Net Zero Technology Centre

Technology Driving Transition

Robotics Enabling Net Zero

Sakshi Sircar

May 2023

Strong delivery

£253m
invested with industry

30,000+
industry guests and visitors to the centre

33
commercialised tech

1,810+
technologies screened

45
Startups accelerated

£121m
leveraged from industry partners

53
partnerships

£10-15bn
GVA potential

355
projects

175
field trials complete, planned or underway

NZTC at the forefront of accelerating net zero

Research & Technology Development Projects

Co-investing with industry to fund and develop technology projects, working in partnership with trailblazing technology developers.

TechX Accelerator & Growth Programmes

A 15-week programme for innovative clean energy start-ups with potential to significantly accelerate the transition to an affordable net zero energy industry.

Net Zero Technology Services

Insights and foresights on emerging technology to inform and accelerate Net Zero investments and strategies

North Sea: transition to net zero

A net zero UK Economy enabled by the Oil & Gas sector

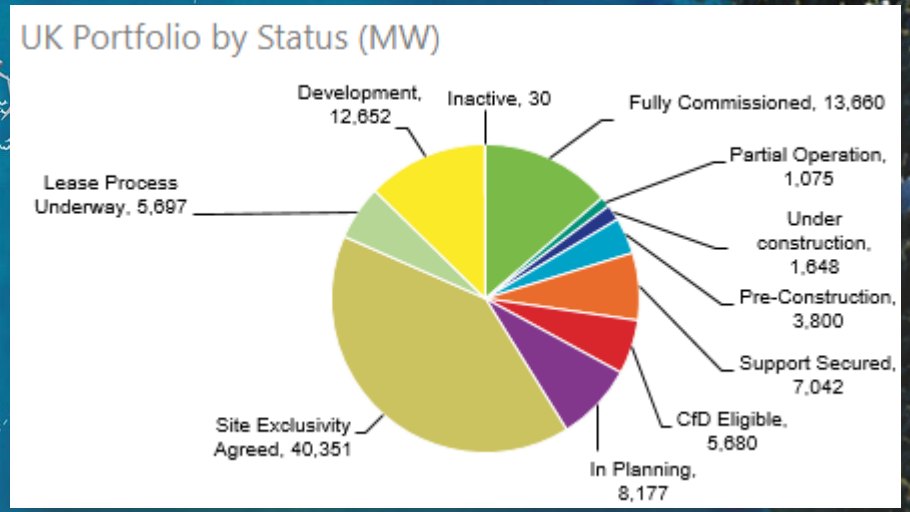
Enabling

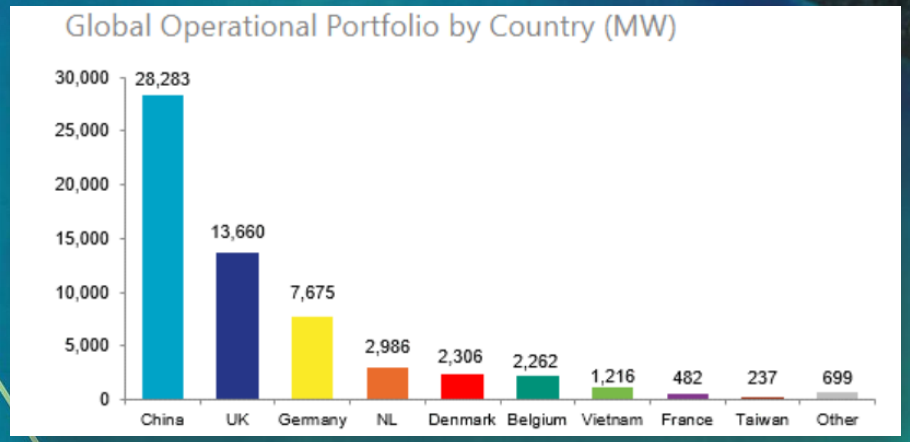
Net zero Emissions O&G Offshore Operations	Offshore Renewables Integration	Hydrogen production leveraging the O&G industry	CCUS from industrial clusters and blue hydrogen production	
Vision 2035 production x today's oil & gas prices	CCC wind x £40/MWH	CCC H_2 x £2/kg	CCC CCS x £50/t	
2020	£15Bn	£1Bn	•	•	£18Bn
2030	£16Bn	£5Bn	£1Bn	£2Bn	£25Bn
2040	£12Bn	£7Bn	£12Bn	£2Bn	£33Bn
2050	£9Bn	£11Bn	£14Bn	£4Bn	£38Bn

North Sea: transition to net zero

A net zero UK Economy enabled by the Oil & Gas sector

https://www.renewableuk.com/news/632004/UK-offshore-wind-pipeline-reaches-nearly-100-gigawatts---while-global-pipeline-hits-over-1100GW-.htm

