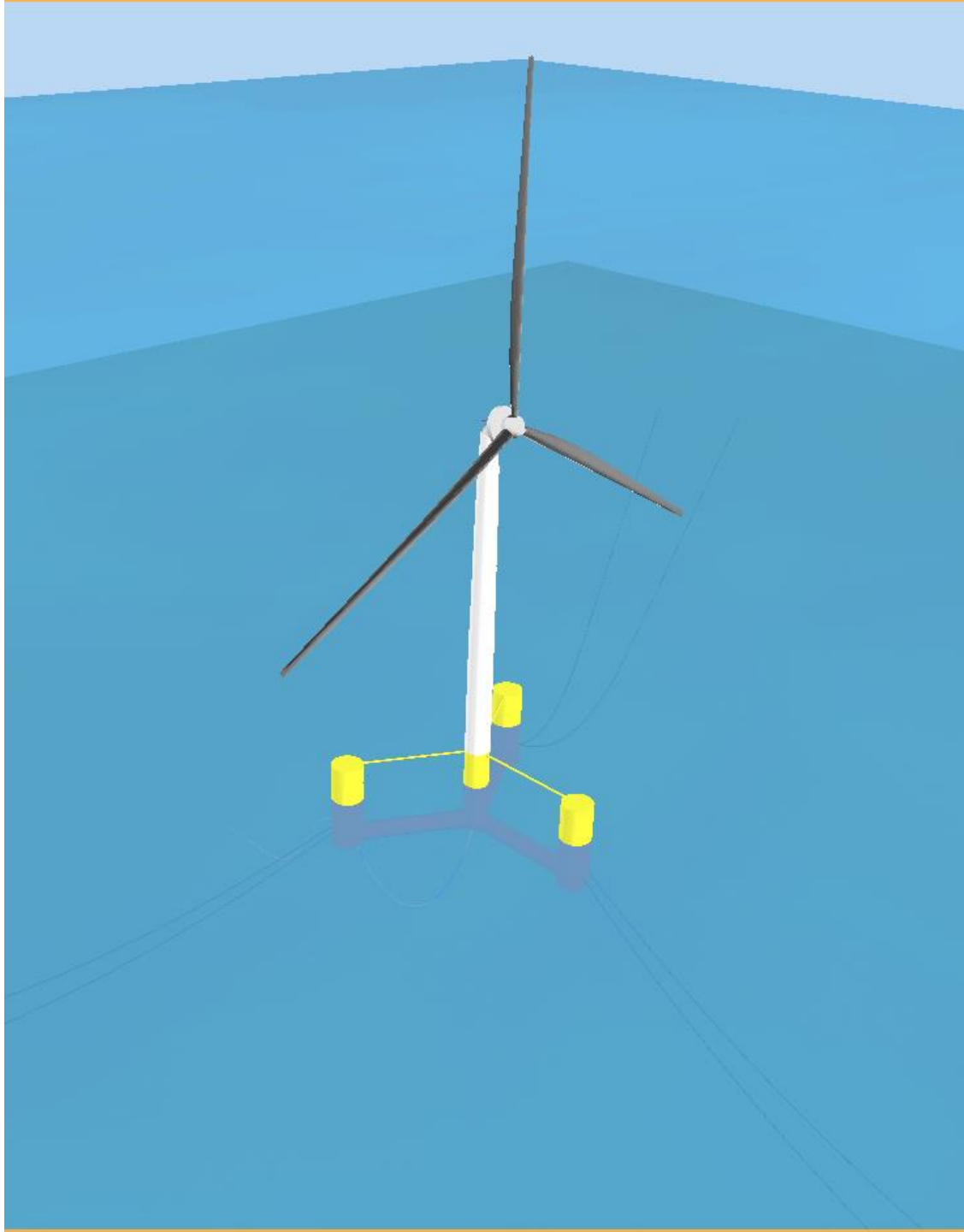
wood.

