



Renewable  
Parts Ltd



# Greening the supply chain

Decom – North Sea  
Briefing 28<sup>th</sup> January '21

# About Renewable Parts

- Operation and Logistics Hub in Glasgow & Refurbishment and Innovation Centre in Lochgilphead
- 10 years of experience and an in-depth knowledge of major turbine brands including Siemens-Gamesa, Nordex, GE, and more.
- Expertise in supply chain, inventory management, and refurbishment enabling turbine owners to extract more value from their operations



**136,000**

ITEMS MOVE THROUGH OUR  
SUPPLY CHAIN ANNUALLY



**50t**

DIVERTED AWAY FROM WASTE  
AND LANDFILL OVER 12 MONTHS



**2,000**

WIND TURBINES ARE CURRENTLY  
SUPPORTED ACROSS OUR CHAIN

# The uncomfortable truth

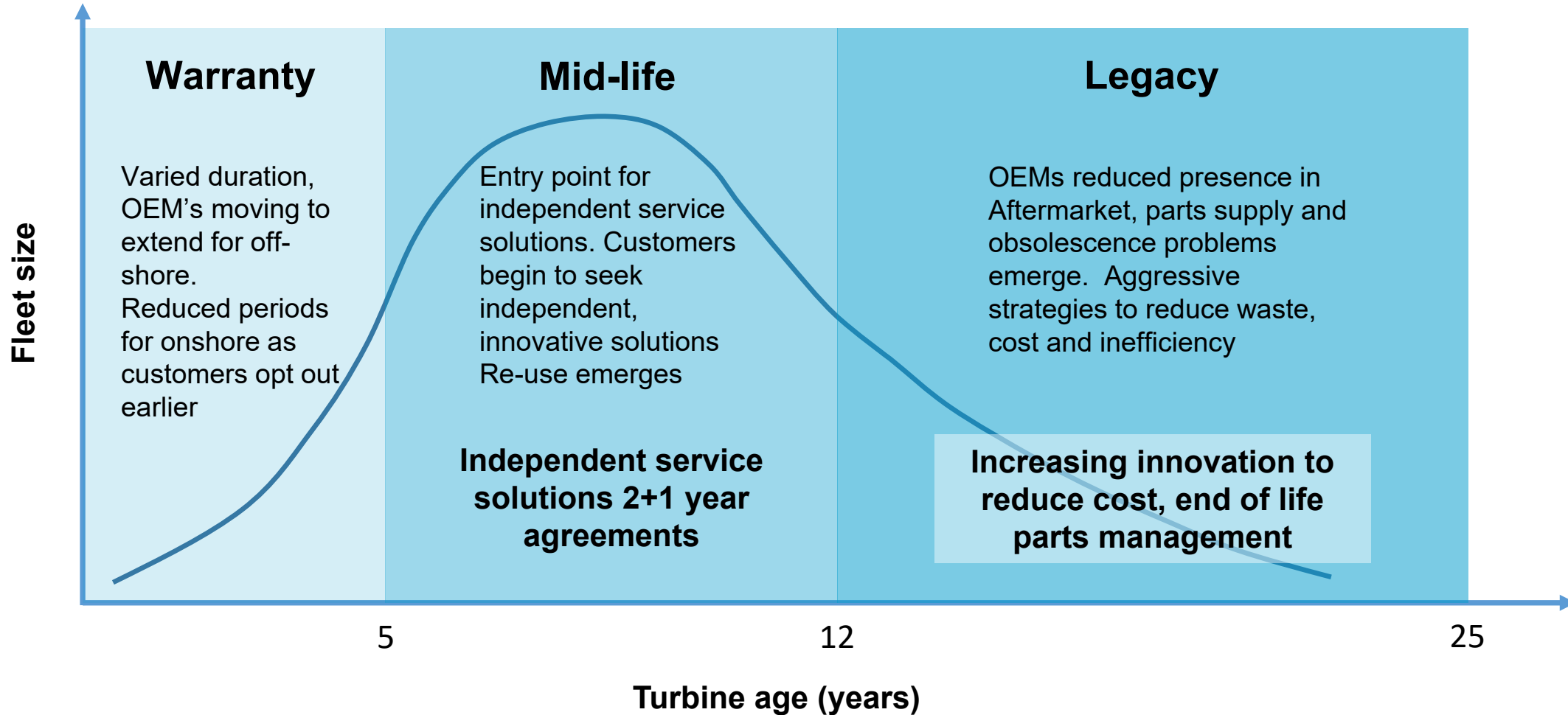
- The wind industry maybe a green energy source however...
- A linear culture of use once replace with new remains prevalent
- Embedding a circular economy mindset is imperative and will bring significant benefits



