

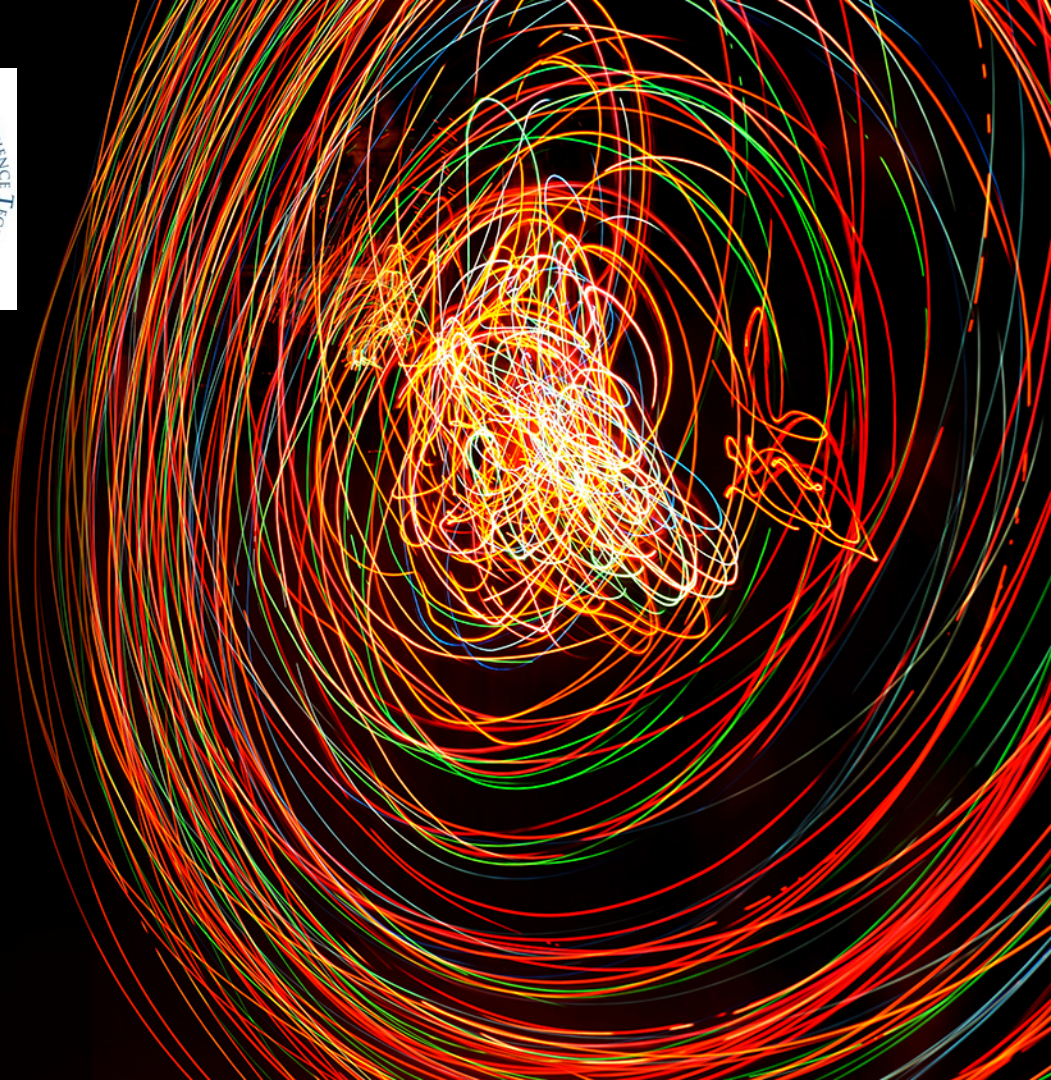


The Challenges of an Oil & Gas Circular Economy

SUT/MASTS Workshop, 2019

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fostering and funding innovation



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Objective: Develop an Outline Business Case for a Decom/CE Innovation Network based around Port of Dundee:

- Identified O&G Decom/CE stakeholders
- Identified current CE examples, opportunities & projects.
- Identified possible re-use markets

Next steps

Secure funding to develop further.

The Problem (or Opportunity?)

