EARLHAM GIGAGRID

July 2026

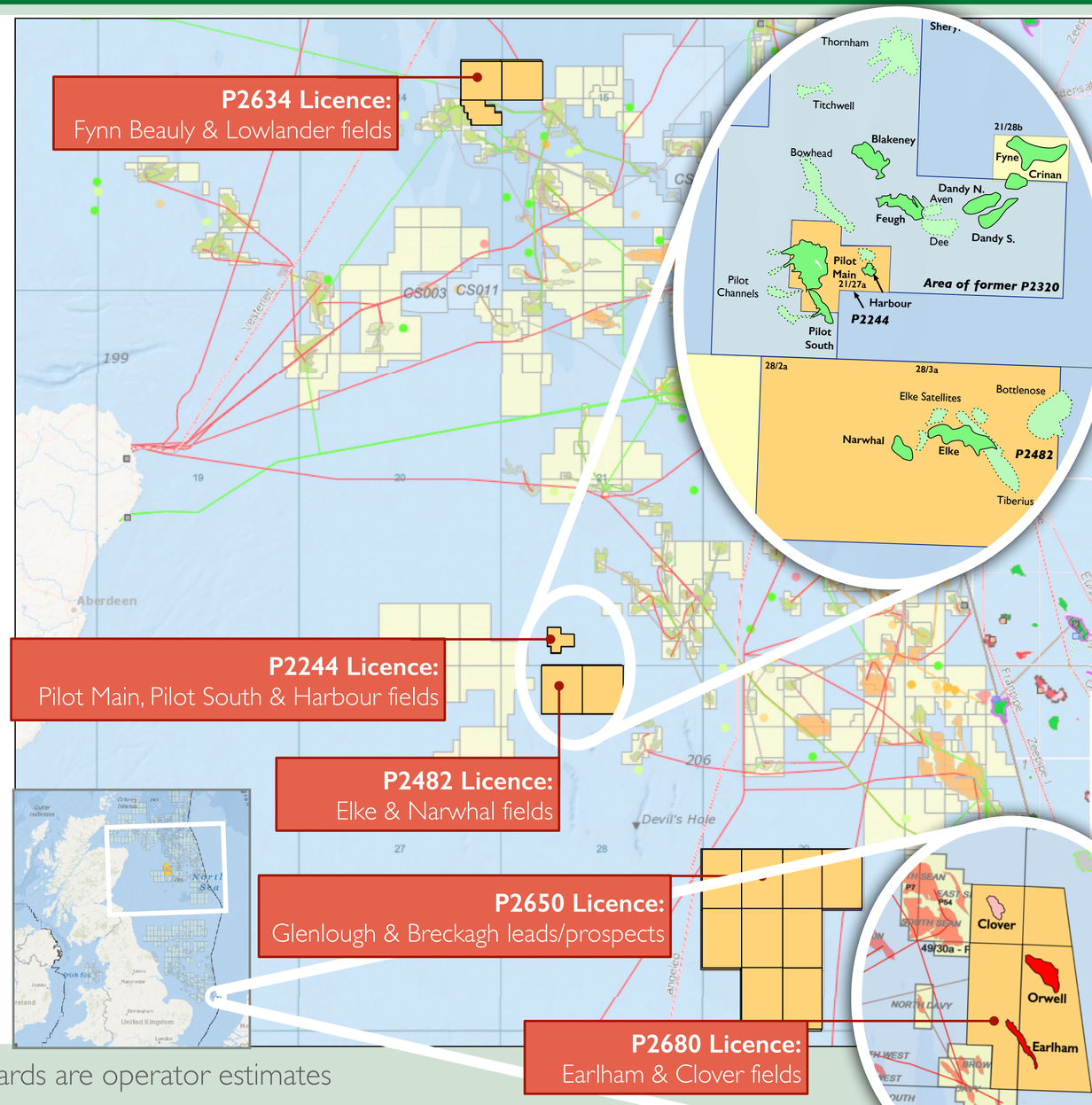
ORCADIAN ENERGY

A pathway to deliver low carbon gigascale compute

Orcadian North Sea licences and summary

ORCADIAN ENERGY

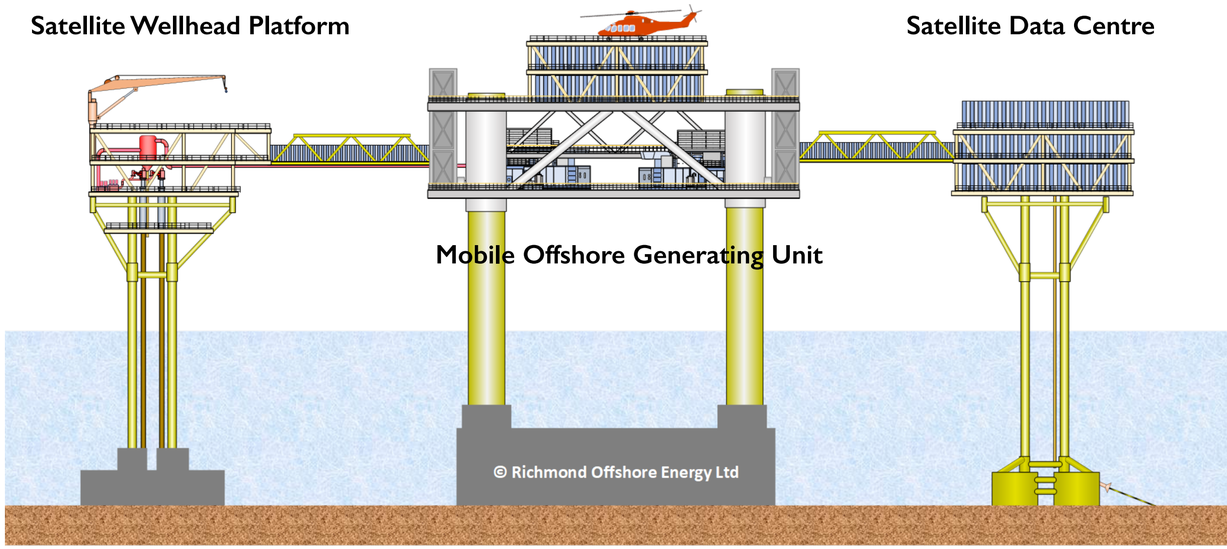
- **Orcadian's 18.75% share in the Pilot field development carried by Ping Petroleum UK plc until first offload of production**
  - Pilot oilfield had a substantial audited reserve: 79 MMbbl 2P reserves (Sproule) Ping see potential reserves growth
  - Post farm-out 13.6 MMbbl 2C net to Orcadian (net of royalty and carry repayment; also reclassified to be consistent with Ping)
- Elke and Narwhal (100%)
  - 54 MMbbl of contingent resources, Elke satellite exploration and appraisal targets contain over 50 MMbbl with high chance of success
- Fynn (50%)
  - Viscous oil discovery with over 129 MMbbls of net 2C resources
- Mid North Sea High (50%)
  - Shallow gas prospects with c. 135 bcf net prospective resource of gas in two high-graded prospects
- Earlham & Clover (100%)
  - A high CO_2 discovery with 114 bcf of methane resource (Earlham), a 31 bcf redevelopment project (Orwell) and a compelling prospect with 153 bcf of prospective resources (Clover)



