



Triton Knoll Offshore Wind Farm Project

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EV172: TCE supply chain event Bristol

Atlantic Array Offshore Wind Farm

Offshore wind farm supply chain event

9th March 2010



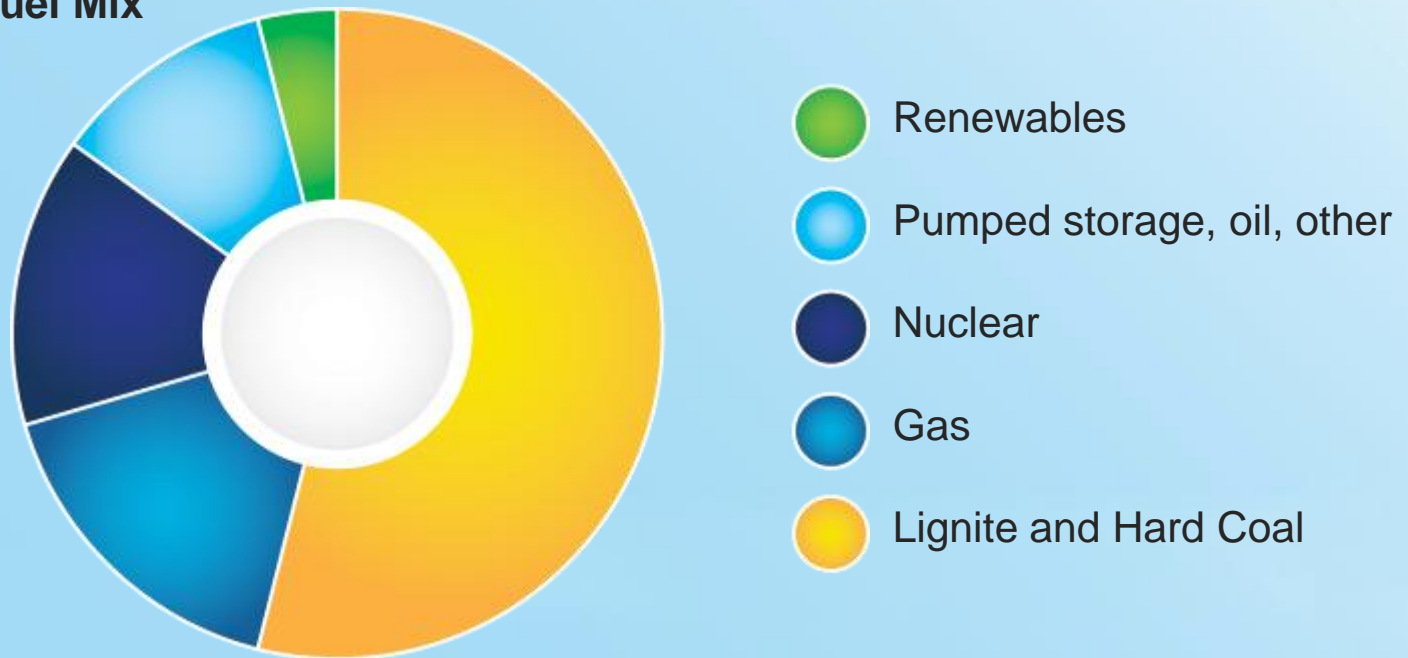
RWE npower renewables

An **RWE** Innogy company

RWE's Generation Portfolio

- RWE supplies electricity to 20 million customers
- RWE Innogy established 2008 to reduce RWE's carbon intensity

RWE Current Fuel Mix



RWE npower renewables

- RWE Innogy committed to spend €1.1 billion per year until 2013

	2009	2013	2020
RWE's renewable capacity (GW)	1.7	4.5	10
% capacity	4	10	17

- Estimated it will cost > £100 billion to deliver the UK EU targets

RWE in the South West

- Bears Down Wind Farm in Cornwall operating since 2001 with 16 turbines.
- 2 key RWE offices in Wiltshire; Npower & Npower Renewables – 1,181 employees combined
- Strong links to Bristol Port since early '90's as primary coal import for Didcot & Aberthaw. Contracts with a number of service providers: rail, coal handling, shipping, tugs, all employing local workforce
- Investment of c. £110M to develop Royal Portbury Dock.