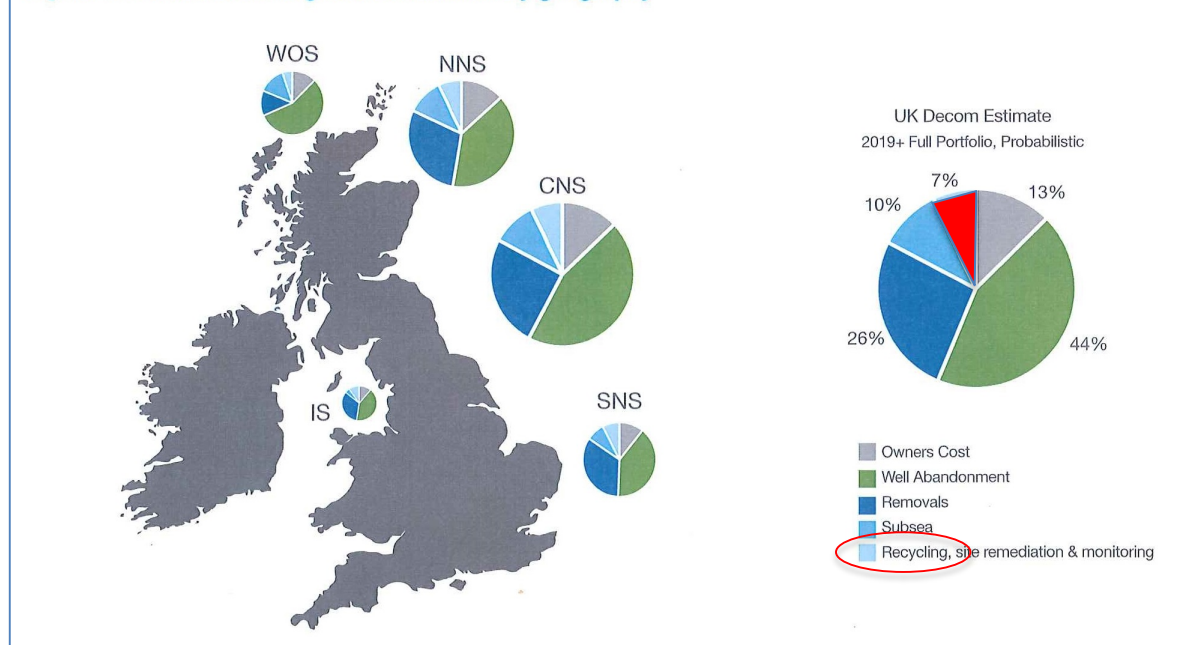
- The North Sea is a mature market for Oil & Gas
 - Approx. 12% of offshore assets have been decommissioned to date. (88 assets)
 - Still to be decommissioned:
 - 600 installations
 - 45,000km of pipelines
 - 11,000 wells
 - 40,000 mattresses
 - Currently circa 20 active programs with a further 10 under consideration
- Many are decades old.

The Problem (or Opportunity?)

- Latest estimated costs from OGA - **£49billion** over next 20-25 years.
- Onshore activity likely to be only 1-2%

That's still a £billion opportunity!

Figure 4: Decommissioning cost distribution by geography



From: OGA report – UKCS Decommissioning 2019 cost estimate report

- Vision 2035
- Growth of offshore renewables
- Operator attitude
- Legislation
- Establishing the re-use market & supply chain

- Extend the life of UKCS by a generation
- Maximise economic recovery of existing Oil & Gas deposits
- Double supply chain opportunities.
- Ensure secure domestic energy supply during energy transition
- Transition to net-zero by 2035

i.e. delay decommissioning as long as possible....!

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Growth of offshore renewables

- Ramp up in offshore renewable energy generation projects (wind, wave etc.)
- Some moves to re-purpose defunct O&G assets for renewables' bases.
- Combining renewables and O&G could make some undeveloped O&G fields viable.



- A significant cost to the company with no value-add (i.e. no prize at the end)
- CE uneconomic (cheaper/easier to recycle)
- Liability concerns
- Short timescales to complete decom.
- Morally agree, but just too difficult.



- All equipment/material is designated 'waste' on COP (*Cessation of Production*)
- Re-use, refurb, re-purpose etc. has to be justified to re-designate
- Meeting requirements with recycling so why go further?
- Liability?



- Who would want this stuff?
- How do we connect with them?
- Timing?
- Availability?
- Logistics & Storage?



- Regulatory intervention required to incentivise/compel operators to consider CE.
- A comprehensive inventory of assets well before COP (to identify CE opportunities)
- Identification of market opportunities (in other industries?) for decom equipment & material.



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