# Engendering a culture change

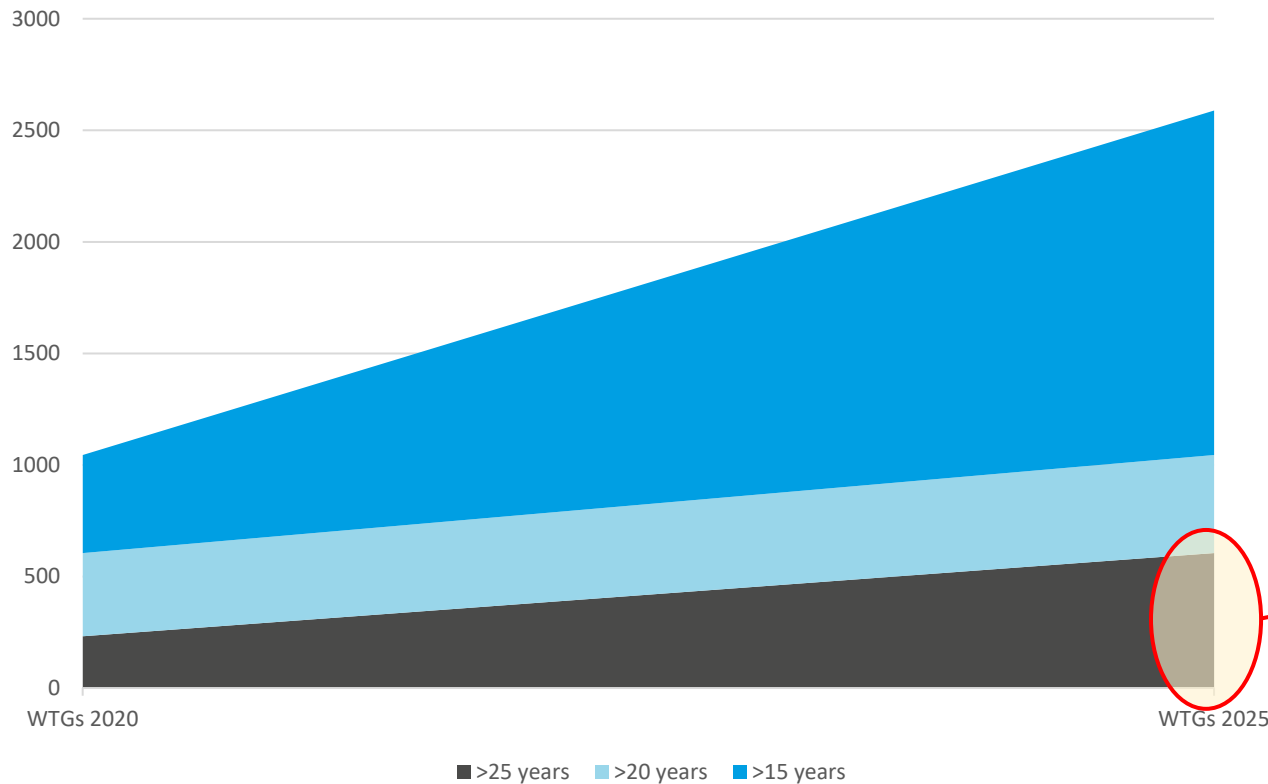
- The push to convert the wind industry towards greater circular economy practices will require culture change driven from the top
- Changing behaviours requires a coordinated effort that informs addresses concerns around risks and product performance
- Procurement departments today are driven almost exclusively on price and then lead-time; however this does not explain why a faster move to circular is not occurring
- Not all businesses are the same with some leading strongly and embracing the new reality
- Turbine decommissioning will greatly help this transition and we have a significant opportunity within Scotland

# Shape of the lifecycle



# Decommissioning – first generation wave

UK Operational Fleet - WTGs



Operational Age	Status
>25 years	Very close to decommissioning
>20 years	Beyond design life
>15 years	Nearing end of design life