Flexcom Wind Assessment of a Novel Dynamic Array Cable Configuration to Reduce Installed Cost

Jamie McCallum

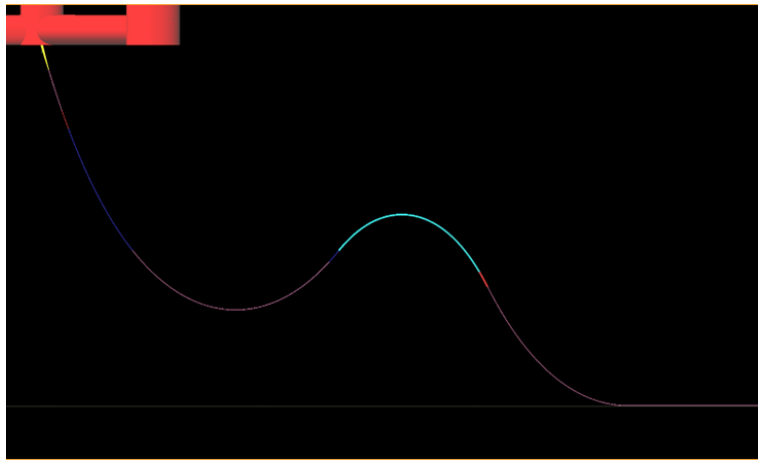
All-Energy 2023



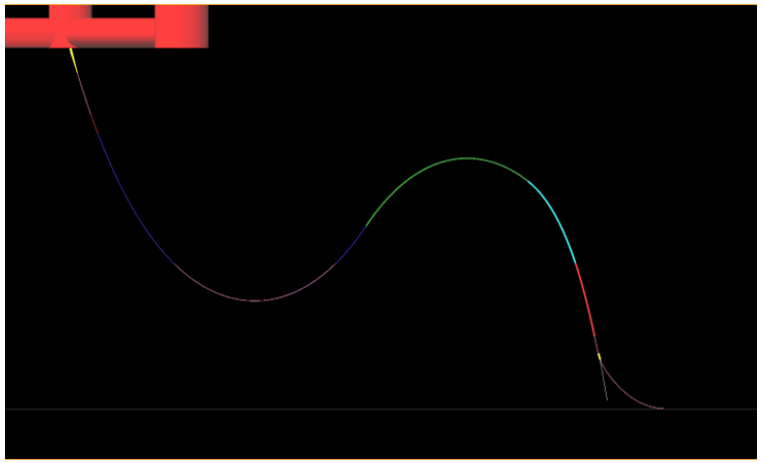
Track Record Spanning 40-Years

wood.

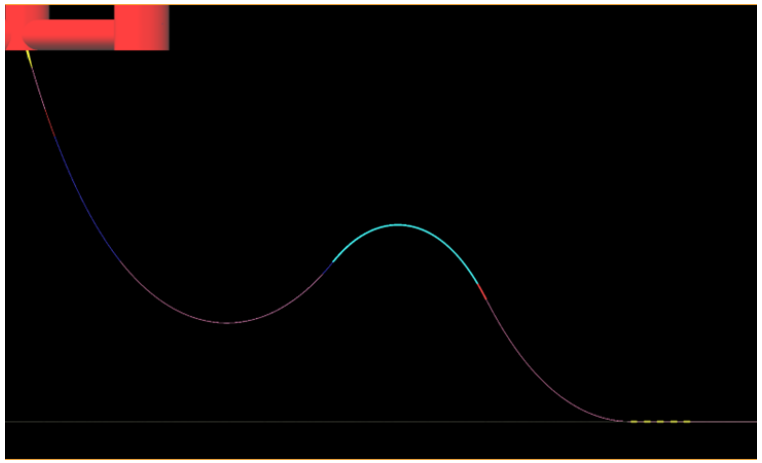
Dynamic Cable Configuration Options



- Lazy Wave
  - +Simplest solution
  - - Touchdown point motion



- Tethered Lazy Wave
  - +Touchdown point control
  - - Hold down structure
  - - Increased buoyancy
  - - Increased bending protection



