



EIA EFFECTIVENESS: LEARNINGS FROM OFFSHORE WIND

Presented by Victoria Ridyard and Emma Brown | October 2025

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WSP at a Glance



WSP Overview

- One of the world's leading professional services and engineering consulting firms, headquartered in Montreal, Canada operating across 50+ countries with over 78,000 employees.
- Delivering across industries and sectors.
- For a second consecutive year, WSP earned the top spot as the world's leading environmental & sustainability (E&S) consulting firm in Environment Analyst's annual state of the industry report, boasting a 10% market share.
- Delivering our Future Ready™ Strategic Growth Plan 2025 - 2027





Why Future Ready at WSP?

Future Ready is our global innovation and sustainability programme at WSP. It's also the title of our 2022-2024 global growth strategy.

- **We know the future will be different to today.**
- **The advice and designs we provide are for the long term.**
- **We know it's hard to think outside the present.**

Future ready gives us a systematic way to:



**1.
See the future
more clearly**



**2.
Advise for this
future as well as
today**



**3.
Set our clients
and WSP apart**



WSP and Offshore Wind Overview

- Growth in offshore wind faces challenges: development costs, consenting and grid delays and supply chain issues.
- Our focus is to reduce the technical, environmental and consenting risks as early in the development process as possible to support speeding up development.

Our lifecycle expertise - from site identification to repowering - supports asset performance through engineering, advisory, and due diligence services.

We drive innovation in floating and fixed wind, digitalisation, larger turbines, O&M, and hydrogen, supporting technology qualification and deployment.

Growth needs investment in people, ports, and supply chains. Our integrated approach - spanning infrastructure, ESG, carbon counting, and Future Ready - helps build offshore wind sustainably.



Our Guiding Principles:



We foster collaboration in everything we do



We are locally dedicated with international scale



We value our people and our reputation



We are future-focused and challenge the status quo



We have an empowering culture and hold ourselves accountable



Victoria Ridyard

- ❑ MRTPI Strategic Growth Director
Offshore Wind - Earth and
Environment
- ❑ 25+ years of experience in multi-
disciplinary consultancy and
development



Emma Brown

- ❑ MRTPI Associate Planner - Major
Infrastructure / Environmental
Assessments
- ❑ 10+ years of experience in multi-
disciplinary consultancy

Safety, Health and Wellbeing



UXO Encounter: Rampion 2



- **Geophysical survey subcontractor came across two suspected UXO devices on the surface of an arable field**

- **Learning:** Empowerment, UXO knowledge, awareness of correct procedures

- **Immediate actions taken**

- Contractor were immediately stood down and vacated the area
- Emergency services and landowner informed
- Incident was reported to the client and escalated internally to relevant HSSE management
- All survey teams were informed and stood down whilst next steps reviewed with client
- Police and military removed devices ('dud' training device and tail fin of a mortar round)

- **UXO specialist engaged and recommended:**

- Team UXO awareness briefing
- Ordnance discovered likely to have already been disturbed and therefore the briefing and updated RAMS are appropriate to remobilise

- **Next Steps Taken**

- RAMS for all survey teams updated and teams briefed in line with advice from UXO specialist (via survey briefings/toolbox talks)
- Communicated across wider business
- Surveys remobilised 2 weeks later

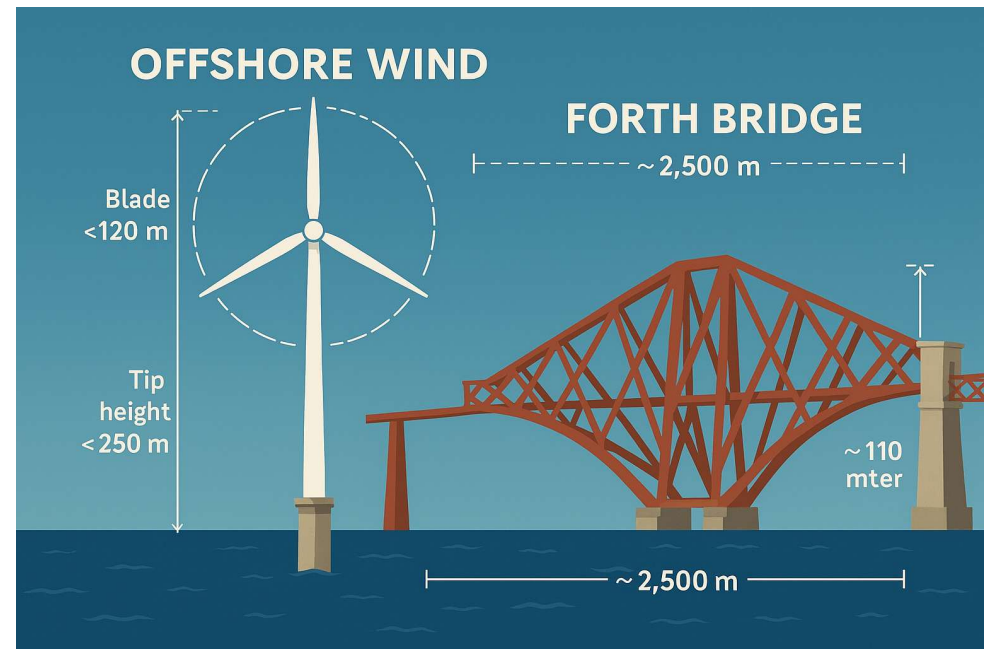


Scale of Development



Offshore Mega Projects

- Project scale and complexity is vast compared to most onshore EIA projects:
 - Cost:
 - £2-3bn per gigawatt rising to circa £5bn for floating
 - Component Size
 - Turbines increased in size – 320m rotor diameters under consideration
 - Offshore Substation Platforms – circa 5000 sq m
 - Geographical extent
 - Turbine spacing can be up to 1 km between turbines
 - Vertical extent from foundation/Anchors to tip
 - fixed bottom foundations being deployed up to 60 m depth
 - Floating structures are already deployed in circa 100 m with potential for circa 1000 m
 - Receiving environment
 - Marine environment is complex with lots of interdependencies
 - knowledge and information gaps





So what?

Not new...

- Commercial scale subsea oil and gas exploration and extraction since the 1960s
- A lot of learning available in terms of subsea structures in the marine environment
- Maturing sector – now construction and operational monitoring data available

