

Renewable Energy Systems

Powering tomorrow's world

Centrica's Greater Wash developments

Key

- Centrica – Round 1 Projects
- Centrica – Round 2 Projects

Lincs

Inner
Dowsing

Lynn

Docking Shoal

Skegness

Race Bank

King's Lynn

centrica

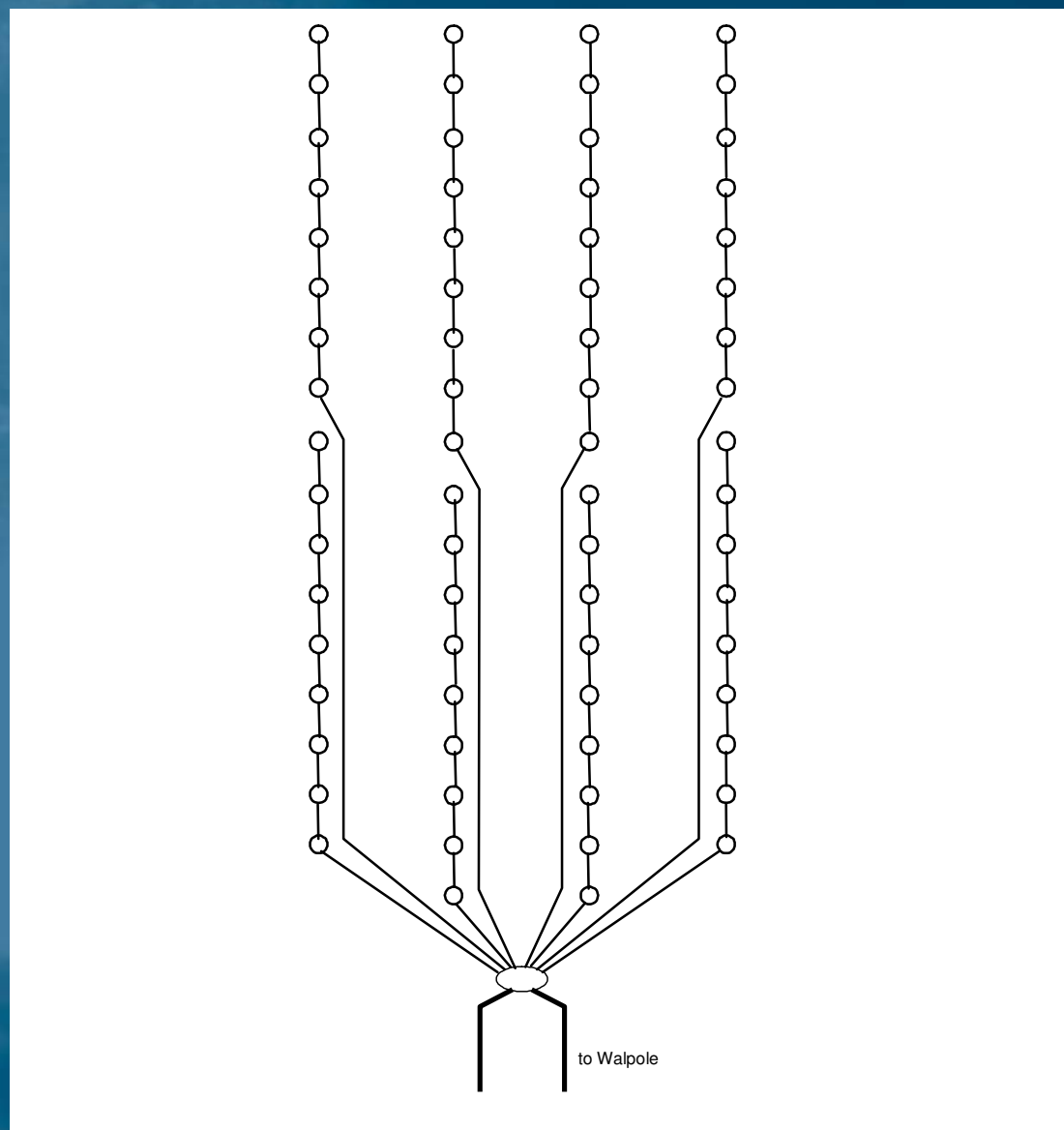
Centrica's R2 Wind Farms

- Lincs
 - 250MW
 - 45-50km route length to shore
- Race Bank & docking Shoal (each)
 - 500MW
 - 65-70km route length to shore
- All connecting to Walpole 400kV
 - 20-25km on shore route length