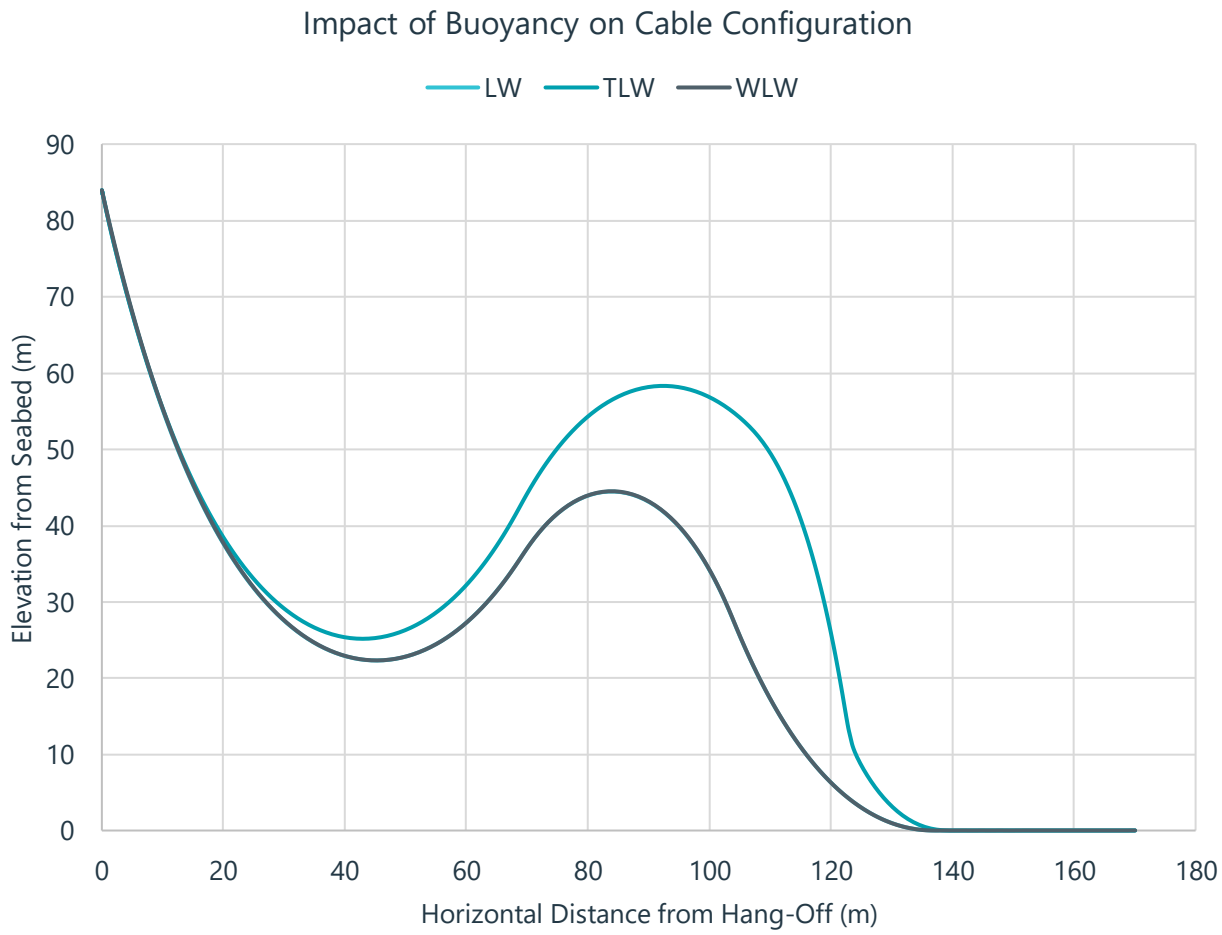
- Weighted Lazy Wave
  - +Touchdown point control
  - - Ballast modules