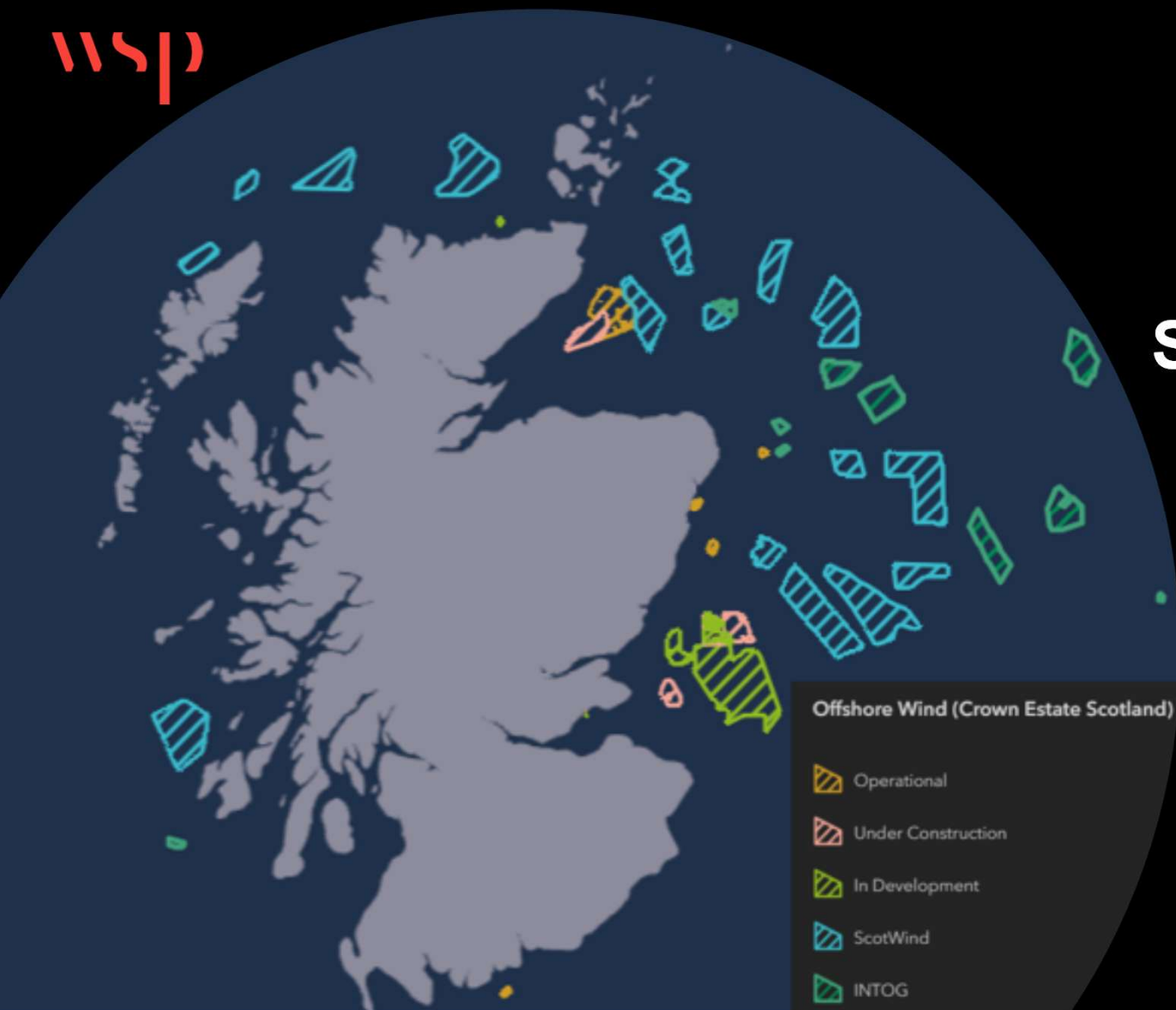
Necessary...

- UK net zero targets
- increasing demand for electricity
- security of supply

Pushing boundaries...

- Health and safety considerations around offshore deployment for survey data
- Habitats regulations, derogation and adaptive management
- Collaborative ways of working
- Wellbeing of those working in EIA and consenting





ScotWind vs INTOG

ScotWind

“ScotWind is the first major offshore wind leasing round in Scottish waters in over a decade.”

2020  ScotWind launched

2022 Results announced

32.3 GW Final capacity awarded
10 GW expected (vs. 10 GW expected)

19 Fixed-bottom



Fixed-bottom Floating

€ Multi-billion pound investment

 Supply chain growth

 Fixed-bottom
 Floating

 Operational
 Under Construction
 Consented

SITE	DEVELOPER	CAPACITY
Robin Rigg	RWE Renewables	174MW
Hywind Scotland	Equinor	30MW
Aberdeen Bay	Vattenfall	93MW
Levenmouth	ORE Catapult	7MW
Beatrice	SSE/Red Rock Power	588MW
Kincardine FOW	KOVL	48MW
Moray East	Ocean Winds	950MW
Seagreen 1	SSE Renewables/TotalEnergies	1075MW
NNG	EDF Renewables/ESB	448MW
Moray West	Ocean Winds	882MW
Inch Cape	Red Rock Power/ESB	1142MW
Seagreen 1a	SSE Renewables/TotalEnergies	420MW
ForthWind	Clerco	12MW
Pentland FOW	Copenhagen Infrastructure Partners	100MW
Berwick Bank	SSE Renewables	4150MW

4295MW

5824MW

Total = 10,114MW
Floating Wind = 178MW (1.8%)



Option Agreements

Planning & Consenting

Construction

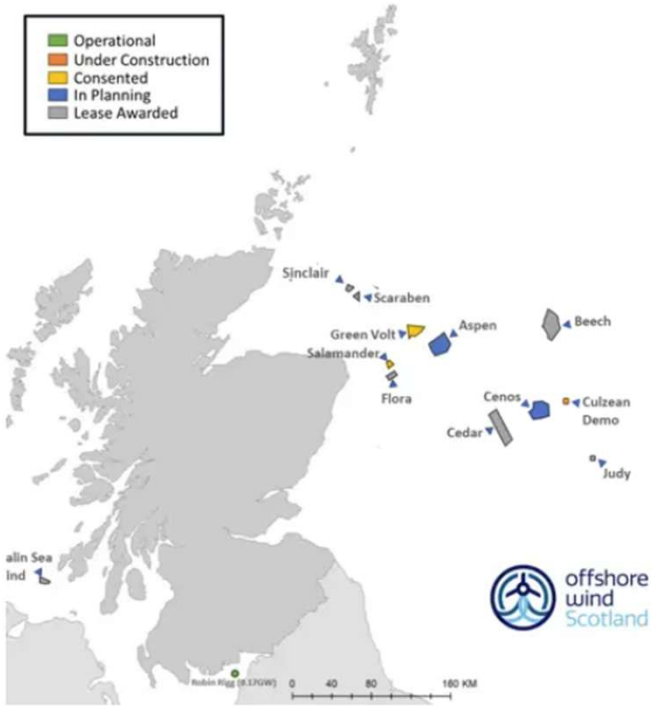
Operation



■ **Innovation and Targeted Oil & Gas (INTOG)** is a leasing round for offshore wind projects that will directly reduce emissions from oil & gas production and boost further innovation

- 1) **IN** - Small scale, innovative projects, of less than 100MW
- 2) **TOG** - Projects connected directly to oil and gas infrastructure, to provide electricity and reduce the carbon emissions associated with production

2022	2023
Leasing round launched by Crown Estate Scotland	12 projects awarded Exclusivity Agreements
Electrify Oil & Gas Platforms	Promote Offshore Wind Innovation
Supports North Sea Transition Deal	Contributes to Scotland's 2045 Net Zero



SITE NAME	DEVELOPERS
Green Volt	Flotation Energy/Vargrønn
Culzean Demo	TotalEnergies
Salamander	Ørsted/Simply Blue Group
Cenos	Flotation Energy/Vargrønn
Aspen	Cerulean Winds
Beech	Cerulean Winds
Cedar	Cerulean Winds
Flora	BP Alternative Energy Investments
Judy	Harbour Energy
Malin Sea Wind	ESB Asset Development
Scaraben	BlueFloat Energy/Nadara Partnership
Sinclair	BlueFloat Energy/Nadara Partnership