250MW (~500) of turbines at decommissioning age by 2025

# Impact on the environment

- For illustration we take a Siemens 2.3MW yaw system:
  - Turbine has 8 yaw gears with an average life of 5-7 years
  - Each yaw gear weights ~180kg and costs ~£3,000 new
- Yaw gear refurbishment is seldom utilised despite offering cost and environmental benefits

## Assumptions

- 1000 miles trip to OEM
- 9 mile/ gallon
- 2.62kg CO<sub>2</sub> / litre

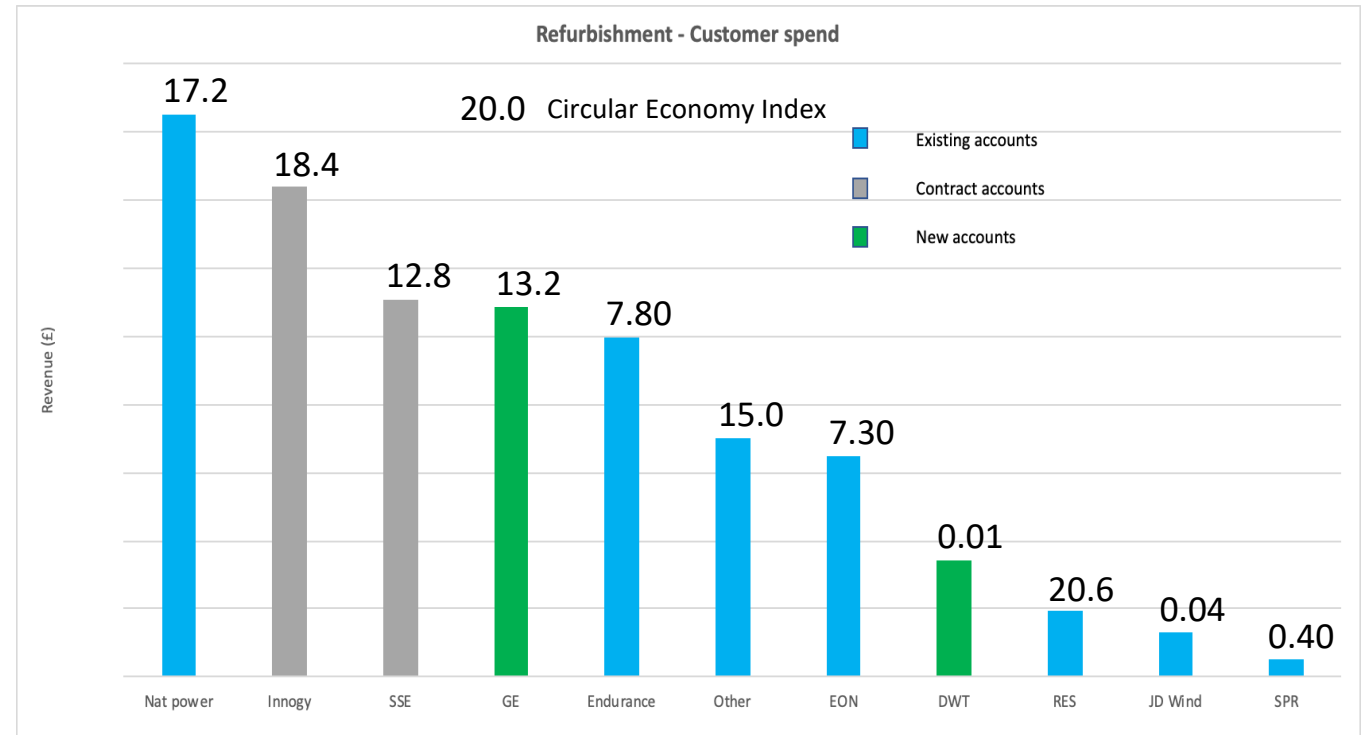
10kg CO<sub>2</sub> / yaw gear transit  
400kg CO<sub>2</sub> to fabricate new



Carbon equivalent to a flying a 747 for 4.5 hours

# You get what you measure

- At present there is a lack of a universal measure of sustainability within the wind industry
- Establishing metrics which measure progress and facilitate objective comparison is key to driving behaviours
- Long term, goals around being carbon neutral by 2030 exist, but question is how...?