Pilot, Elke & Narwhal resource estimates based upon the Sproule 2021 CPR; 33rd Round awards are operator estimates

Earlham Gigagrid

- Earlham and Orwell development is the first step
  - Bring the data centre and the power demand offshore rather than take the power onshore
  - Use carbon capture to minimise scope 3 emissions, CO_2 reinjected in Earlham to support pressure and cut emissions
  - **Nvidia's drive to increase rack power to 1MW and the UK's offshore oil, gas and wind expertise are the key enablers of an offshore data centre**



- Offshore data centres in the Earlham area have the potential to exceed 1GW scale, 200MW at a time
  - Earlham can be the start of an offshore islanded grid which can use abated gas and locally generated wind energy (which preserves the gas resource) to power this opportunity; power demand at Earlham puts no strain on the national grid
  - Offshore data centres, on a dedicated grid with its own power supply, are in no-one's backyard; facility cooling is simplified in the sea; and a modular approach enables expansion of compute capacity as demand is realised

There is a clear pathway to delivering offshore, low carbon, compute at a gigawatt scale

There is nothing new under the sun…

but this time some North Sea tigers will do it

ENERGY • DATA CENTERS 14 May 2026

FORTUNE

Peter Thiel is leading investment in an ocean data center powered by waves—and the startup is reportedly worth $1 billion

By **Sasha Rogelberg**
Reporter

Panthalassa https://panthalassa.com/

The Guardian UK

News | Opinion | Sport | Culture | Lifestyle

Environment | Climate crisis | Wildlife | **Energy** | Pollution

China

This article is more than **1 month old** 9 June 2026

World's first wind-powered underwater datacentre starts operating in China

Datacentre off Shanghai coast uses less power and water than land-based equivalent

BBC For you | Home | News | Sport | Weather | iPlayer

NEWS

Home | UK | World | Business | Culture | Politics | Health | Tech | InDepth | BBC Verify | Climate

Technology 6 June 2018

Microsoft sinks data centre off Orkney

6 June 2018

Project Natick
https://natick.research.microsoft.com/

Floating Wind Tech Developer Zooms In on AI | Aikido Unveils Data Centre Concept, Selected for NVIDIA Programme

FLOATING WIND

March 12, 2026, by Adrijana Buljan

Share this article

Akido Technologies
https://www.aikidotechnologies.com

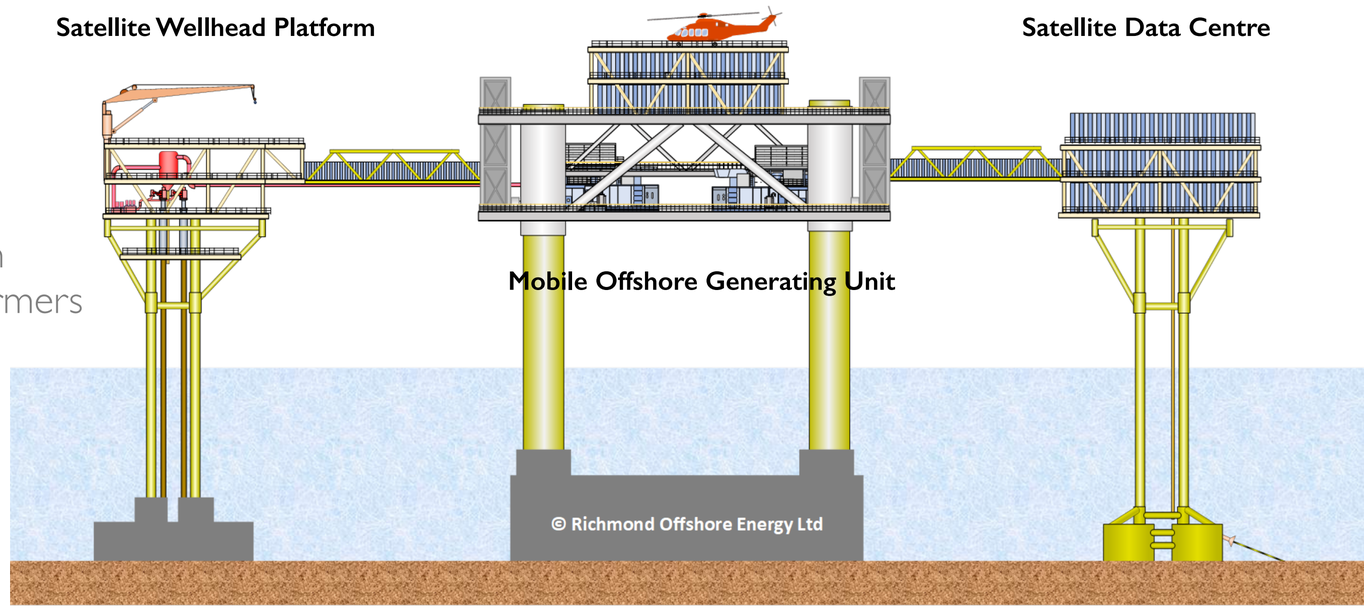
US-based floating wind foundation developer Aikido Technologies has announced two developments linking its floating wind platform with artificial intelligence (AI), including the launch of an AI-focused offshore data centre platform and its selection for an AI startup programme run by NVIDIA.

