Managing Asset Life

Challenges for Offshore Wind

Dr John Edwards – Materials & Corrosion Engineer – Kent plc

Foundation Ex – 20th May 2025

John.Edwards@kentplc.com

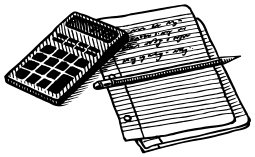
kent

Philosophy 2000: 25 Years Ago

What is a design lifetime?
- Calculated fatigue life, corrosion allowances, CP systems, maintenance…

Designing, building and operating OWG's late 90's – 00's
- What was state-of-the art then?
- Did we know what we were doing?





Designing, building and operating OWG in 2025
- What is state-of-the art now?
- Do we know what we are doing?

How do we get a 00's design to be compatible with 2025?
- Mechanically sound
- Operationally and organisationally sound

Some Aging Mechanisms and Changes

Fatigue
- Fatigue life

Corrosion
- Corrosion allowance

Stress Corrosion Cracking
- 304, 316, duplex, super duplex

Subsidence, scour, pile failure
- Tilting

Cathodic protection
- Anode life

Accidental damage
- Boat collision, dropped objects

Obsolescence
- E&I

Changing operational conditions
- Turbine operation and utilisation plan

Changing environmental conditions
- Metocean data
- Extreme events

Extreme Weather

Porthcothon Bay, UK

Credits: "Mirror" 07 Jan 2014

Operational and Organizational Changes

Lost, missing and inadequate documents

- No management of change
- Undocumented work-arounds
- People Leaving - Loss of Tacit Memory

Operating Philosophies

- HSE policies
- On-site inspection frequency
- New owner/operator, new managing style

Public Concern and awareness

- Environment
- Risk Aversion

Safety

- Currency of HAZIDs, procedures, etc.
- Adequacy of safety systems: detection, mitigation.
- Personnel safety

Things do change over time : sometimes gradually so we don't notice

Thank you