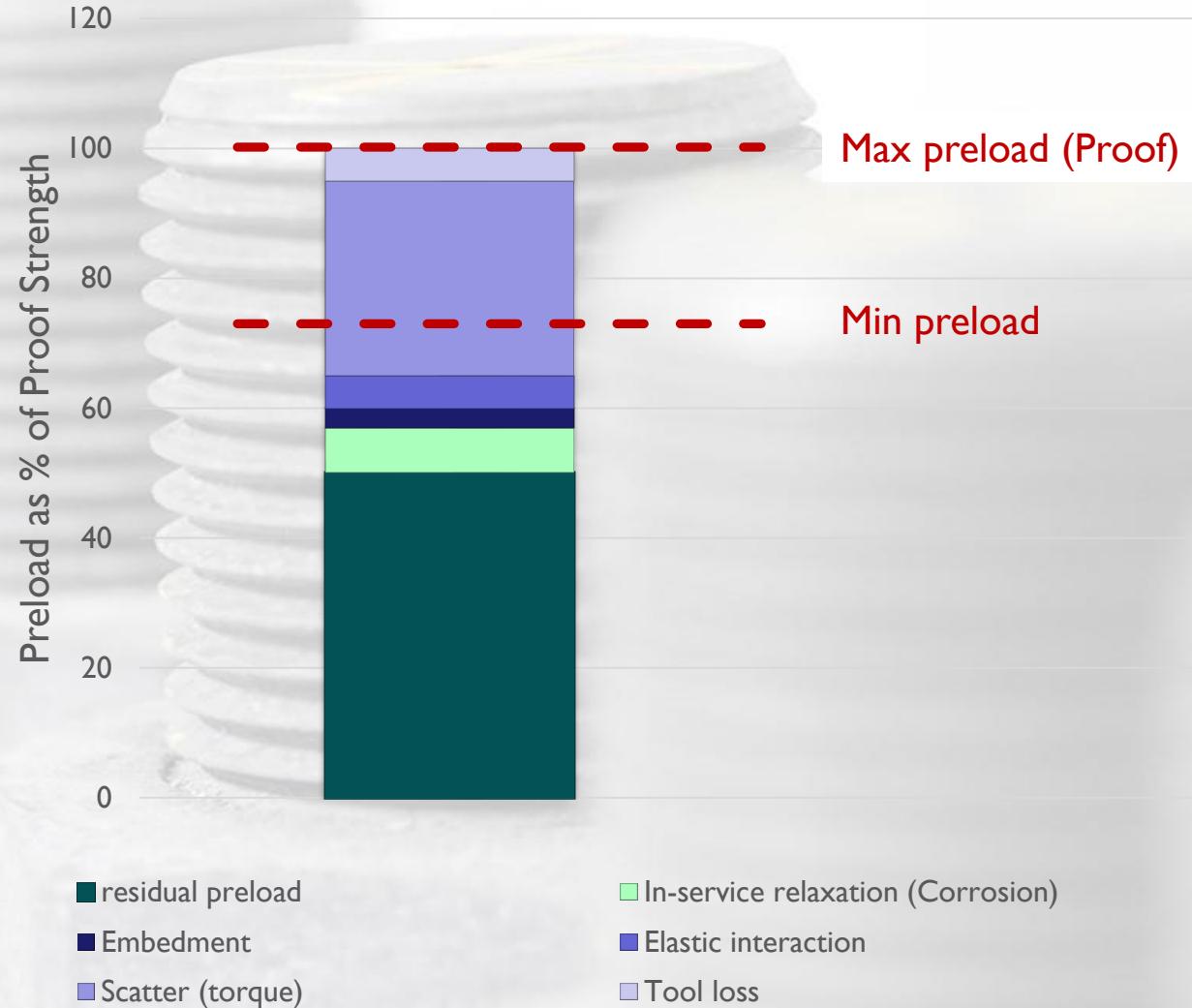
PRELOAD LOSSES

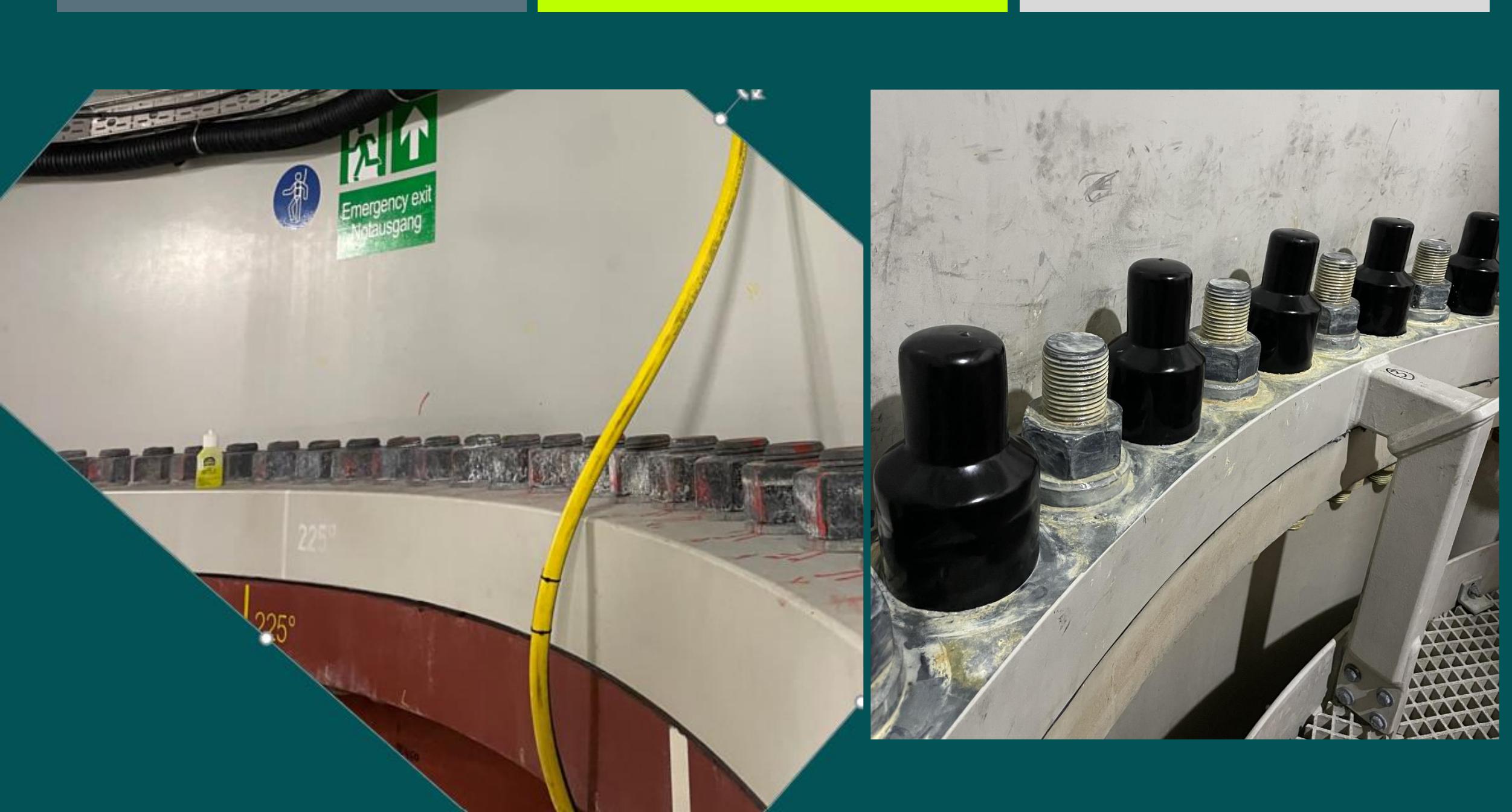