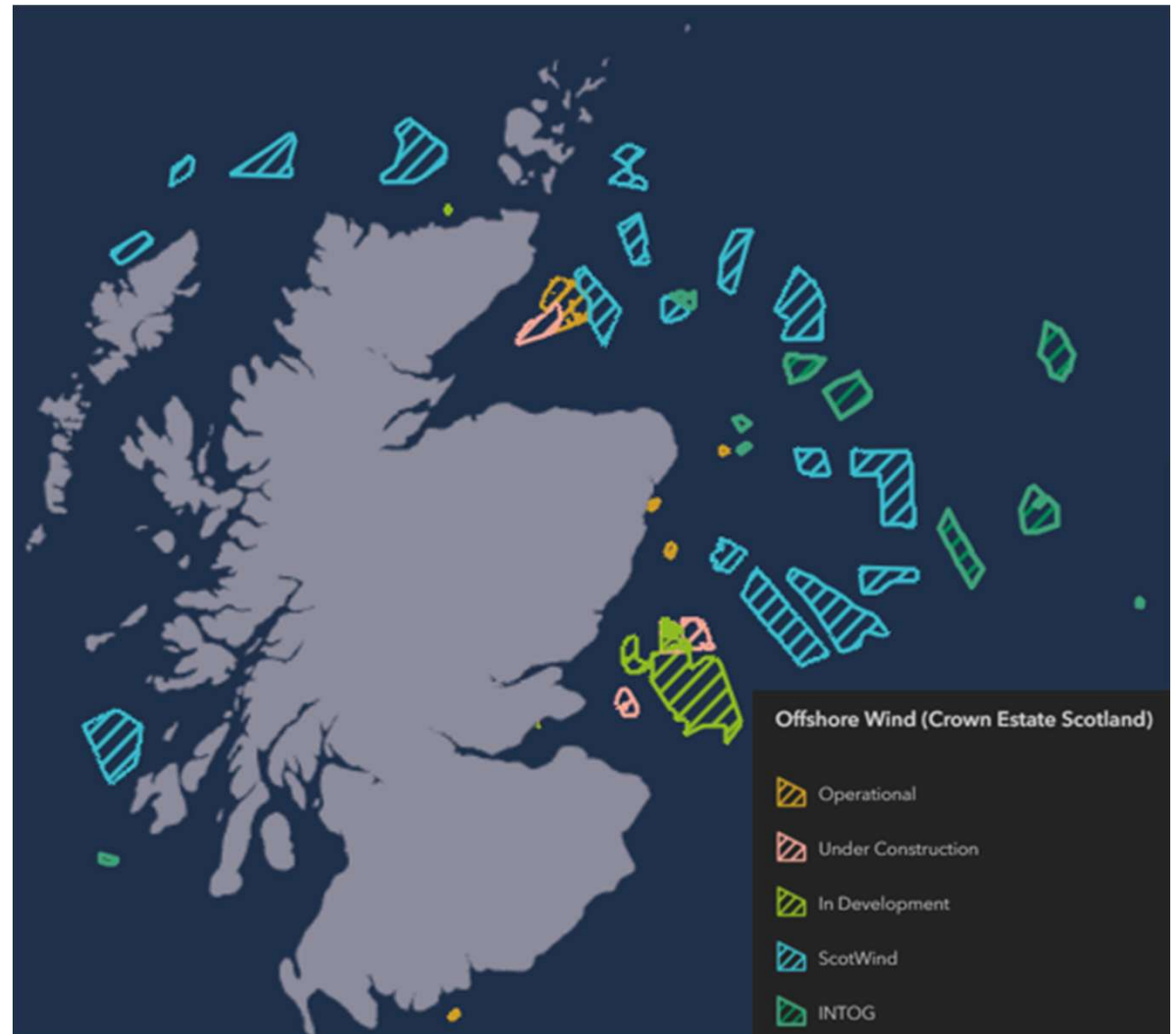
INTOG Leasing round
5.4GW

All projects are floating!

wsp Linkage to EIA

- The areas are defined by Crown Estate Scotland
- It's a competitive process
- **First point where, as a developer, you start to influence your EIA!**

Leasing site selection isn't just a box-ticking exercise. It's about making real choices early on that will shape your project, your technology, and your environmental outcomes





Policy Drivers

Onshore Policy Context

Climate Legislation & Targets:

- UK Net Zero by 2050
- Scotland Net Zero by 2045
- Offshore wind as a key delivery mechanism

Policy Drivers:

- UK and Scottish Government commitments
- Increasing scale of deployment (ScotWind, INTOG)

Statutory Development Plan Framework:

- Local Development Plan (LDP): Sets out land use policies at local authority level
- Key for onshore grid connections and associated infrastructure
 - National Planning Framework 4 (NPF4): Sets national spatial strategy and policy tests
 - Policy 1: Tackling the climate and nature crises
 - Policy 11: Energy Policy
 - National Developments: Is your project considered a National Development?

Policy Tests & Recent Determinations:

- What are the applicable policy tests for your project?
- What issues have come up in recent hearings?
 - Surface flood risk vs. coastal protection
 - Loss of agricultural land
 - Landscape and visual impacts



National
Planning
Framework 4



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Marine Planning Hierarchy	Current Status & Challenges	EIA Considerations
National Marine Plan (NMP)	NMP out of date, NMP2 due next year	Prepare for more robust tests in NMP2
Sectoral Marine Plan (SMP)	SMP draft out now (ScotWind/INTOG)	Review draft SMP findings
Regional Marine Plans	Shetland and Clyde have active RMPs – others in development	Acknowledge context in EIA

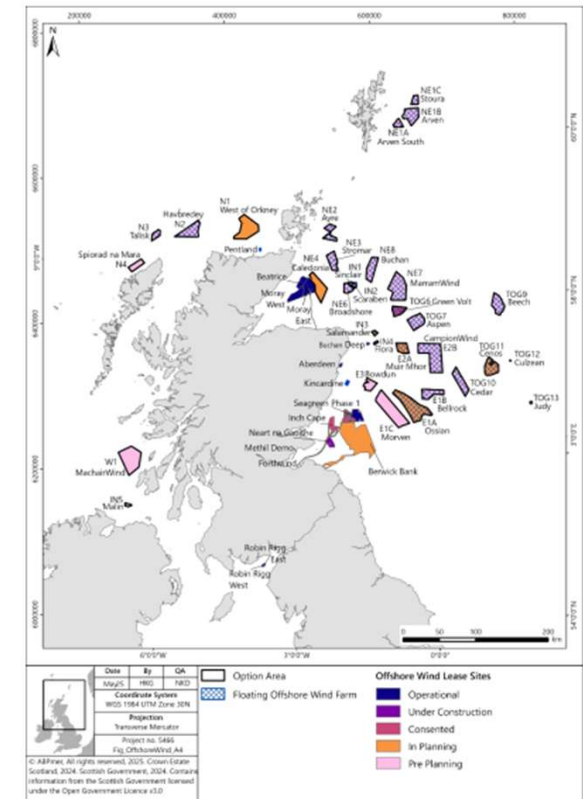


Figure 1. Map of Scotland's offshore wind pipeline, up to date at time of preparation of this draft updated SMP-OWE (March 2025). Areas outlined in black are the OAs included in this draft updated SMP-OWE.