Touchdown Point Motion

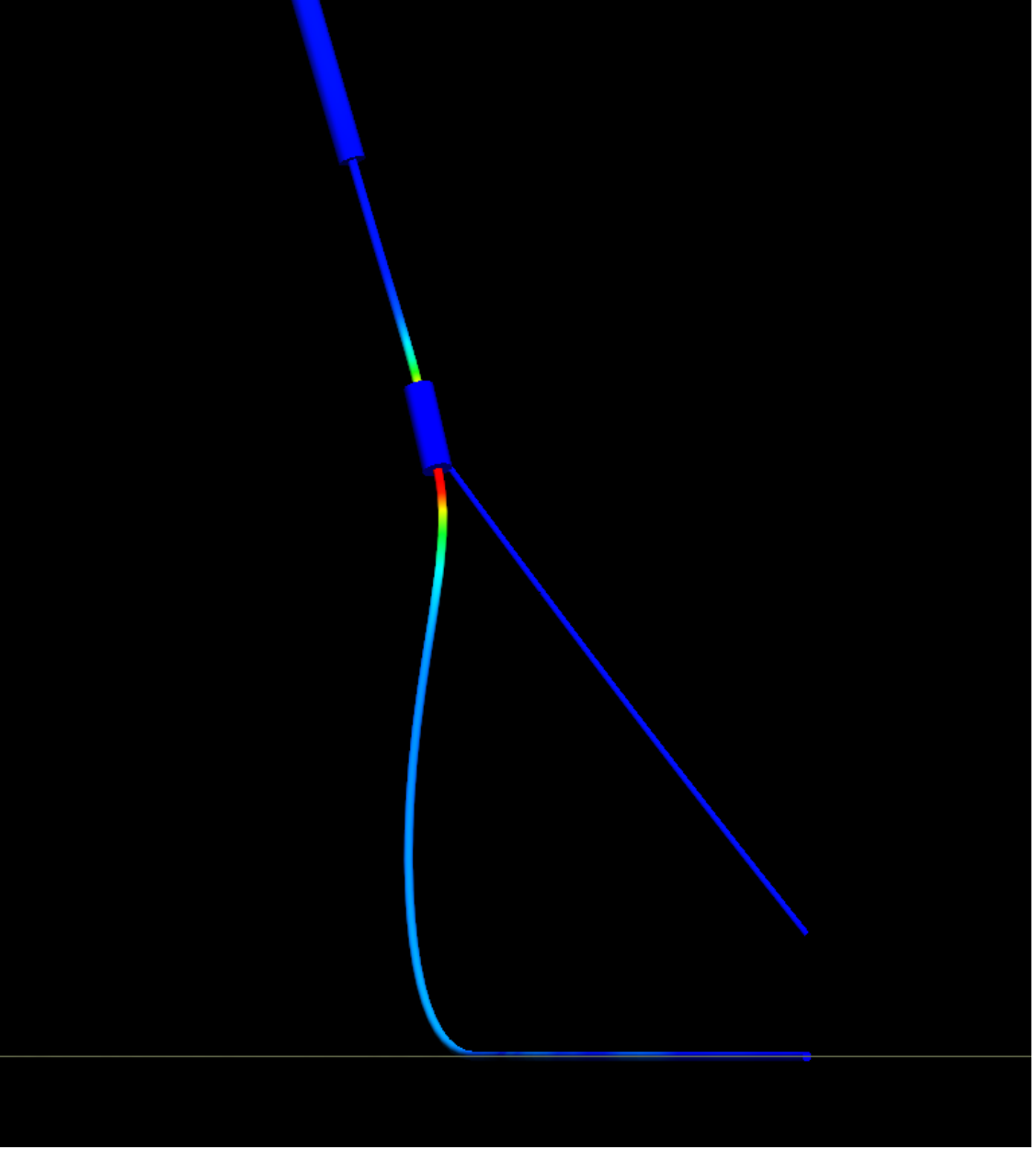
Buoyancy and Ballast

- Approx 2x net buoyancy for Tethered Lazy Wave.
  - Required to keep hold down tether in tension.