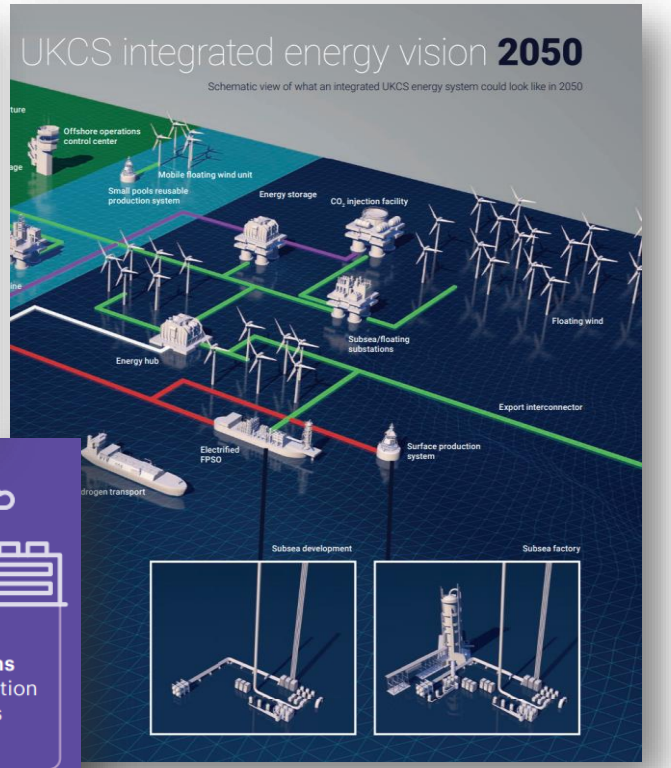


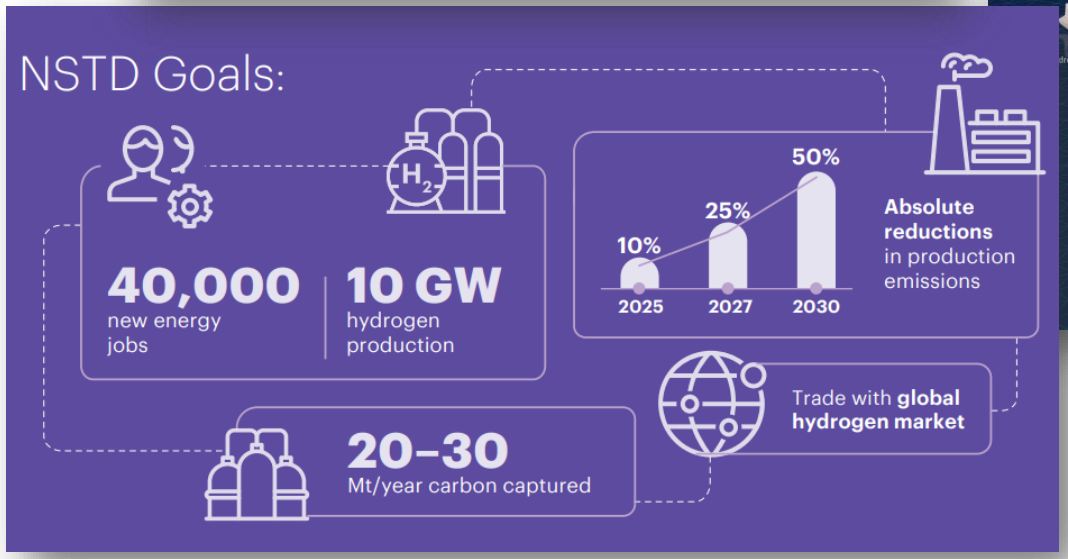


Closing the technology gaps:

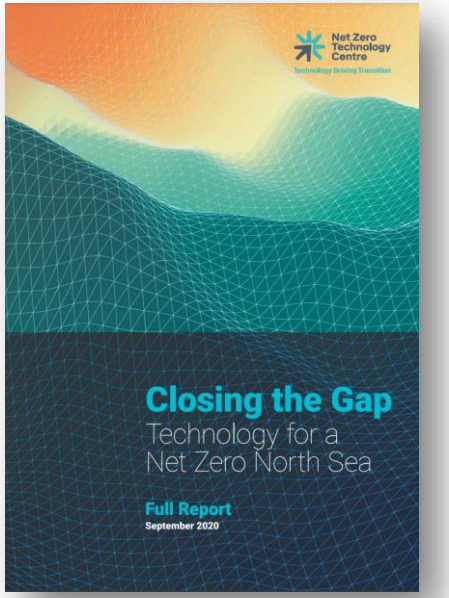
Offshore wind; Hydrogen; Carbon, capture & storage; Oil & Gas electrification and transportation