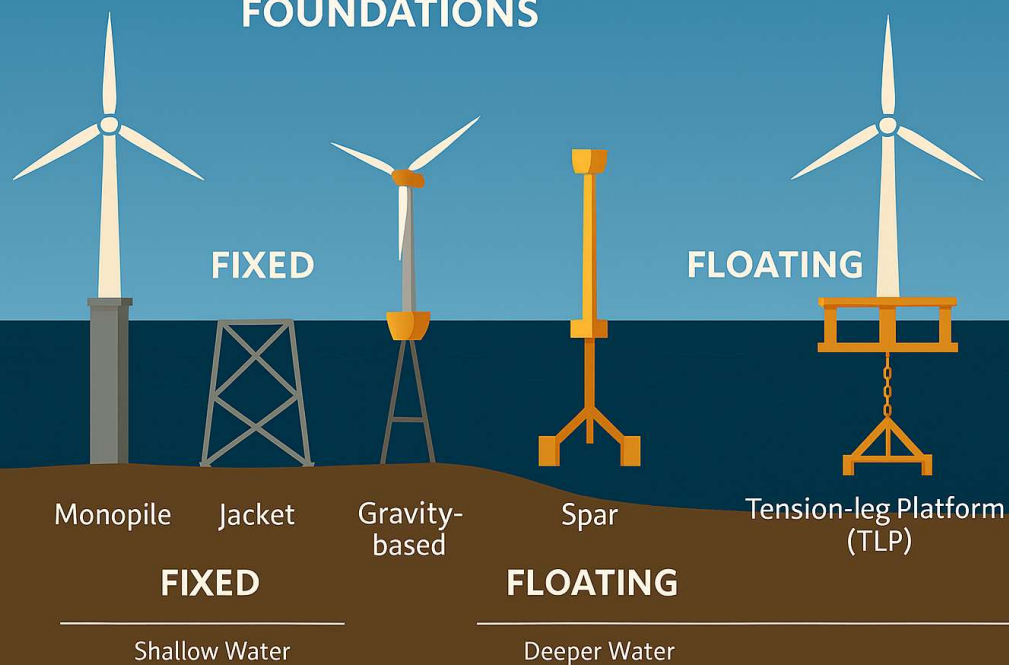
No legal precedent that NPF4 doesn't apply to offshore wind - so consider it as relevant



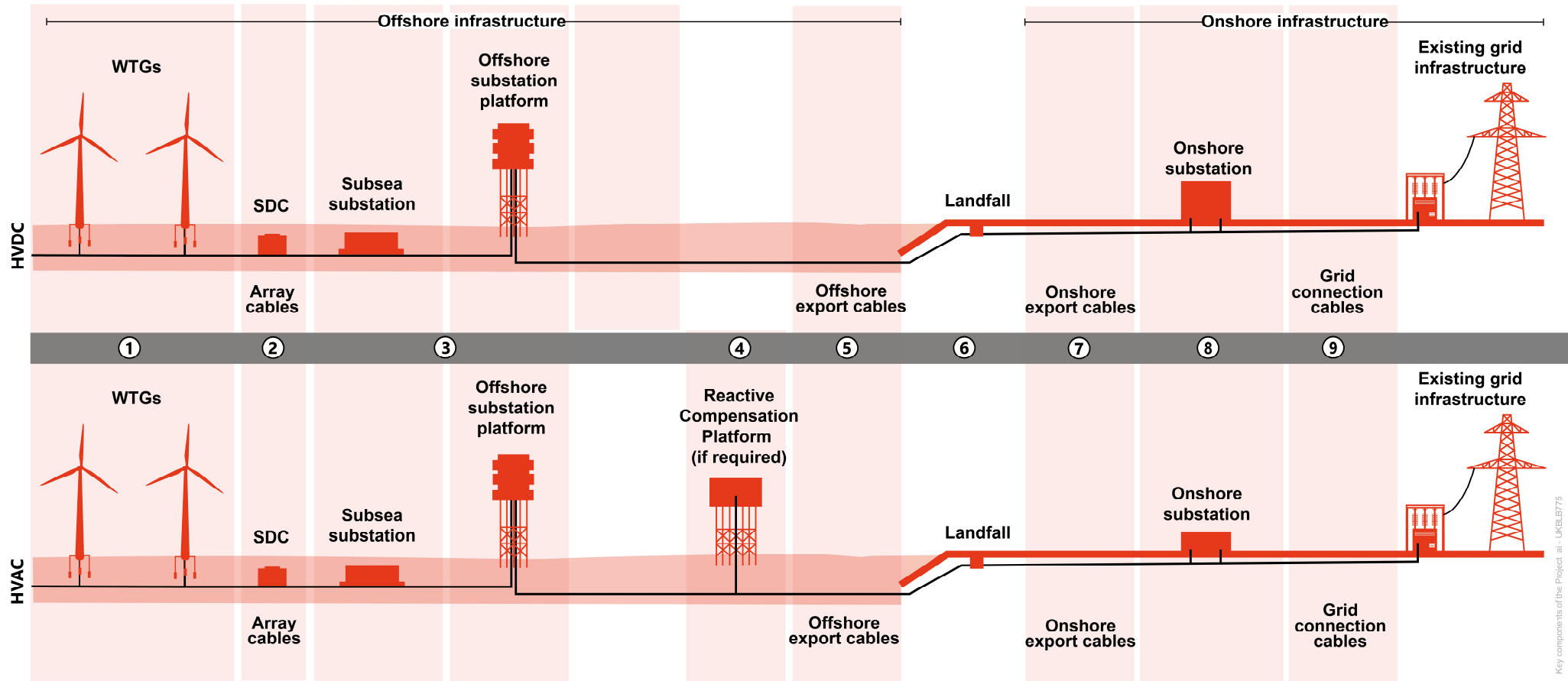
**What components
do I need?**

WSP Fixed vs Floating

TYPES OF OFFSHORE WIND FARM FOUNDATIONS



CATEGORY	FIXED OFFSHORE WIND	FLOATING OFFSHORE WIND
Foundation Type	Monopiles, jackets, gravity-based structures anchored to seabed	Floating platforms (spar, semi-submersible, tension-leg) tethered to seabed
Water Depth Suitability	Shallow waters (<60m)	Deep waters (>60m)
Installation & Maintenance	Heavy seabed preparation, large installation vessels	Assembled onshore and towed; easier maintenance
Environmental Impact	Greater seabed disturbance	Lower seabed impact
Cost & Commercial Maturity	More mature and cost-effective	Higher upfront costs, decreasing with innovation
Wind Resource Access	Limited to nearshore areas	Access to stronger wind resources in deeper waters
Visual Impact	Closer to shore, more visible	Farther offshore, reduced visual impact





HVDC (High Voltage Direct Current) vs HVAC (High Voltage Alternating Current)