- Ballast required for Weighted Lazy Wave.
  - Can act as installation aid to sink buoyancy, removing requirement for clump weight handling.



wood.



Overbending

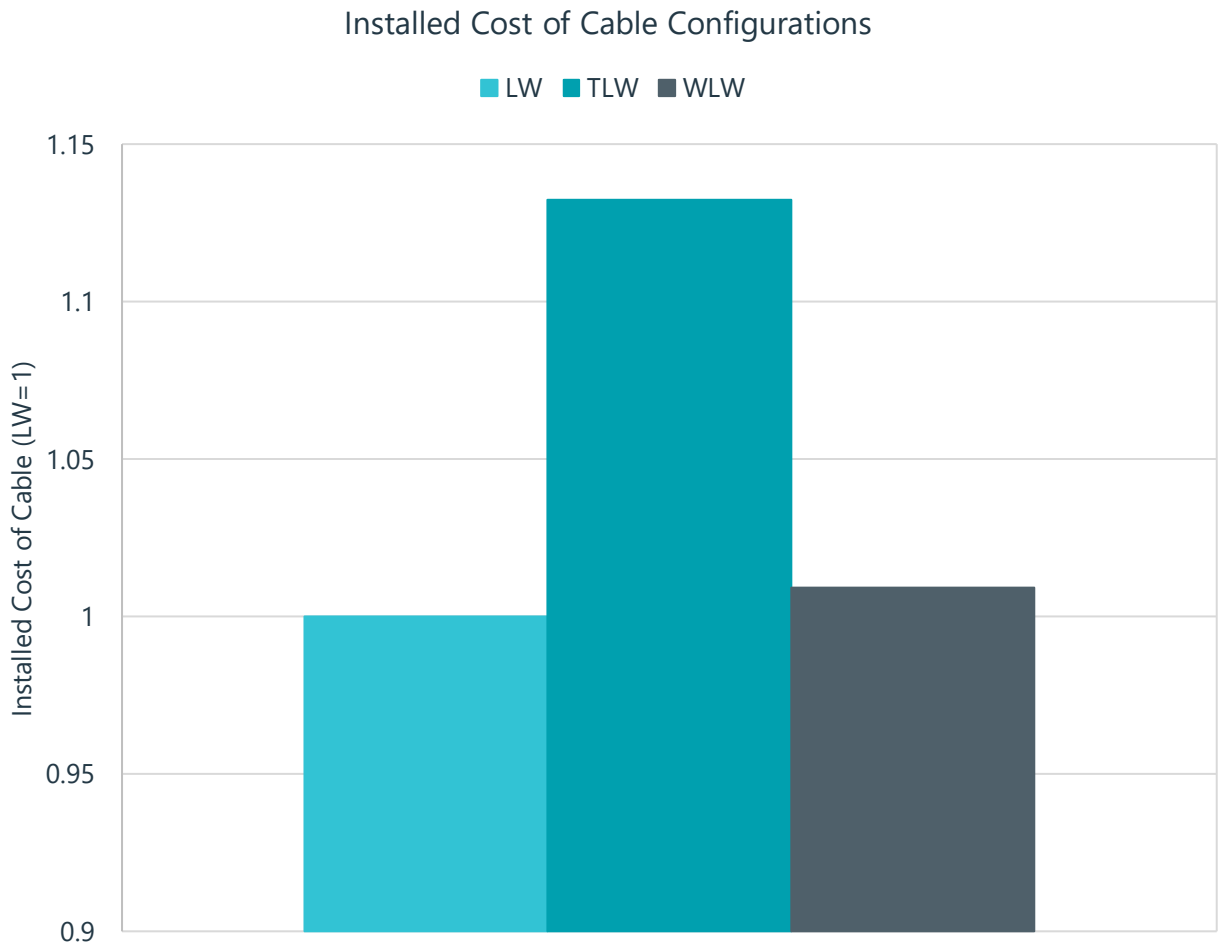
- Overbending at either side of hold down clamp.
  - Not uncommon.