https://fortune.com/2026/05/14/peter-thiel-leading-investment-ocean-data-center-panthalassa/ https://natick.research.microsoft.com/ https://www.theguardian.com/world/2026/jun/09/worlds-first-wind-powered-underwater-datacentre-starts-operating-in-china https://www.offshorewind.biz/2026/03/12/floating-wind-technology-developer-zooms-in-on-ai-aikido-unveils-data-centre-concept-selected-for-nvidia-programme/

What trends enable an offshore data centre?

- Power per rack
  - 2000s–2010s Legacy Era: General-purpose CPU servers in standard enterprise operations drew between 8 and 10 kW per rack[1]
  - Cloud Era (2010s onward): Standard cloud racks increased to about 10 to 40 kW[2, 3]
  - Today's AI systems can draw up to 500-600 kW per rack[3]
  - NVIDIA targeting 1 MW per rack on Rubin Ultra or beyond[3]
- **NVIDIA wants power distribution to shift to 800V DC[4]**
  - Potential to re-invent the entire power generation and distribution systems and include emerging technologies like solid-state transformers
  - No need for HV transformers if power generated locally[6]
- **Cooling being revolutionised by direct to chip cooling or immersion[5]**
  - Cold Plates: Mounted directly on heat-generating chips
  - Coolant Distribution Unit (CDU) with dielectric fluids to transfer heat to seawater cooling systems on the facility

These trends result in the densification that enables 200 MW of IT load on a couple of platform decks

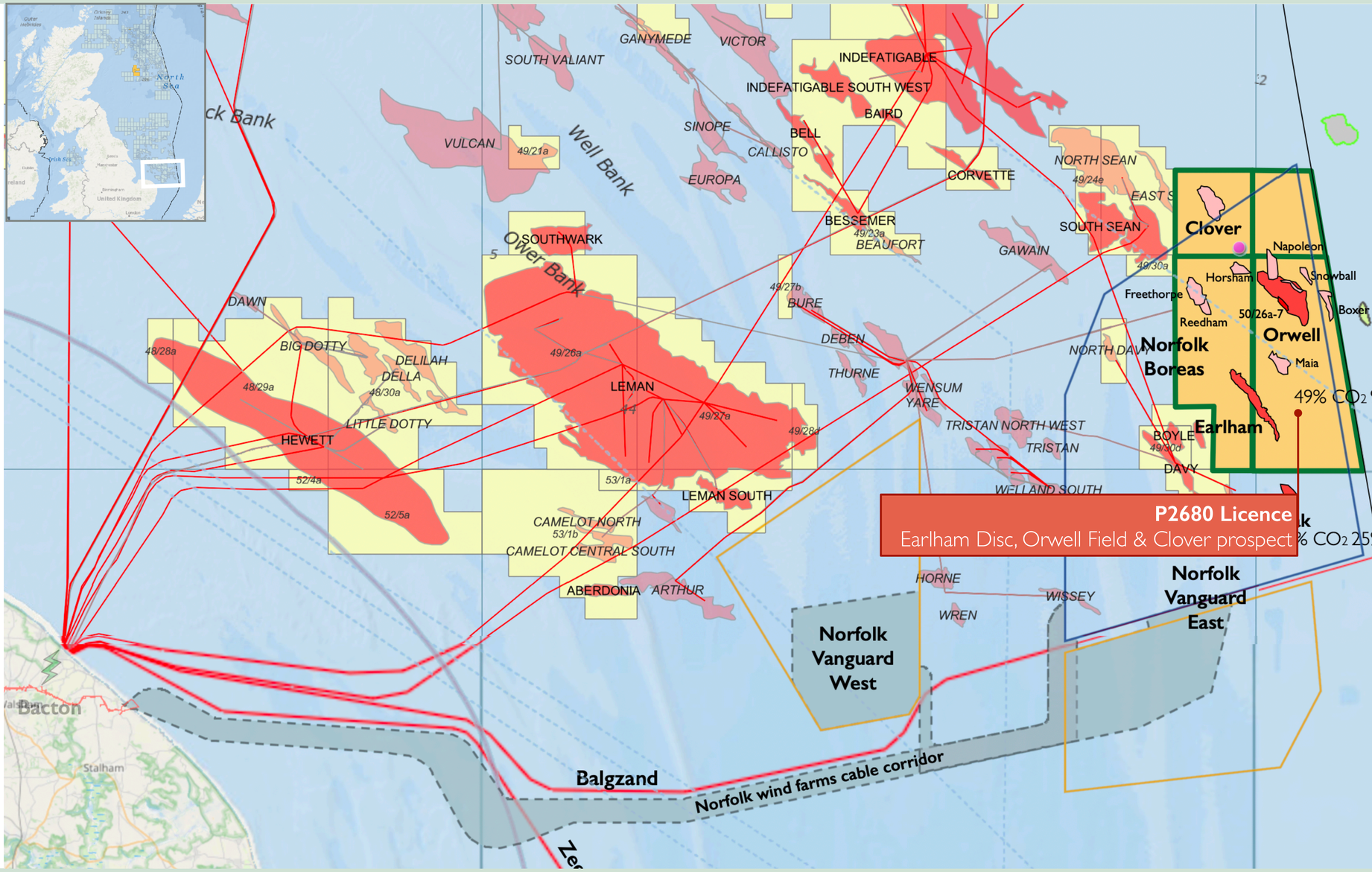


[6] https://www.wolfspeed.com/knowledge-center/article/powering-ai-with-reliable-silicon-carbide-based-solid-state-transformers/