*Widespread adoption of refurbishment programmes*

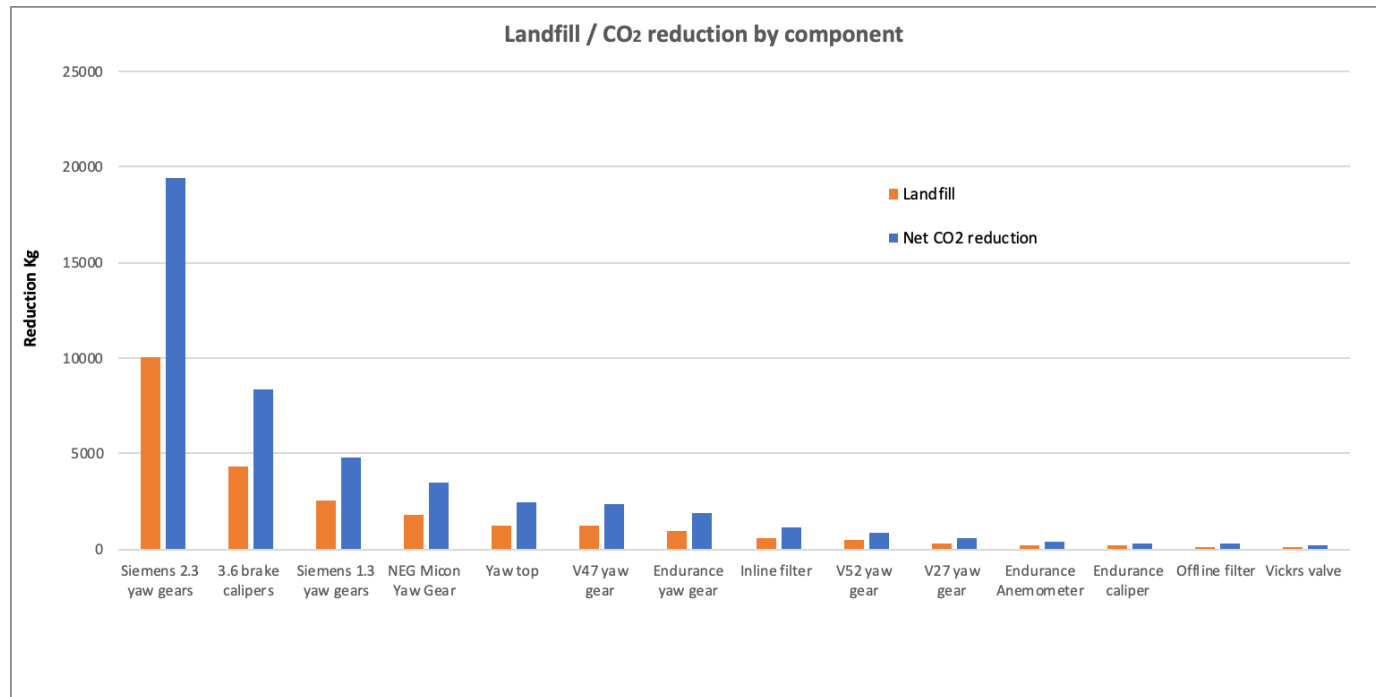


# Inspiring green innovation

- **Mindset** – a relentless pursuit of improvement, a hunger to learn and seek better, greener ways of doing things
- **Pragmatism** – an awareness that the process will involve “misfires”, every egg can’t be a bird, but it’s all learning
- **Investment** – a willingness to invest the time and money, commitment to long term goals, results will take time
- **Collaboration** – clustering expertise, finding the right partners and sharing knowledge, most successful innovation requires close collaboration

# Net CO<sub>2</sub> and landfill reduction

- From October 2018 the refurbishment facility has reduced landfill/scrap and CO<sub>2</sub> emissions by 24.1t and 46.5t respectively



# Summary

- The decommissioning refurbishment challenge is significant but provides enormous potential for UK Inc.
- Realising it will require investment, collaboration and a culture change in our industry
- Early signs are good but we must move much faster – others will
- Some businesses are leading and showing exemplary behaviours, translating rhetoric to action
- We need a coordinated effort across industry government and education to succeed – COP26 could provide that catalyst for a gear change