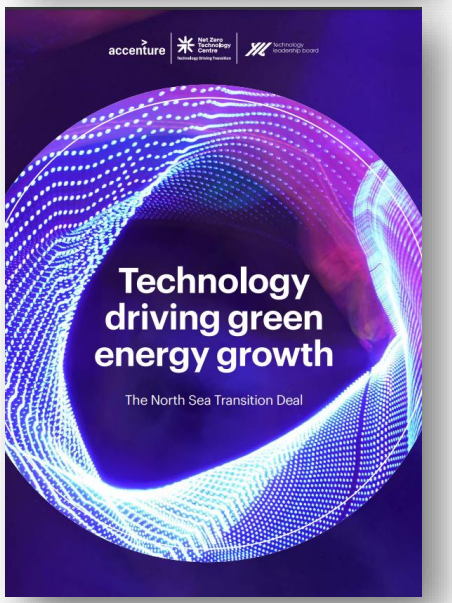
An integrated energy future





Next 10 years are critical





Robotics Enabling Net Zero

https://www.nstauthority.co.uk/media/8439/emr-2022-final-v2.pdf

Robotics Enabling Net Zero

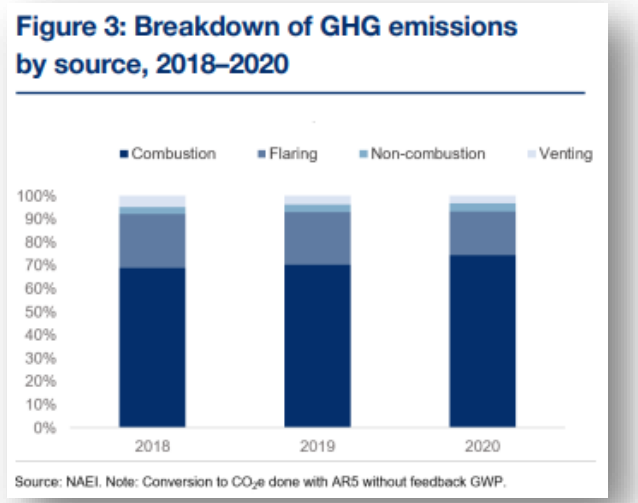
Power Generation
(+ Consumption)

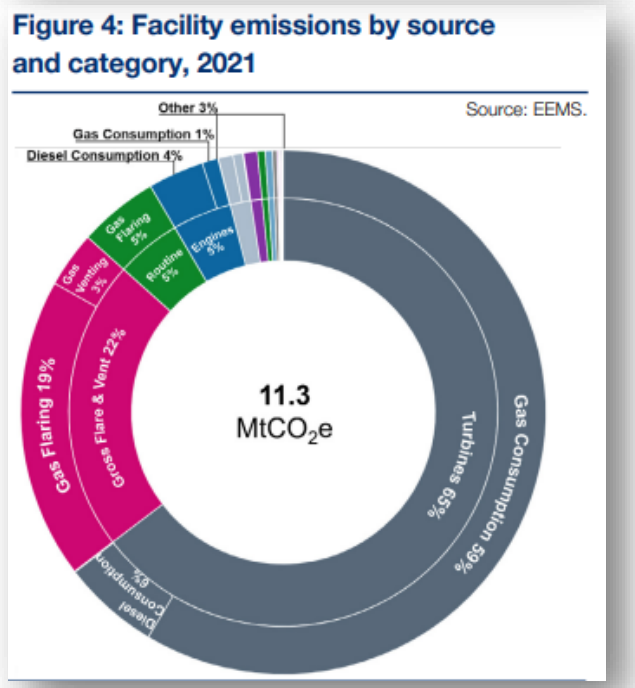
Operations
Inspection
Maintenance

Repair
Materials

Other

Full Decarbonisation





https://en.wikipedia.org/wiki/CURV
www.deeptrekker.com
www.eddyfi.com
https://sonomatic.com/

Robotics Enabling Net Zero

Technology

Status Quo

Hard to reach
Not possible to reach by humans
Extreme hazard
Internal confined spaces

Humans

Status Quo

If possible to conduct 'manually' – preferred option
Human interpretation = high value

Shift the Paradigm

Technology

Dull
Dirty
Dangerous

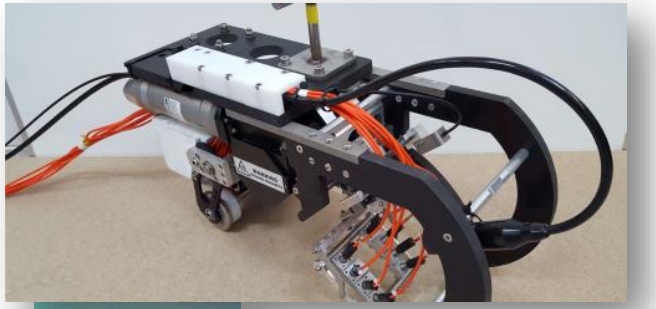
Technology

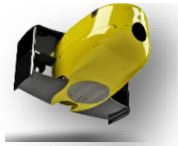
Where possible to conduct with technology = preferred option