[1] https://www.datacenterdynamics.com/en/marketwatch/the-legacy-data-center-revolution/ [2] https://www.aflhyperscale.com/articles/inside-the-ai-rack-power-fabric-and-fiber/ [3] https://www.bvp.com/atlas/roadmap-the-ai-data-center-stack
[4] https://developer.nvidia.com/blog/nvidia-800-v-hvdc-architecture-will-power-the-next-generation-of-ai-factories/ [5] https://www.computerweekly.com/news/366639658/Huge-grid-and-heat-challenges-ahead-as-Nvidia-set-for-1MW-rack

P2680 Licence summary
Earlham and Orwell resources

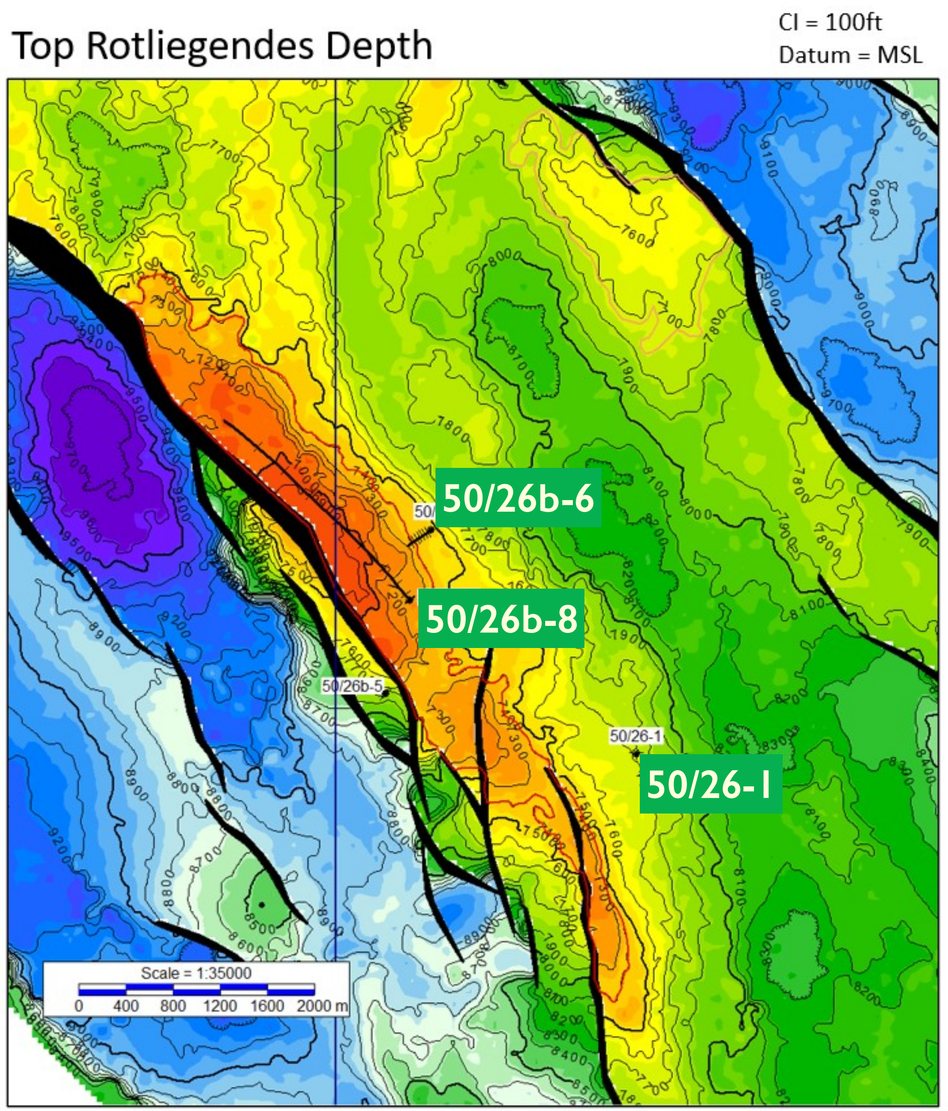
- Orcadian Energy (CNS) Ltd 100%
- Six year innovate licence
  - Started 1 June 2024
  - Four year Phase A, two year Phase C
- Earlham, Orwell & Clover
  - A high CO2 discovery (49% CO_2, 9% N_2)with 114 bcf of methane resource (Earlham), a 31 bcf redevelopment project (Orwell), and a compelling prospect with 153 bcf of prospective resources (Clover)*
- Opportunity to access high CO_2 discoveries in nearby Dutch acreage
- Overlaps Norfolk Boreas wind farm site operated by RWE



* Resource estimates based upon Orcadian management 33rd Round licence application to NSTA.

Earlham Discovery
Wells

- 50/26-1: water wet well drilled down-dip with core cut
- 50/26b-5: drilled for younger target, reached total depth in Triassic
- 50/26b-6: Earlham discovery well drilled in 1995 by Talisman, core cut, no fluid sample taken
- 50/26b-8 - long horizontal appraisal (and expected development) well drilled by BP in 1996
  - designed for a rate of 80-100 MMscf/day, but test rate was limited to 30 MMscf/day due to high CO_2 content
  - reservoir could support higher rates



Earlham Discovery

Earlham is a gas discovery, with a high levels of inerts, made by well 50/26b-6 in1995, and later appraised by horizontal well 50/26b-8 in 1996

Trap

- Tilted horst block

Reservoir

- Leman sands (Rotliegendes) – predominantly aeolian dunes; locally ***c.*** 350 ft thick, porosity 18%; N/G 95%; K 250mD
- DST in App well: 30 MMscf/day (limited rate due to CO_2)
- Core in discovery well