Feature	HVDC	HVAC
 Current Type	Direct Current (DC)	Alternating Current (AC)
 Best for	Long-distance transmission (typically >80–100 km offshore)	Shorter distances (typically <80 km offshore)
 Conversion	Requires converter stations at both ends (AC ↔ DC)	No conversion needed for standard grid connection
 Cost	Higher upfront cost (converter stations) but lower transmission losses over long distances	Lower initial cost but higher losses over long distances
 Offshore Wind Use	Ideal for large-scale, far-from-shore wind farms (e.g. ScotWind)	Common for near-shore wind farms
 Losses	Lower over long distances	Higher over long distances due to capacitive losses in subsea cables
 Complexity	More complex technology and control systems	Simpler and widely used grid technology

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Consenting Framework

Onshore Consents

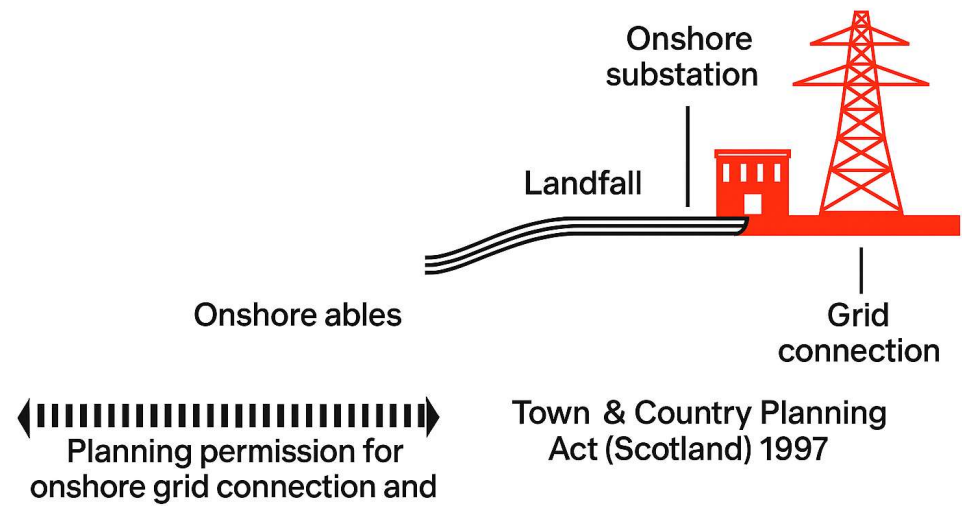
- **Consenting Authority:** Local Planning Authority (LPA)

- **Key Onshore Consents:**

- Deemed Planning Permission (rare in practice)
- Planning Permission in Principle (PPiP)
- Full Planning Permission

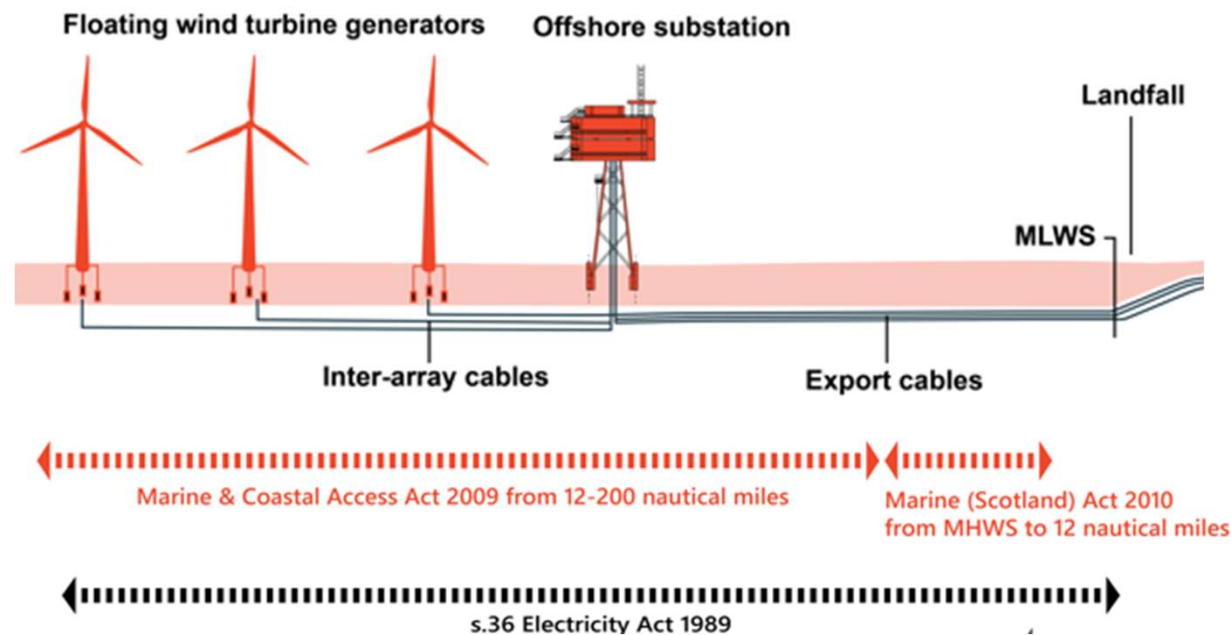
- **Key Considerations:**

- Multiple LPAs may be involved
- Robust consultation and engagement required
- Public perceptions and community impacts