- Bend limiting devices have been previously deployed in North Sea.
  - Bellmouth.
  - Bend stiffener.

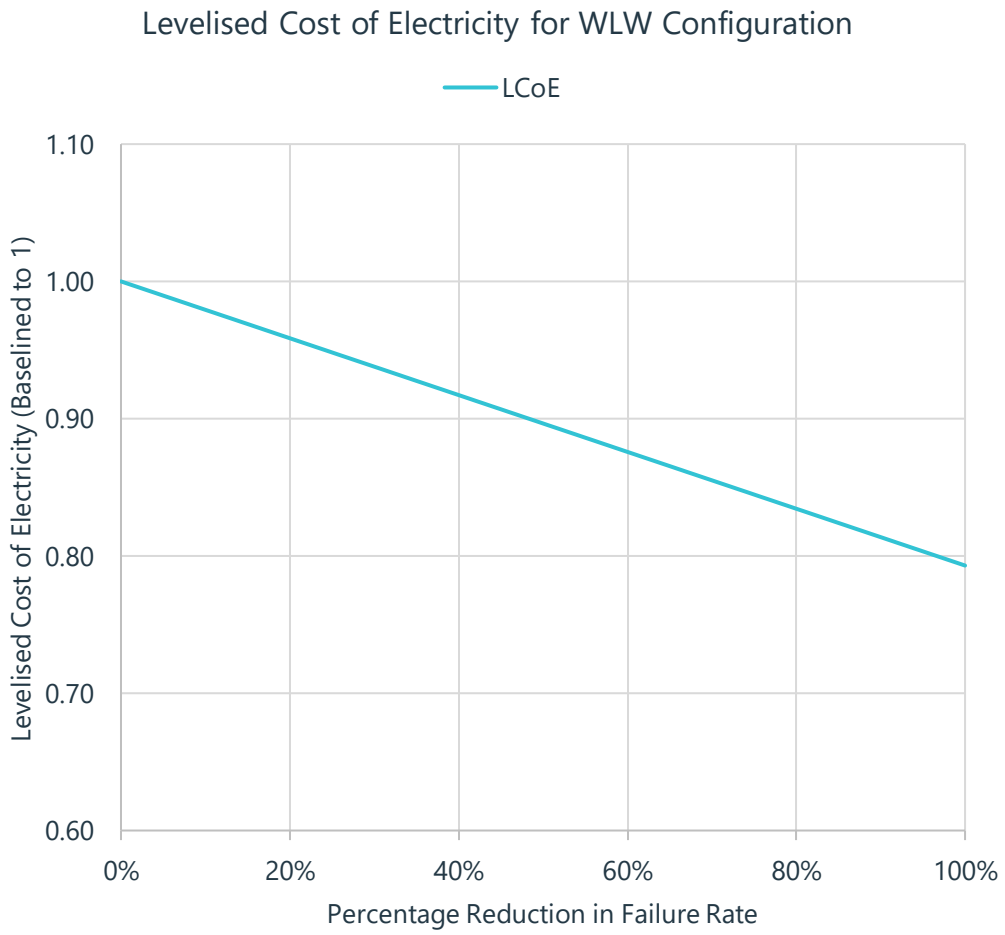
CAPEX Cost Impact

- Weighted Lazy Wave cost similar to Lazy Wave.
  - Small increase due to cost of ballast.

- Weighted Lazy Wave approx. 12% lower than Tethered Lazy Wave.
  - No hold down arrangement.
  - Lower buoyancy.