Seal

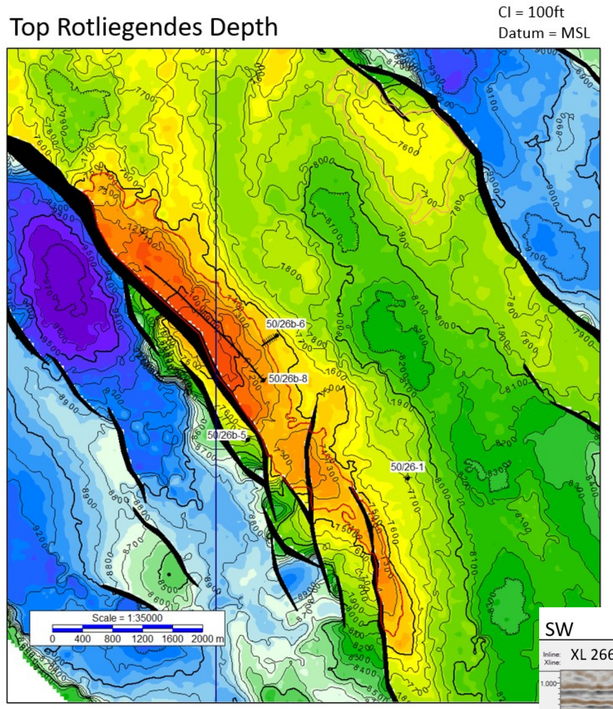
- Zechstein evaporites - high quality top seal

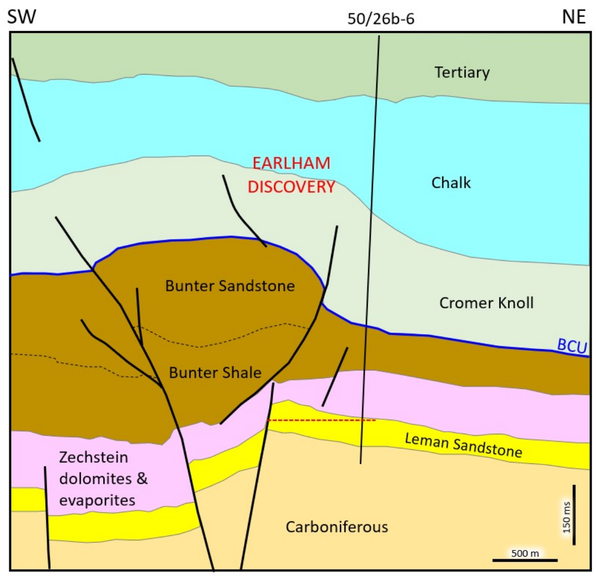
Fluid

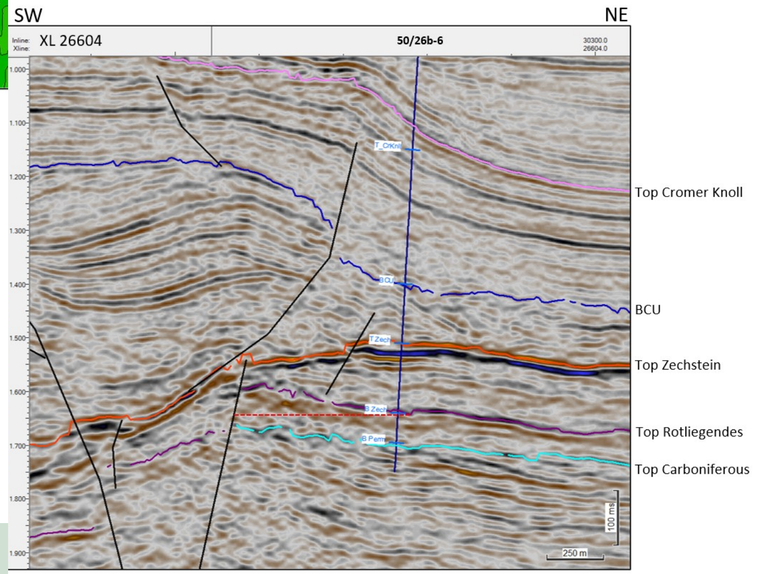
- Methane 42%, CO_2 49%, N_2 9%

Critical Uncertainties:

- Gross rock volume, primarily due to depth conversion uncertainty





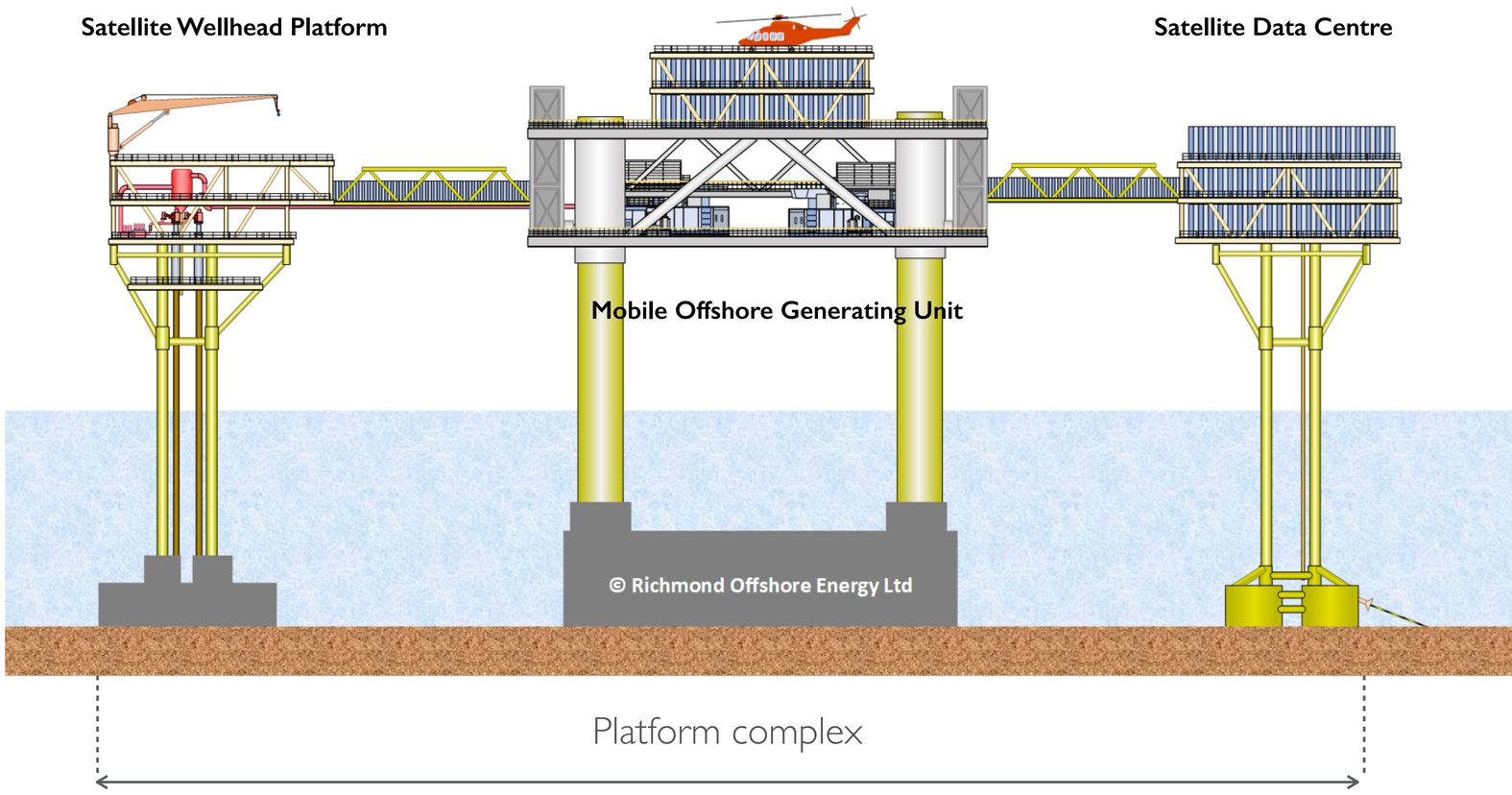


Earlham facilities configuration

Offshore power station with carbon capture and data centre shell

- Carbon capture system to be designed to process all combustion created CO_2 and naturally occurring CO_2
  - Capsol of Norway has a hot potassium carbonate absorbent design which is currently preferred to the conventional amine system
  - Reinjection into Earlham provides pressure support and enables treatment as an enhanced gas recovery scheme
- Orcadian believe that Earlham gas blended with Orwell production can deliver c. 50% CH_4
  - Can be used directly in certain gas turbines e.g. Siemens SGT-800
- 200 MW (IT) load targeted
  - Current option is to install data centre floors on a separate offshore platform to make a three platform complex

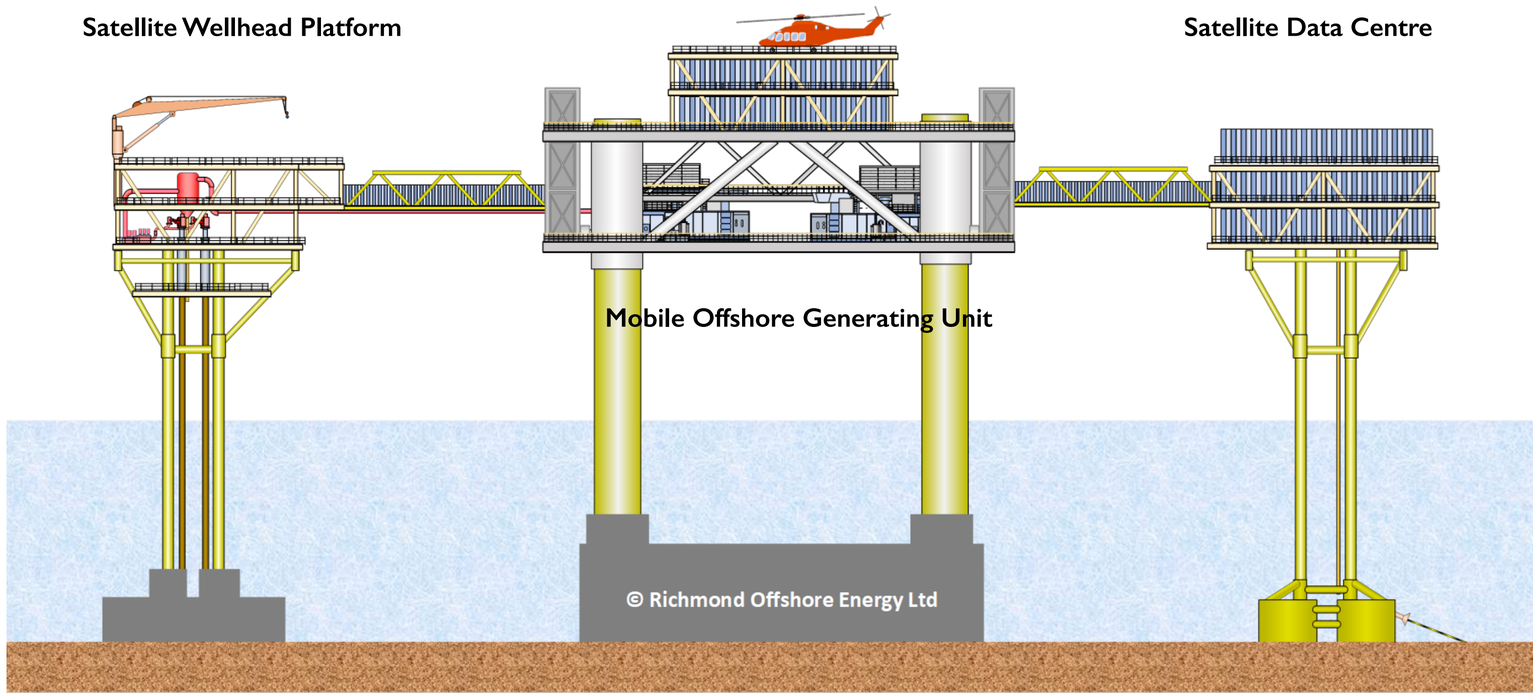
Selection of the right technologies is a key component of the CSR process