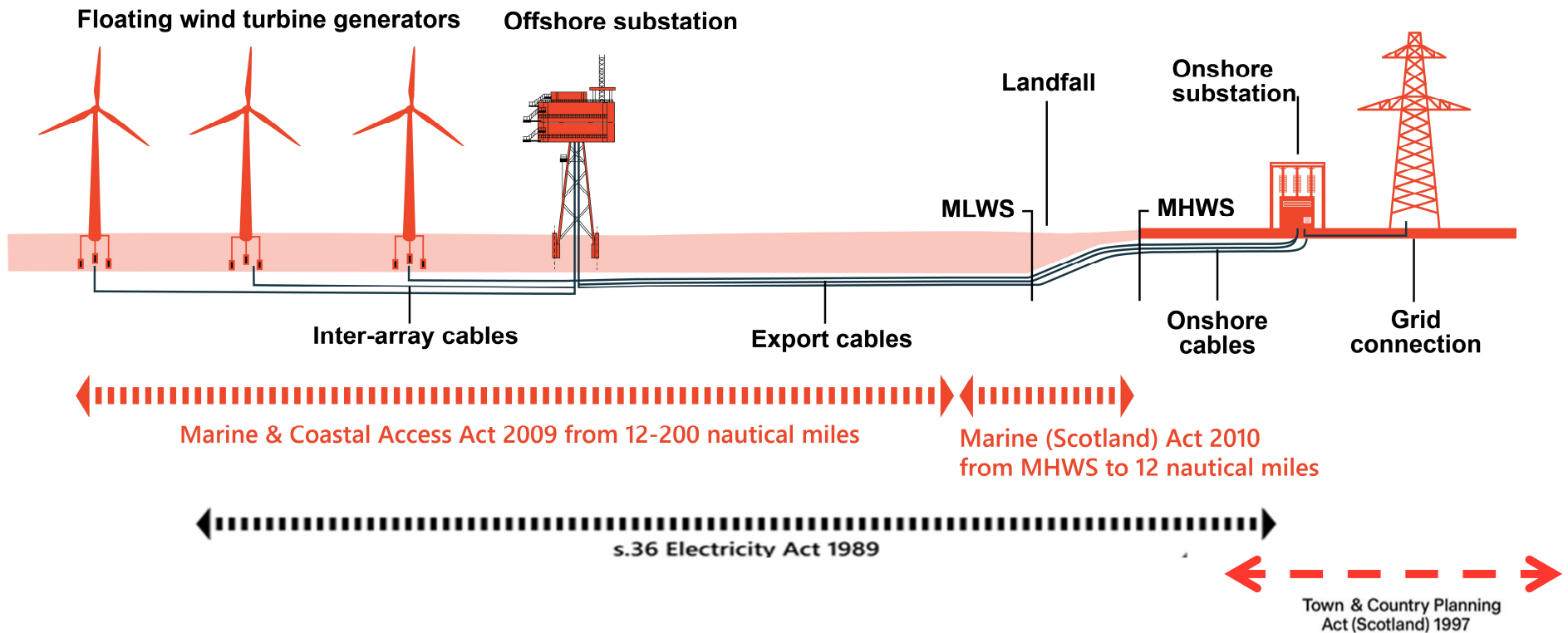
Offshore Consents and Licenses



- **Consenting Authority:** Scottish Ministers (Marine Directorate – Licensing Operations Team, MD-LOT)
- **Key Offshore Consents:**
 - **Section 36 (Electricity Act 1989):** For generating stations (wind array, offshore substation, array cables) over 50 MW - applies both onshore and offshore.
 - **Marine Licences:** Required for physical works in the marine environment.
 - **Marine (Scotland) Act 2010:** From Mean High Water Springs (MHWS) to 12 nautical miles.
 - **Marine & Coastal Access Act 2009:** 12 to 200 nautical miles.
- **Considerations:**
 - Fixed vs. floating wind - licensing needs may differ.
 - Multiple licences per project (generation, transmission, construction, etc.).
 - Consultation requirements - especially for nearshore works.

WSP Consents in Offshore Wind

“What’s missing from this picture?”



Bringing onshore and offshore consents together highlights a complexity and the need for joined-up expertise



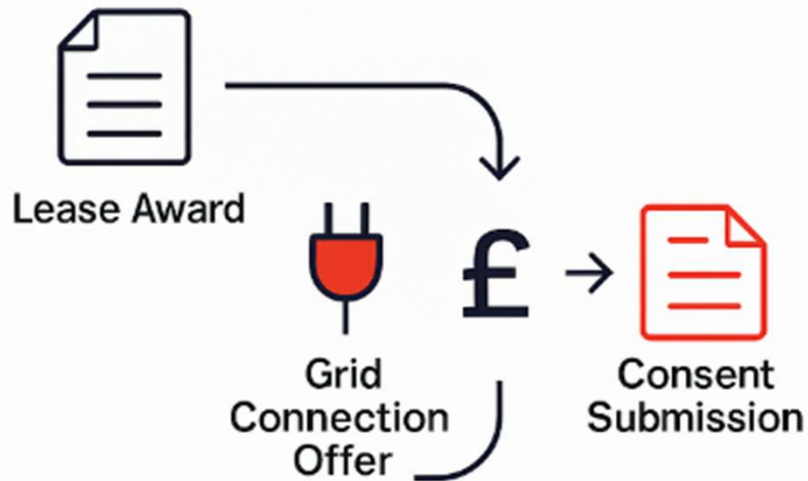
Additional Offshore Consent Requirements

New Marine Licence Submission Requirements (April 2025):

- Mitigation and Monitoring Plan (now mandatory)
- Navigational Risk Assessment
- Environmental Impact Assessment
- Habitats Regulations Appraisal
- Marine Protected Area Assessment

- **Safety Zone Applications:** Required under the Energy Act 2004 & Safety Zones Regulations 2007
- Protects people, vessels, and infrastructure during:
 - Construction
 - Pre-commissioning
 - Major maintenance
 - Decommissioning
- **Rolling safety zones:** Temporary 500m buffers that move with active works

Why Progress Consents & EIA Early?



🔌 Grid & CfD are externally timed - developers must align consents to secure access

📄 Lease obligations require progress within set milestones

📅 Delays risk losing grid, CfD, or lease rights

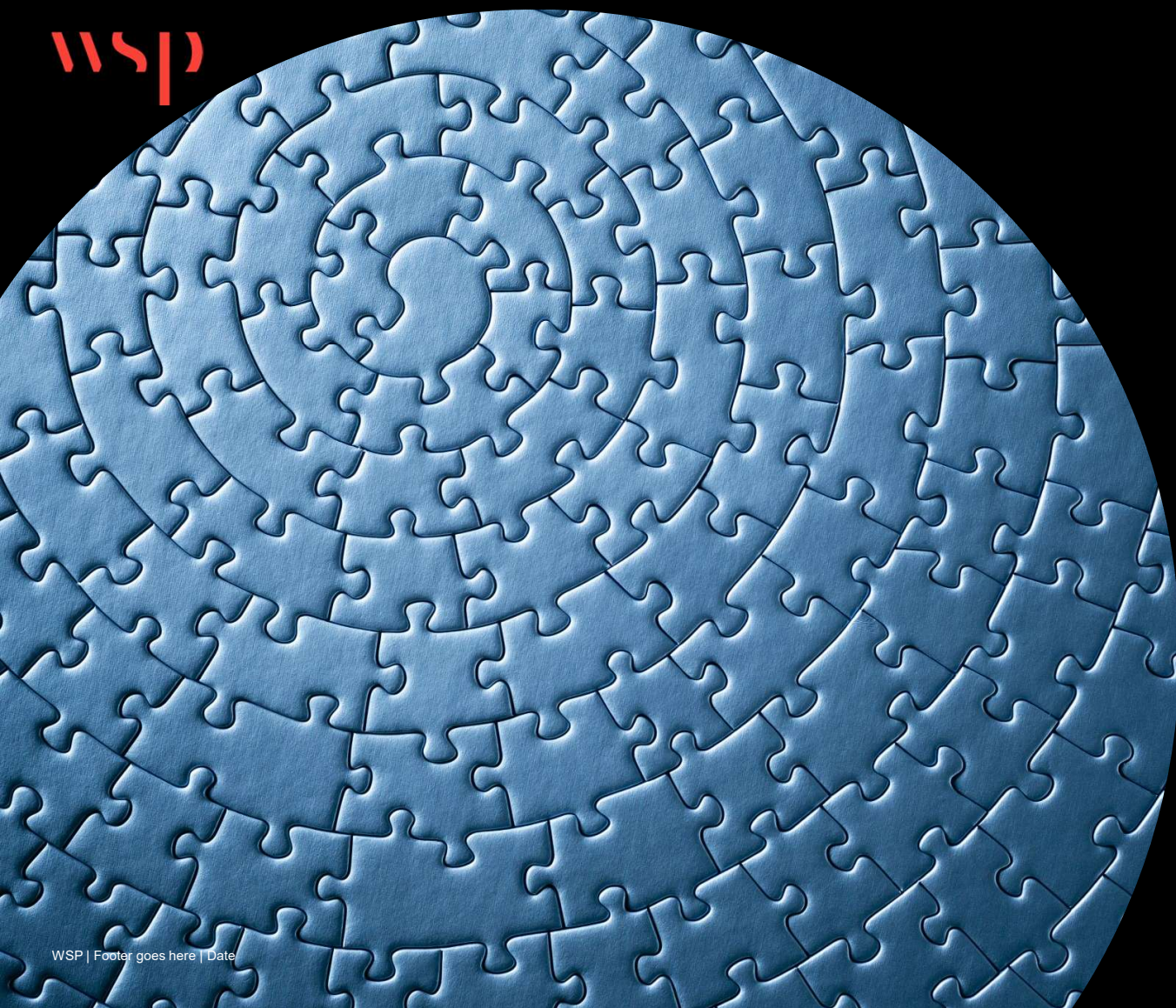
📄 Consent (EIA/Planning) - Design Envelope (Rochdale) allows flexibility while assessing environmental impacts. Early consents enable stakeholder engagement and regulatory confidence.