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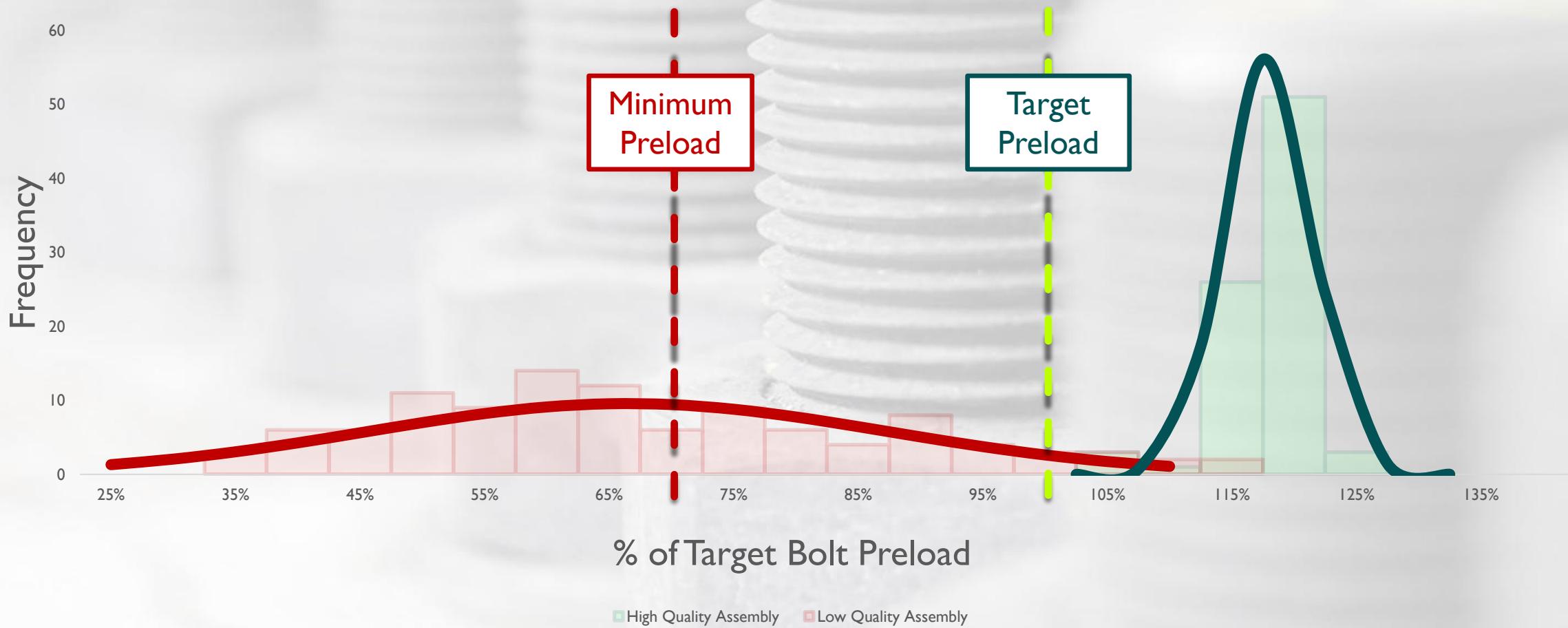
PRELOAD LOSSES