UK Market Leader in Offshore Wind

Round 1

- North Hoyle, the first commercial offshore wind farm in UK
- Rhyl Flats commissioned December 2009

Round 2

- Greater Gabbard in construction
- Gwynt y Môr consented
- Triton Knoll in development

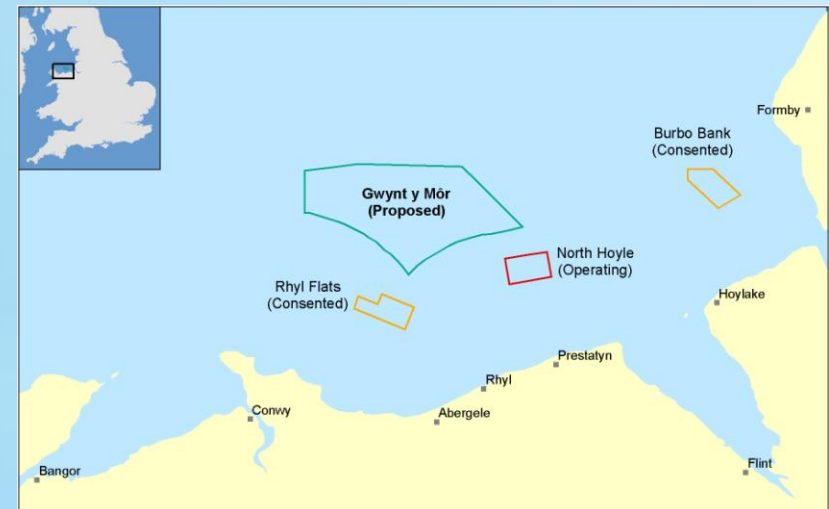
Round 3

- Sole developer for Bristol Channel Zone
- 25% Stake in 'Forewind' - Dogger Bank