Advantages of offshore power station and data centre being neighbours

ORCADIAN ENERGY

- Facility construction can be approved as part of the Earlham field development consent
- Islanded power grid: so no need for a grid connection or an electrical cable to shore
  - Earlham power station with a microgrid replaces interminable wait for a grid connection
  - No stress on the national grid
  - Potential for nearby wind farms to act as "gas savers"
  - Data cables are relatively inexpensive
- Location and concept enables rapid approval cycle
  - Cooling enabled by abundance of sea water which enables high power density per rack
  - Minimal environmental impact and nearly zero carbon dioxide emissions
  - Nearest neighbours are miles away on the Sean and Davy platforms, not in anyone's backyard
- Earlham FDP effectively provides a permissioned location for the project

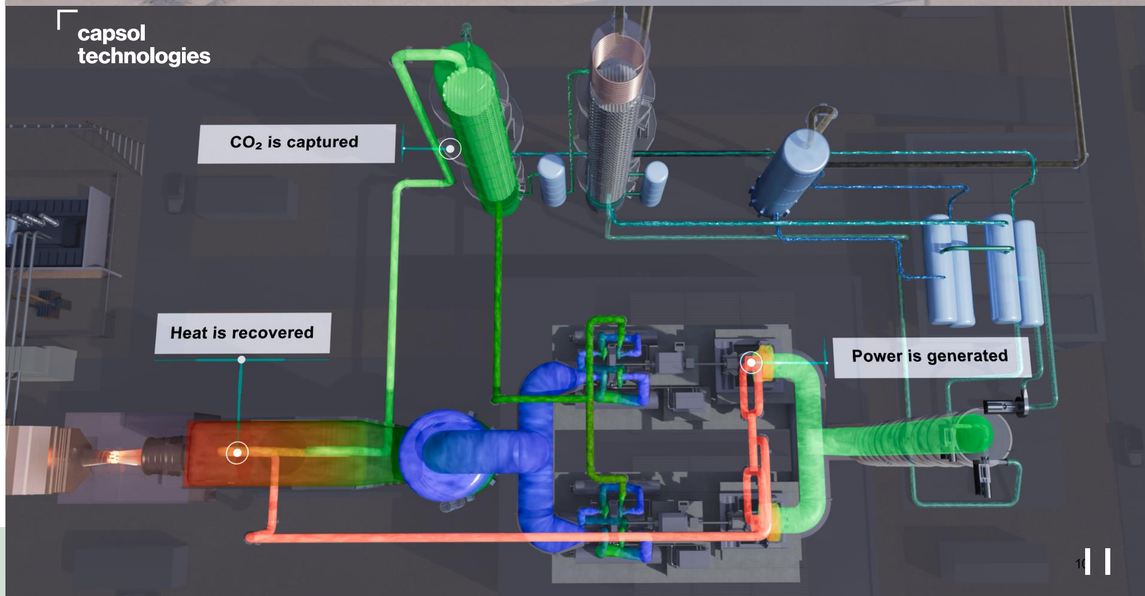


Low carbon AI with no subsidies

Post-combustion carbon capture
Capsol Technologies ASA

ORCADIAN ENERGY

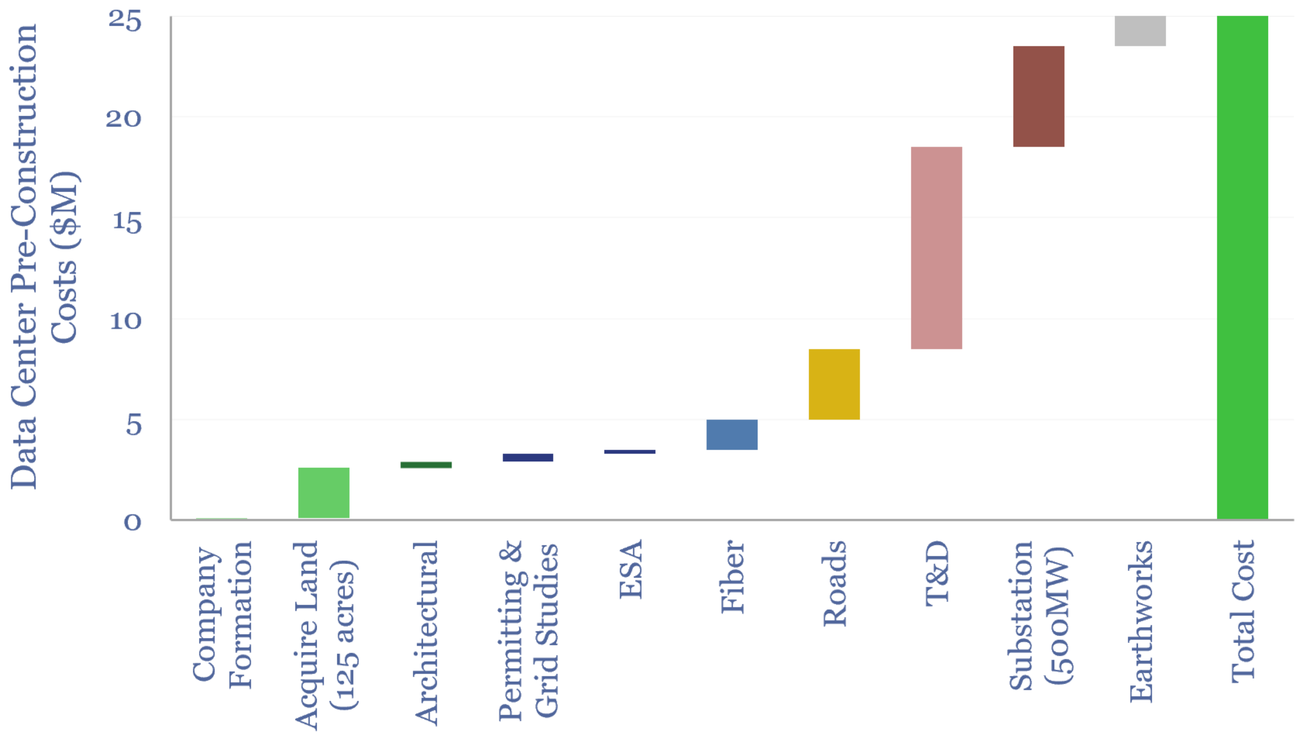
- **CapsolGT® for low carbon power**
  - Developed in partnership with a leading gas turbine generator manufacturer and Capsol
  - Uses the safe solvent Hot Potassium Carbonate for cost-efficient and safe emission capture
  - Like amines it captures over 90% CO_2 from the exhaust gas
  - Hot Potassium Carbonate (HPC) process extracts energy from high exhaust gas temperatures to drive the capture cycle and generate additional power
  - No transportation costs for captured carbon dioxide, injection well costs included in the Earlham Enhanced Gas Recovery (EGR) scheme
  - To be integrated into design of offshore power station