Results

- Process more data
- Identify problems quicker
- Test solutions virtually
- Notify action quicker
- *Optimise efficiency*
- *Pro-active, sustainable operations*

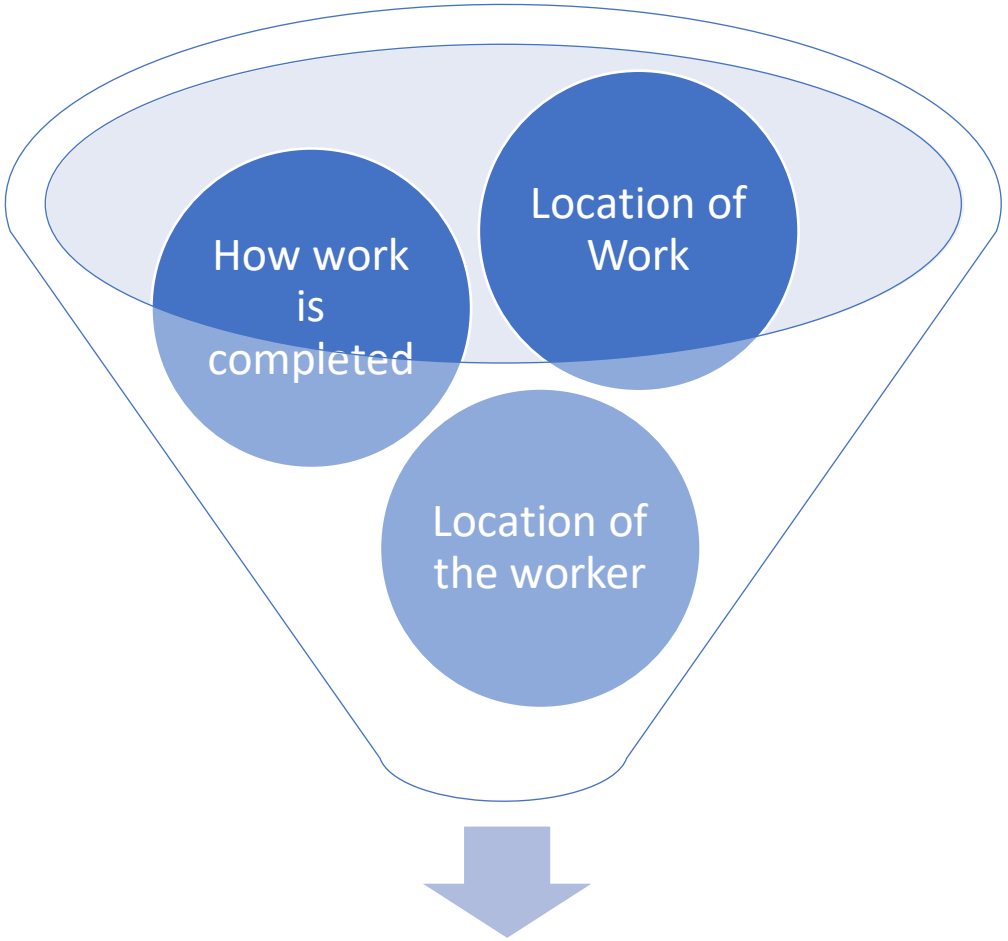
CURV-III 1973





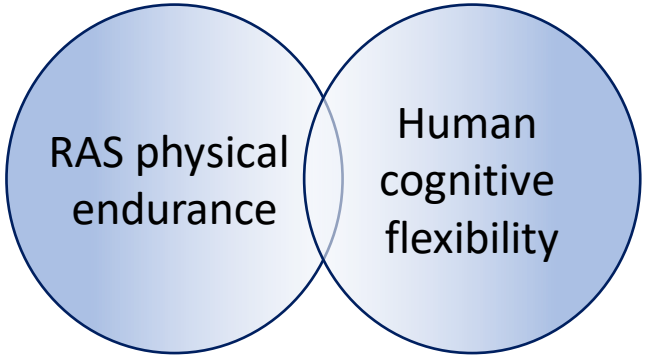
Digital Technologies: Future of Work

https://ore.catapult.org.uk/press-releases/robotics-vital-renewables-expansion-needed-reach-net/



Future of Work

Robotics Enabling Net Zero



Robotics Enabling Net Zero


We exist to transform the energy industry.
We exist to drive down costs, increase efficiency and help deliver a net zero energy system.
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