North Hoyle



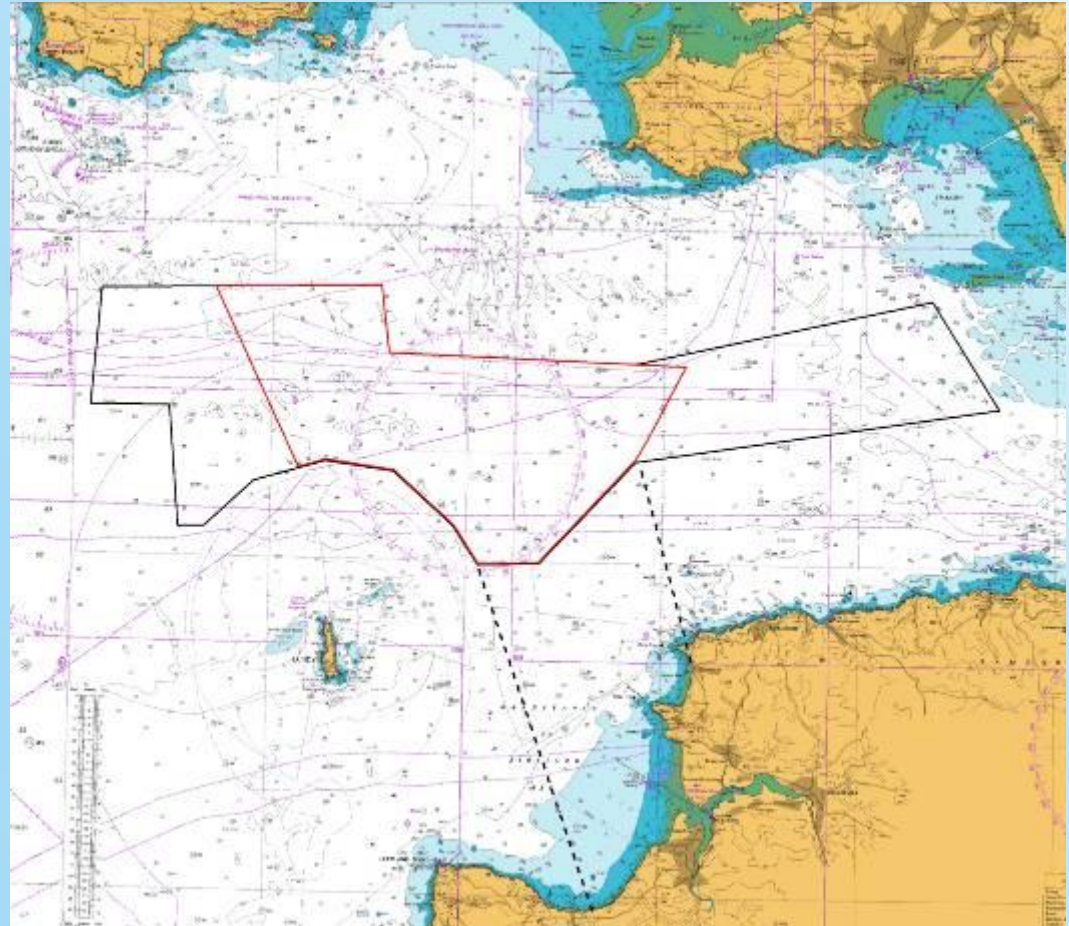
Rhyl Flats



Developing Zone 8

The Atlantic Array Project

- 1500 megawatts
- c. 250 wind turbines
- Depth 23m to 56m
- 7m to 8m tidal range
- 14 km from Devon and 16 km from Wales at closest points
- Connected to Grid at Alverdiscott sub-station, Devon
- Project large enough to supply 1.1 million households - equivalent to 47% of domestic consumption in South West region

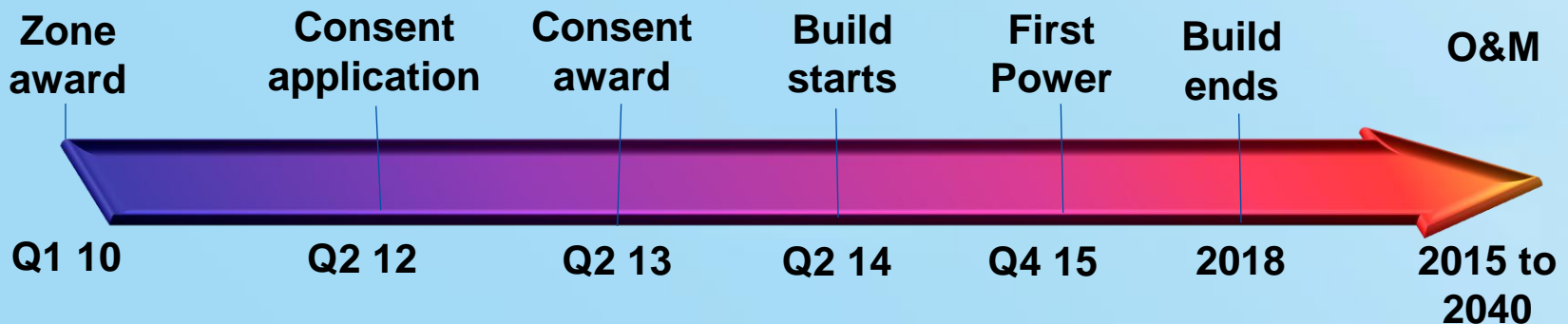


Atlantic Array – The Challenges

- Deeper water, larger turbines and challenging wave and wind climate requires novel design
- O&M efficiency essential to project economics
- New scale of construction creates opportunity for UK.
- Build on experience from consultancy, construction, marine and offshore oil and gas industries



Project Programme



Project lifecycle

Development

- Spend primarily in UK
- Environmental Impact Assessment:- specialist consultants, marine ecology, archaeology, marine traffic, radar, bird studies, land purchase, planning, legal, PR, fisheries
- Project Design:- site investigation and survey, civil, mechanical and electrical engineering



Project lifecycle

Construction

- Turbines, foundations and electrical equipment historically sourced largely from outside UK
- Round 3 is an opportunity to re-invigorate UK manufacturing.
- Local skills used:
 - Design and civil works for offshore and onshore infrastructure
 - Secondary services & components – vessels, paints, bespoke fabrication
 - Auxiliary services – fuel and lubes, catering, professional services, local accommodation



Project lifecycle

Operation and Maintenance

- Long term O&M (25yrs+)
- New scale of O&M requirements and development of new technologies
- Up to 200 full time jobs
- Up to £50m/yr O&M spend
- Significant training requirements - Sea Survival, Medical, Rope Access, HSE



Bristol Channel Port Infrastructure

- Long-term operations port ideally located close to site
- Construction port could be further from Atlantic Array site
- Ports are gateway to benefits for secondary and auxiliary suppliers
- Ports options work is a key early project activity



Ports create gateway for local supply chain

Rhyl Flats socio-economic study underway

- Study demonstrates benefits to the local community
- Rhyl Flats > 75% spend outside UK
- Local and national spend breakdown within remit of study – results not yet out
- Benefits of local suppliers acknowledged
 - Local knowledge
 - Lower costs
- Local contractors involved at 2nd & 3rd tier levels