Why Progress Consents & EIA Early in Offshore Wind?

WHAT?

WHERE?

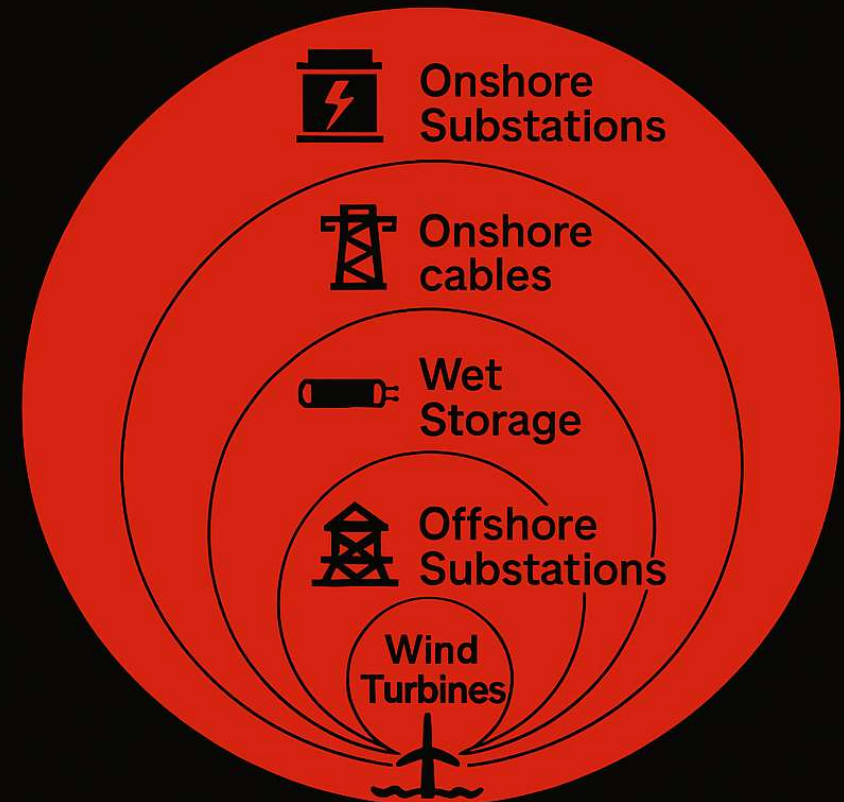
WHEN?



EIA Strategy

What is “The Project”?

- EIA regulations all require assessment of “the Project”
- Most onshore projects can be defined and delineated with some clarity
- Offshore wind has varied approaches to consenting and construction
- Challenges due to design maturity, project competitiveness (CfD) and external factors (grid connections)
- Careful thought needs to be given to:
 - defining the number of individual EIARs,
 - the scope of each and what components are being included and assessed in each
 - The approach to whole project and/or cumulative assessment





Rochdale Envelope and Maximum Design Scenario

Underpinned offshore wind EIA since early 2000s

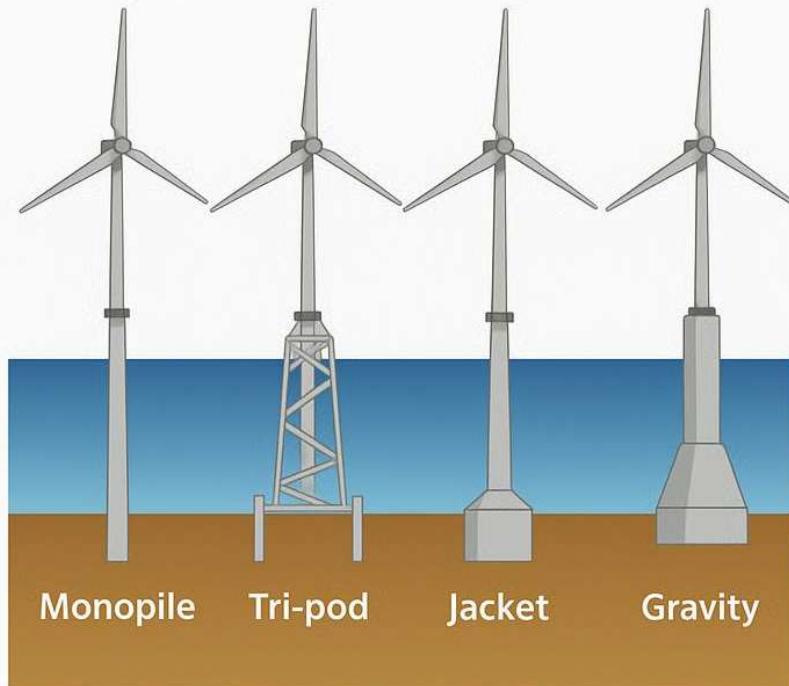
Driven by uncertainty in ground conditions and technology

Fully explored and concept developed during Round 3

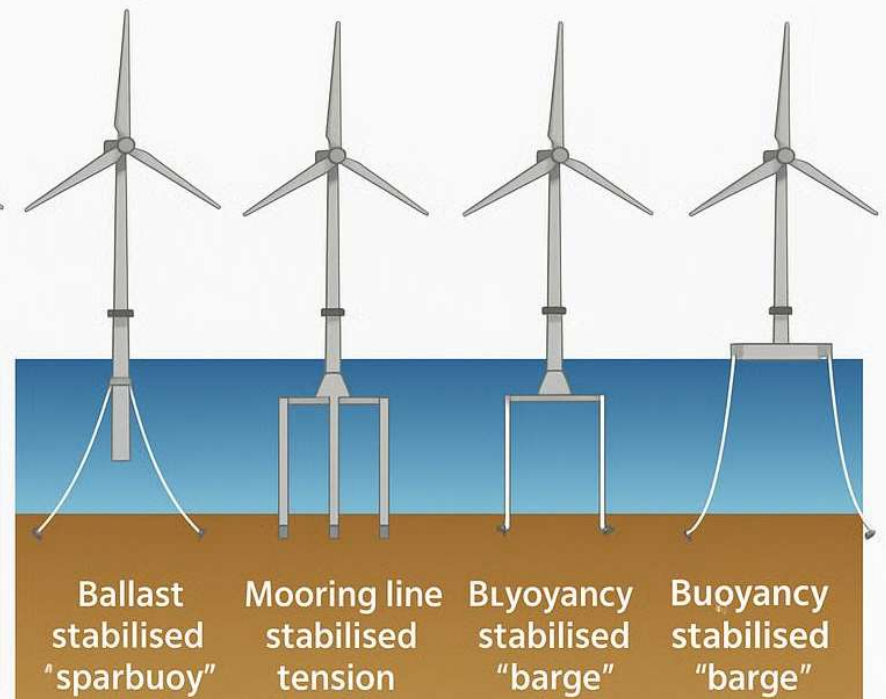
Envelope of parameters for all infrastructure developed

Concept of Realistic Worst Case or Maximum Design Scenario

Fixed-Bottom Foundations



Floating Foundations



- How do you define the worst case?
- Is it the same for every assessment and receptor?
- How would you consider a mix of foundation types?