OPEX Cost Impact



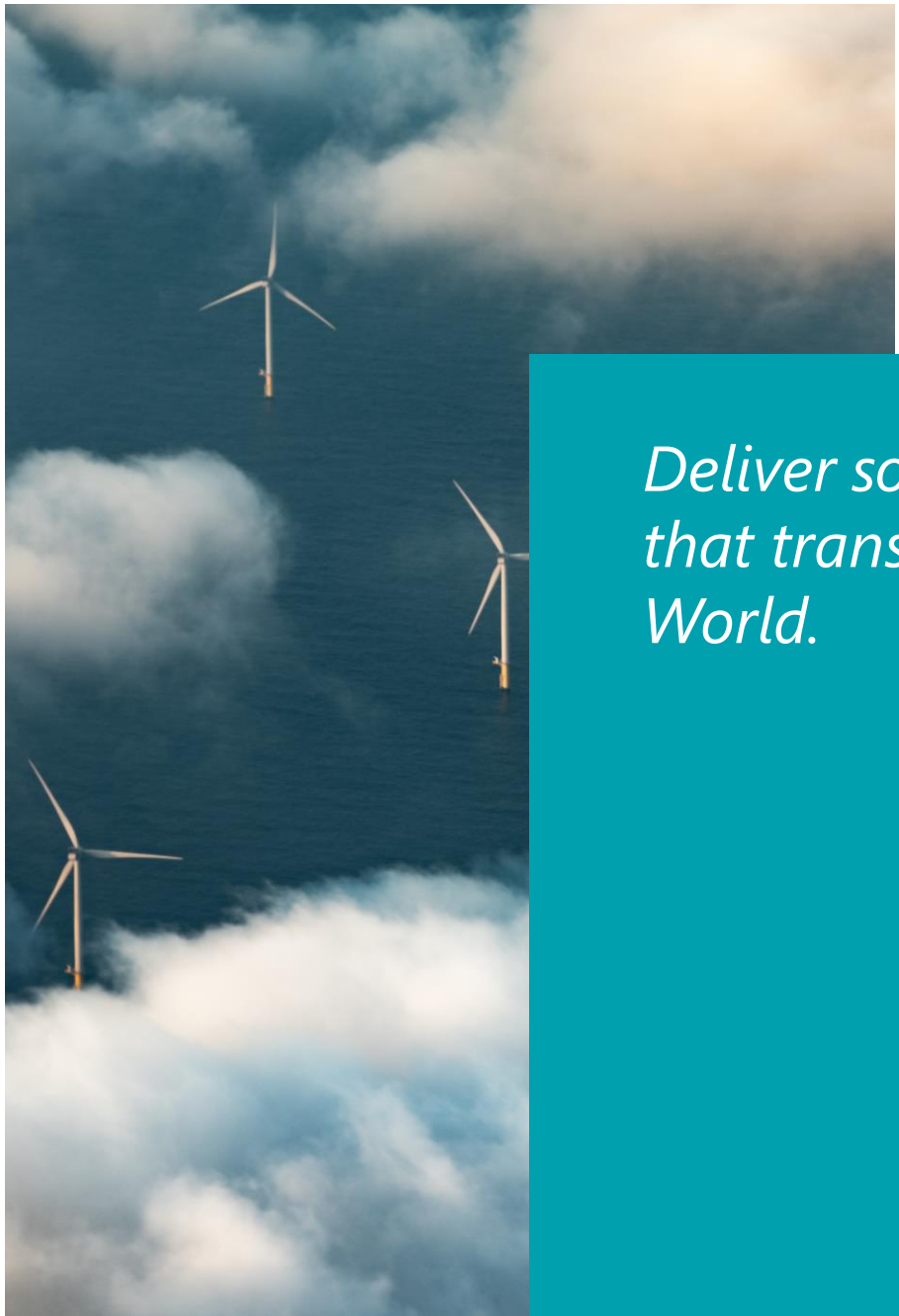
- Large opportunity to reduce LCoE by reducing cable failures.
  - Specialised cables.
  - Long lead times.
  - Long mobilisation times.
  - Lost revenue.

- Weighted Lazy Wave helps:
  - Fewer system failure points.
  - Less touchdown kinematics.
  - Fewer installation ancillaries.

wood.

Thank You

- jamie.mccallum@woodplc.com



Deliver solutions that transform the World.


wood.