RWE is determined to increase local content in R3 projects

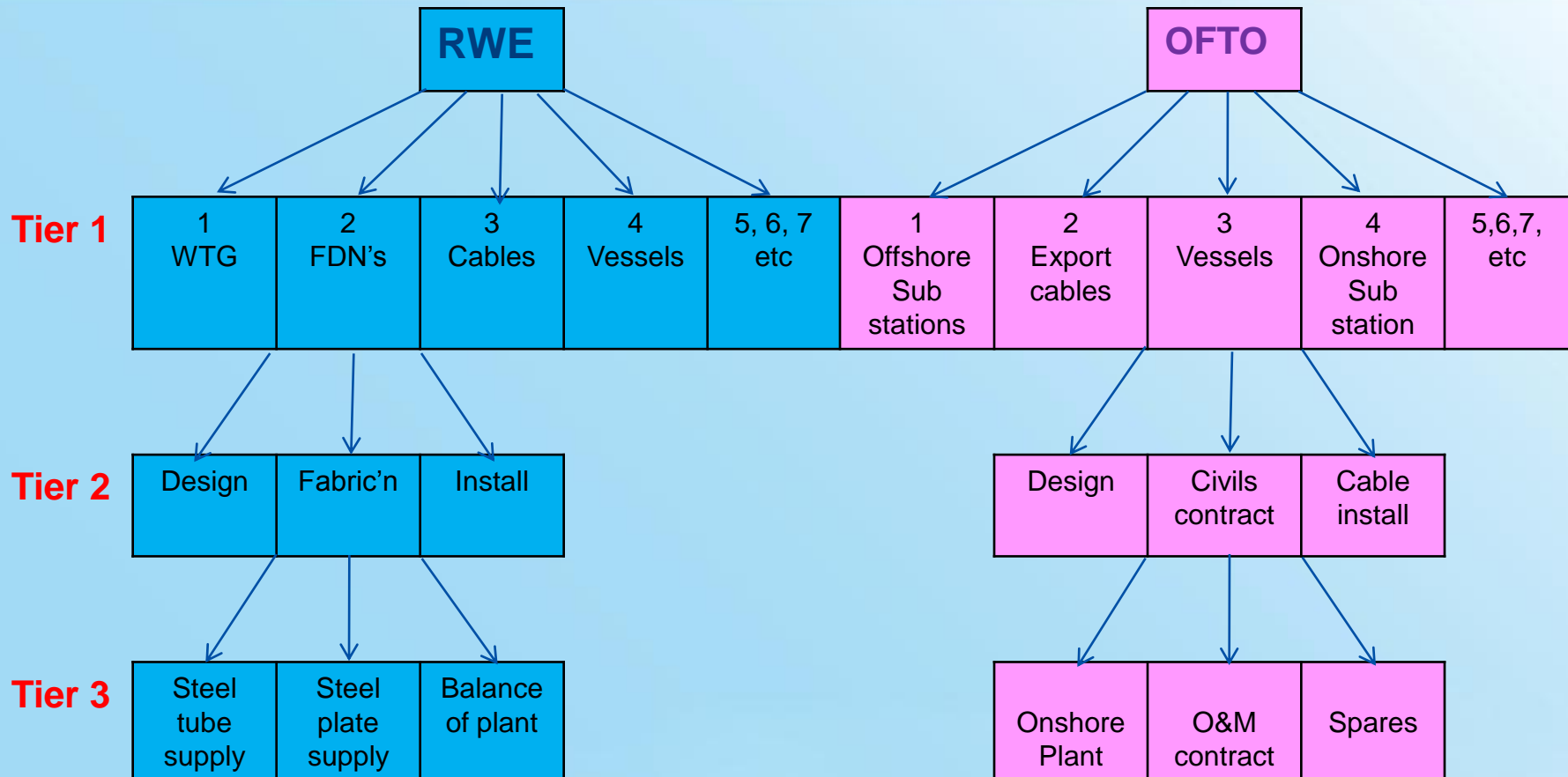
Contracting Strategy

- Principal contract packages procured and let in 2013/2014
- Tier 1 contractors will be publicised
- Opportunity for local and wider UK contractors to tender for Tier 2, 3 etc. work packages
- RWE and OFTO contracting in parallel

RWE will work with Crown Estate, SWRDA and Regen SW to develop database of local contractors and suppliers



Multi-contract procurement envisaged



Multiple work packages at each tier - cascades down to hundreds of suppliers



**Atlantic Array is intended to be one of
the first Round 3 offshore wind farms
and be built with a 'best in class' HSE
record**

**To achieve this RWE npower renewables are
keen to engage with and support the local
supply chain throughout the project**

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