How do we make this proportionate?



Complex worst case scenarios can mean more assessment



Increased burden for stakeholders and regulators



Lack of focus on significant effects that equate to high consent risk



Information perceived to be inaccessible for non-technical stakeholders



Focus Area: Collaboration

- Unparalleled scale of projects requiring to be determined in a similar time frame
- Request from Scottish Government for regional aerial bird surveys
- Development of Cumulative Effects Framework slow
- Potential for projects to require derogation under Habitats Regulations
- No guidance or mechanisms in place to secure compensation beyond “project” level



- Funded by Scottish Offshore Wind Energy Council
- Collaboration between offshore wind developers and Scottish regulators
- ‘Good Practice Mitigation Library’
- suitability review of Nature Inclusive Design measures.



Focus Area: Collaboration

- Multi disciplinary approach embedded from project kick off
- Strong engineering and design support essential
- “One Team” approach – no one has all the answers!
- Clear roles and responsibilities for developer and consultants
- Buy-in to iterative design
- Face to face working beneficial at key points
- Programme, programme, programme!





Focus Area: Stakeholder Engagement

Aspect	Consultation	Engagement
Purpose	Gather formal feedback	Build relationships and understanding
Timing	Specific stages	Ongoing throughout project
Format	Structured responses	Dialogue, events, digital tools
Legal requirement	Often statutory	Often voluntary
Audience	Statutory consultees, public	Wider community, interest groups
Approach	Reactive	Proactive

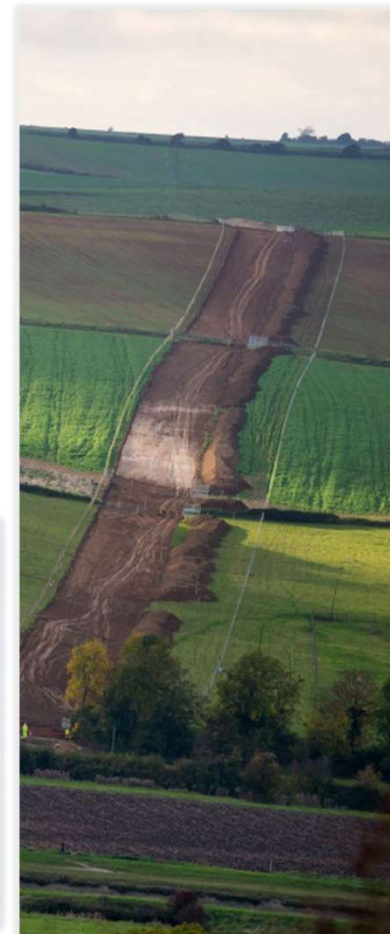


Rampion 2 Offshore Windfarm



▪ Overview

- **Expansion of existing Rampion 1 offshore wind farm** located in the English Channel off the Sussex coast
- Up to **90 wind turbines** off the Sussex coast
- **Subsea cables** to bring the power to shore and an underground cable route will take the power to a new substation, before reaching final connection into the transmission network at Bolney, Mid Sussex (~36km buried cable route)
- Nationally Significant Infrastructure Project (**DCO Consenting Process**)
- On **4th April 2025**, the Secretary of State for Energy Security & Net Zero, Rt Hon Ed Miliband, **awarded consent for Rampion 2**



Rampion 2 Offshore Windfarm

Programme

- Non-statutory consultation 2020
- X 4 Statutory Consultations 2021-2023 to present design changes
- DCO submission: August 2024
- Examination closed: August 2024
- Decision: April 2025

5 years





Rampion 2 Offshore Windfarm

Challenges

- Onshore design change and stakeholder management unwieldy and lengthy
- Lack of engineering support meant design not 'tested' fully prior to consent and decision-making challenging
- Nebulous scope which was a challenge to manage commercially

Key Learnings on Stakeholder Engagement

Develop a Strategy at the outset

- Why do you want to engage?
- Who do you want to engage with?
- How will you build trust to develop these relationships?
- When are the optimum times to share information and welcome feedback?
- How will you maintain trust when you cannot respond in the way that the stakeholder would like?
- How can you capture and use the knowledge and experience to inform your design and application?



People not Process

- Focus on building relationships with affected stakeholders
- Listen to the needs and wants of the community
- In the offshore environment this includes groups such as fishers who can be hard to reach and have limited time.
- Think carefully about the use of Digital and AI – use to enhance inclusion and avoid marginalising
- Focus on the purpose of the engagement



Focus Area: Health and Wellbeing

▪ Project

- Complex interfaces and interdependencies with the EIA
- Pressure to deliver to programme and budget
- Managing uncertainty in design and decision making
- Volume of material to read, write and/ or review
- Travel requirements / remote locations
- Ethical concerns and emotional toll of engagement

▪ Person

- Physical fatigue
- Mental fatigue
- Work Life balance upset
- Lack of motivation
- Overwhelmed
- Isolation
- Burnout

▪ Business

- Reduced / low productivity
- Low morale
- Absence
- Delivery issues



Offshore Wind – Interactive Stress Risk Workshops

How do you react when you feel stressed?

A word cloud of various reactions to stress. The words are arranged in a circular pattern. The words include: 'nothing', 'anxious', 'silent', 'feel sick', 'panic', 'snap', 'angry', 'sweaty', 'worry', 'laugh', and 'short tempered'. The word 'angry' is the largest and most central.

- Psychological safety - anonymized data
- Collaborative and open
- Initial pulse check
- Interactive white board questions:
 - Demands of the role
 - Support networks at work
 - Relationships and Behaviours
- Teases out stressors and blockers
- Followed by brainstorming improvement measures
- Putting the feedback into action:
 - Working with leaders identify which improvements measures are to be implemented
 - Engagement with client
 - Feedback loop to EIA team



Key Takeaways



Key Takeaways: EIA in a Vacuum vs. Part of the Puzzle





Key Takeaways



Programme - Realistic and well-structured programming is essential for managing timelines, resources, and delivering coordinated project outcomes.



Proportionality - Effort should be proportionate to risk, scale, and complexity - focusing resources and technical write-up where they matter most.



People - Having the right people, with the right skills and mindset, is key to delivering high-quality EIA and project outcomes alongside a clear engagement plan for other.



THANK
YOU!

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