

Offshore Electricity Transmission in the UK

Theory and Practice



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Content

- UK Industry Structure
- Offshore Transmission in the UK
 - Transition (rounds 1 and 2)
 - Enduring regime (round 3)
- Implications

System operation:

Transmission ownership:

NGET

SHET

SPT

NGET

- Scottish electricity transmission system
- English and Welsh electricity transmission system

Offshore Transmission Owners (OFTOs)

Round 1 (9 projects, 2000MW)

4/9 OFTOs appointed

Round 2 (6 projects, 2750MW)

No OFTOs appointed

Round 3 up to 32GW

No OFTOs appointed

0.5GW link to N Ireland

0.5GW link to Rep of Ireland

1GW link to Netherlands

2GW link to France

Offshore Regime Rounds 1 and 2

- Generators built wind farms and the network to shore-based connection points
- Offshore regime requires transfer of network to OFTO selected via a competitive process
- OFTO needs to:
 - Refinance a built asset
 - Provide ongoing maintenance and operation
 - Bids a revenue stream to Ofgem

Round 3

Enduring Regime

- Generators apply to SO for connection
 - SO provides high level design and connection offer
 - Two options.....
- | | |
|---|---|
| <ul style="list-style-type: none">■ <u>Generator Build</u>■ Generator undertakes detailed design, sea bed surveys, obtains consents■ Generator procures, builds, and commissions network.■ Winning OFTO takes over commissioned network, finances, owns, maintains and operates it | <ul style="list-style-type: none">■ <u>OFTO Build</u>■ Generator undertakes detailed design, sea bed surveys, obtains consents for network■ Winning OFTO procures, builds, commissions, finances and owns, maintains and operates network |
|---|---|

Rounds 1 and 2 - Practice

- Ofgem claim £350m savings?

- A case of



and



?

- No design or construction risk,
- Banks can refinance projects more efficiently than network companies
- Project finance approach
 - OFTOs very risk averse – lay off all risks
 - e.g. maintenance and repair risks transferred back to generators
 - Contract inflexibility

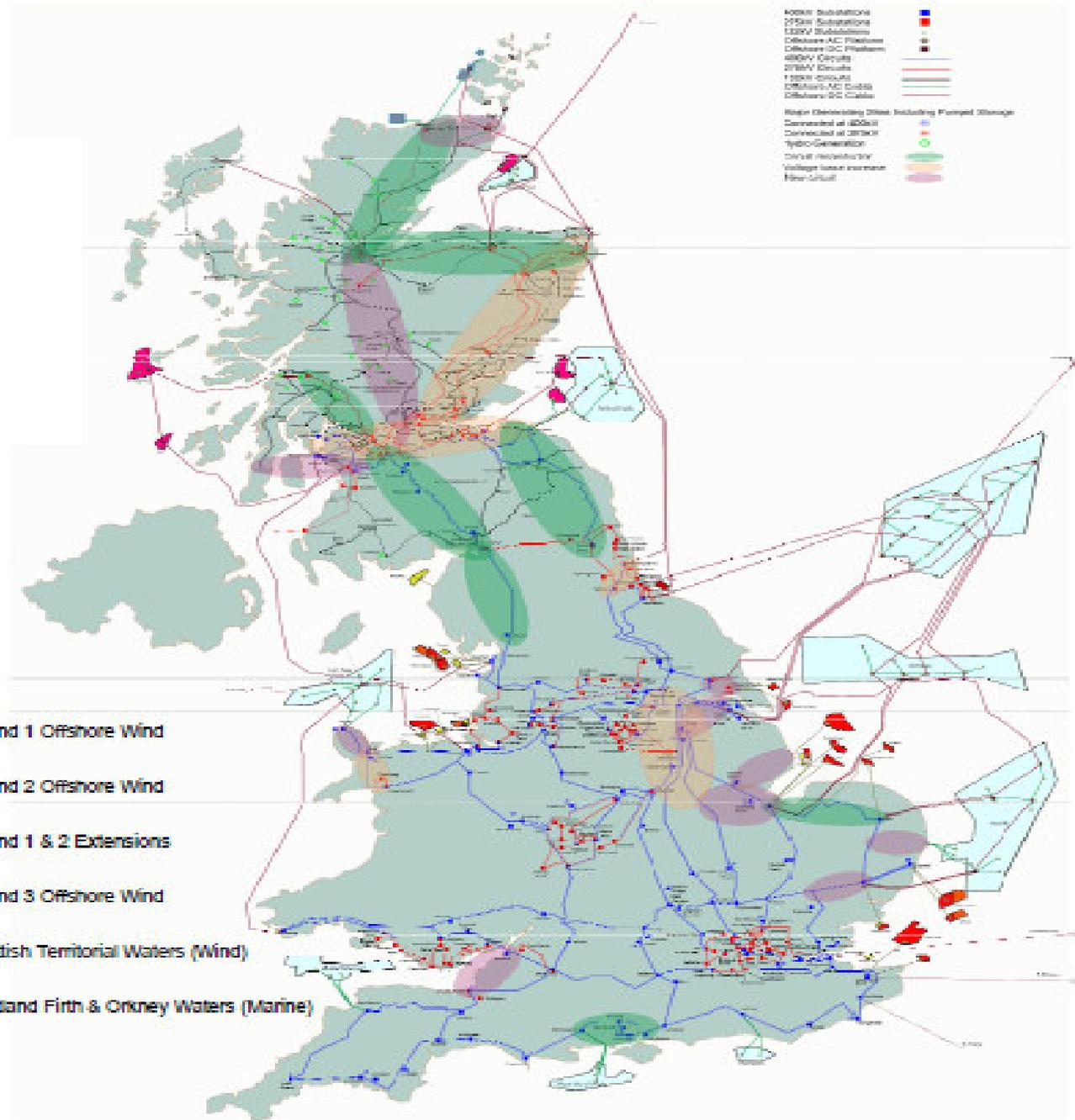
Offshore Transmission in Practice

- All projects “generator build” so far
- No OFTO has yet been prepared to accept design and construction risk (economical design, efficient and timely delivery)
- SO has co-ordination role but no powers – information provision only via ODIS
- Onshore infrastructure planning consent must demonstrate integrated approach

ODIS

Offshore Development Information Statement

-  Round 1 Offshore Wind
-  Round 2 Offshore Wind
-  Round 1 & 2 Extensions
-  Round 3 Offshore Wind
-  Scottish Territorial Waters (Wind)
-  Pentland Firth & Orkney Waters (Marine)



Other Framework Issues

- Compliance with Third Package? (generators involved in design and construction of transmission)
- Scope for Innovation?
- Political uncertainty?

Summary

- Thus far those that really want the network:
 - Have designed and built it, dealt with the risks
 - Will pay for it over project life (incentive for low costs)
- Ofgem have found new sources of finance for low risk network projects
- Future is Uncertain
- Will investors accept construction risk?
- Will the default approach be “generator build”, asset transfer to OFTO and refinance?
- Will the regime deliver - probably?
- At lowest cost for the consumer – probably not?