Data centre developer economics onshore in the USA

ORCADIAN ENERGY

- From Rob West at Thunder Said Energy 23 June 2026
- "The numbers [to the right] reflect the purchase of 125 acres of agricultural land (at 5x prevailing land prices), then the planning of a 500MW data-center
- "Getting to shovel-ready status includes connecting the site with fiber, road access, T&D lines, a substation and digging some basic earthworks
- "Selling this site for $2M/acre then equates to $250M, which is 10x the development costs. And some shovel-ready sites have sold for $4-6M/acre"



- **The Earlham offshore site can accommodate an initial 200MW site with optionality to build capacity to over 1GW**

This analysis is of onshore US land transactions only, and cannot be directly applied to a UKCS offshore development; this is not a valuation of the Earlham power station and data centre project, or Gigagrid, and no reliance can be placed upon these metrics being applicable to Gigagrid.

https://thundersaidenergy.com/downloads/electrical-service-agreements-how-real-are-those-data-centers/

How do we get to gigascale compute?

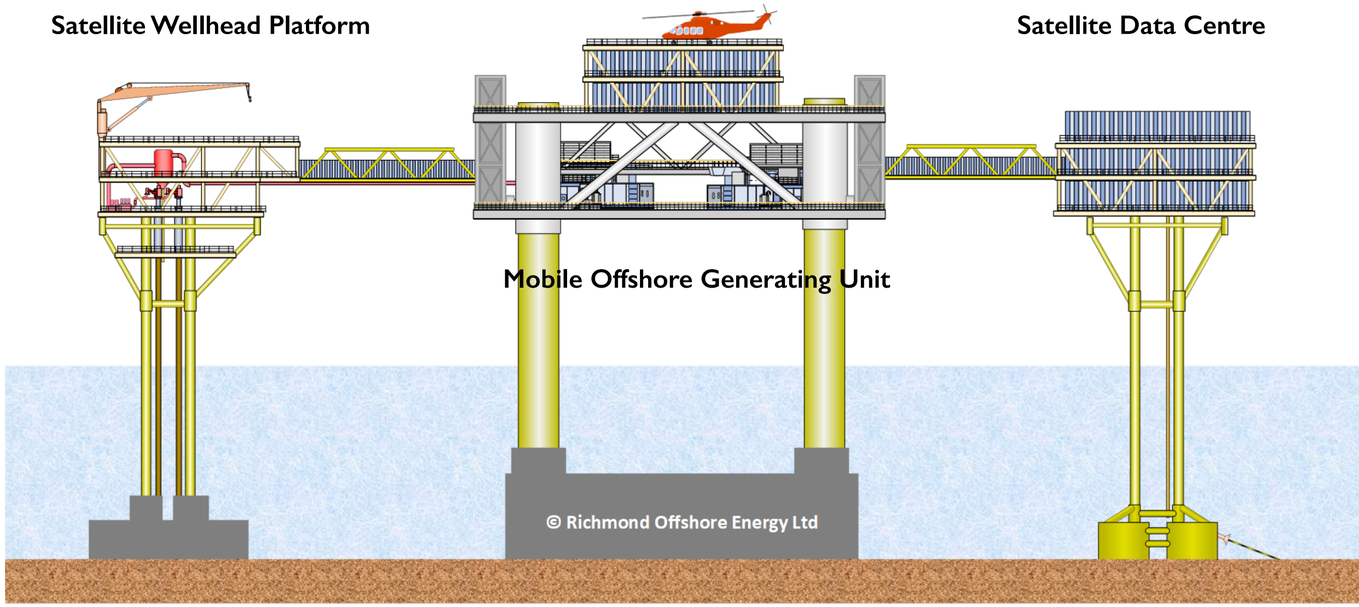
Earlham is the first step in an offshore, off-grid, pathway

ORCADIAN ENERGY

Accelerate the exemplar and first step: get the Earlham project underway

Lay the foundations for gigascale compute

- Agree CO_2 storage terms or acquire CO_2 storage licences
- Apply for a gas storage license for Orwell
  - Potential to store gas ensures energy security
- Seek to secure access to network gas
  - Creates option to buy gas from the network at lowest seasonal cost



Build Gigagrid network and gigascale compute

- Build multiple power stations and data centres
  - Operate gas-fired low carbon power as the dispatchable foundation of a reliable energy supply, use wind power to save gas
  - No obvious limit to the scale of the Gigagrid

No subsidies needed to deliver low carbon gigascale compute for the UK