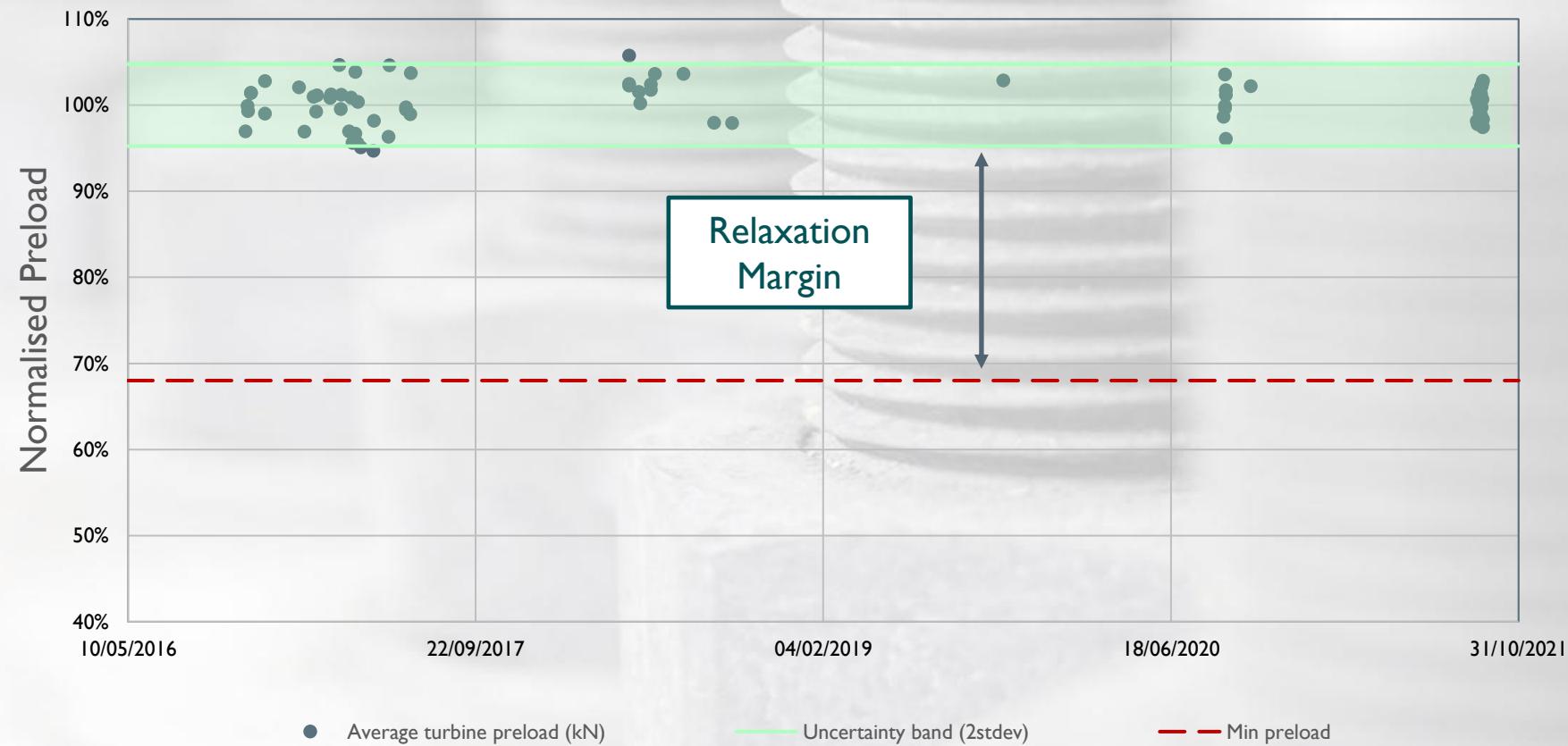


SCATTER WITH DIFFERING INSTALLATION PRACTICES





CASE STUDY – 5 YEARS PRELOAD MONITORING





Preload validation in the
operational environment
is key!!



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