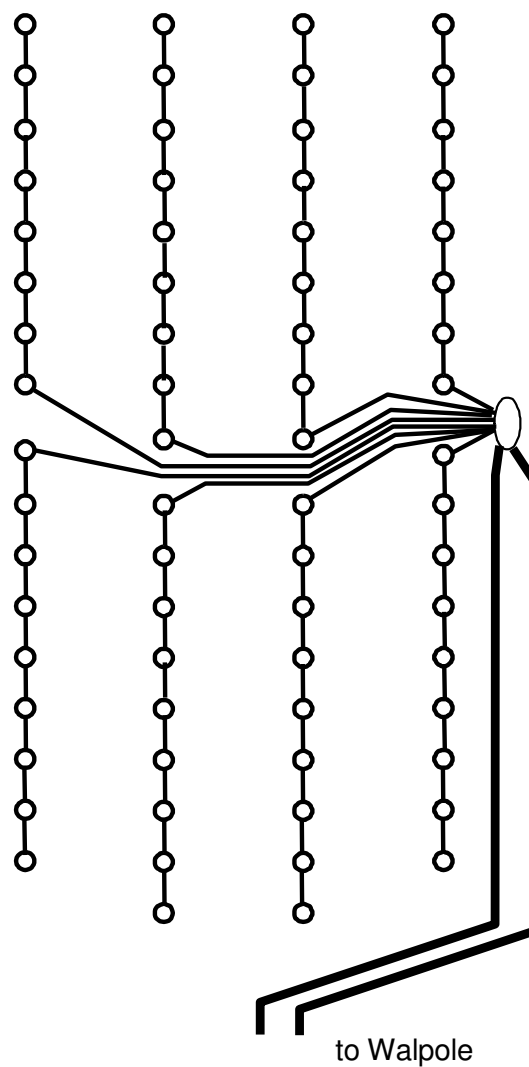
Outline Electrical Studies

- Methodology for identification and rationalisation of viable options
- Analysis of
 - inter-array cabling
 - Offshore platform configuration (no. & size of transformers)
 - Offshore platform arrangement (no. of platforms & inter-connectivity per wind farm)
 - 132kV cabling to shore
 - Interconnectivity between wind farms
- Optimisation for installed cost, losses and availability

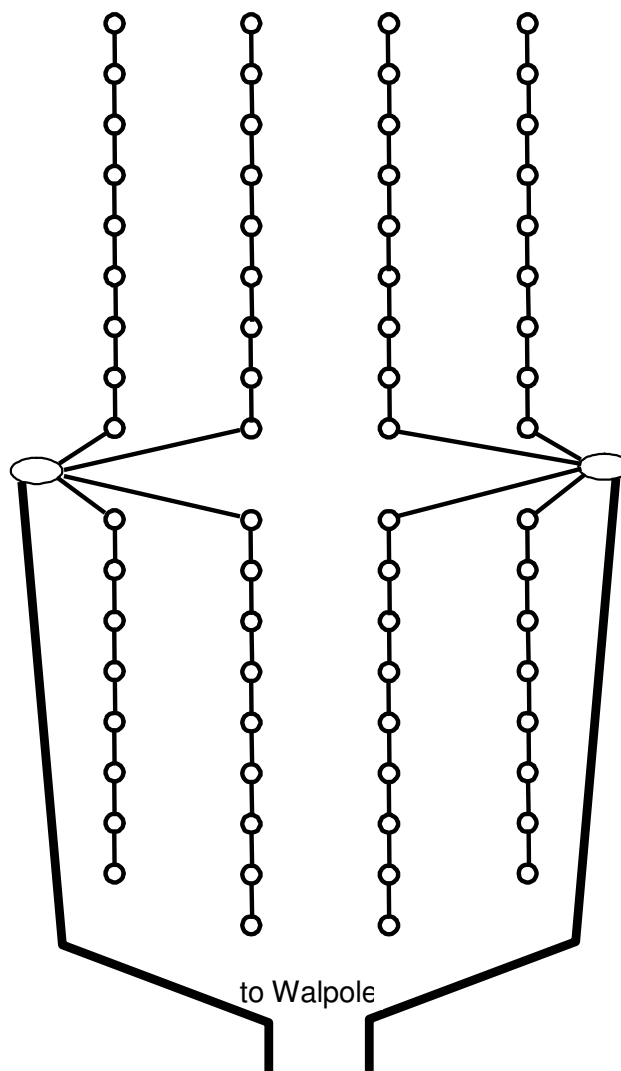
Lincs 250MW – Option 1



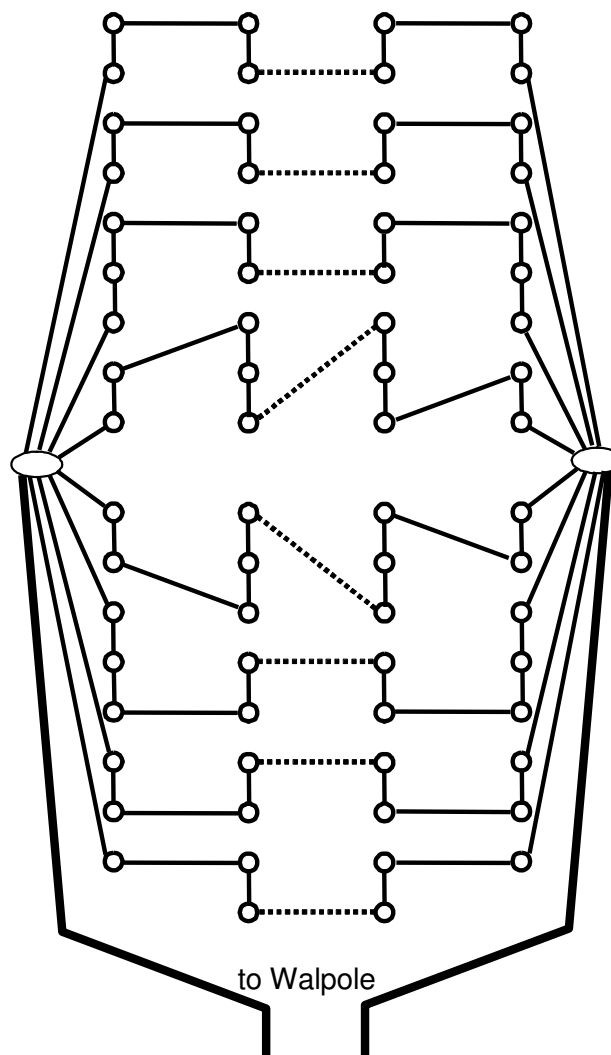
Lincs 250MW – Option 2



Lincs 250MW – Option 3



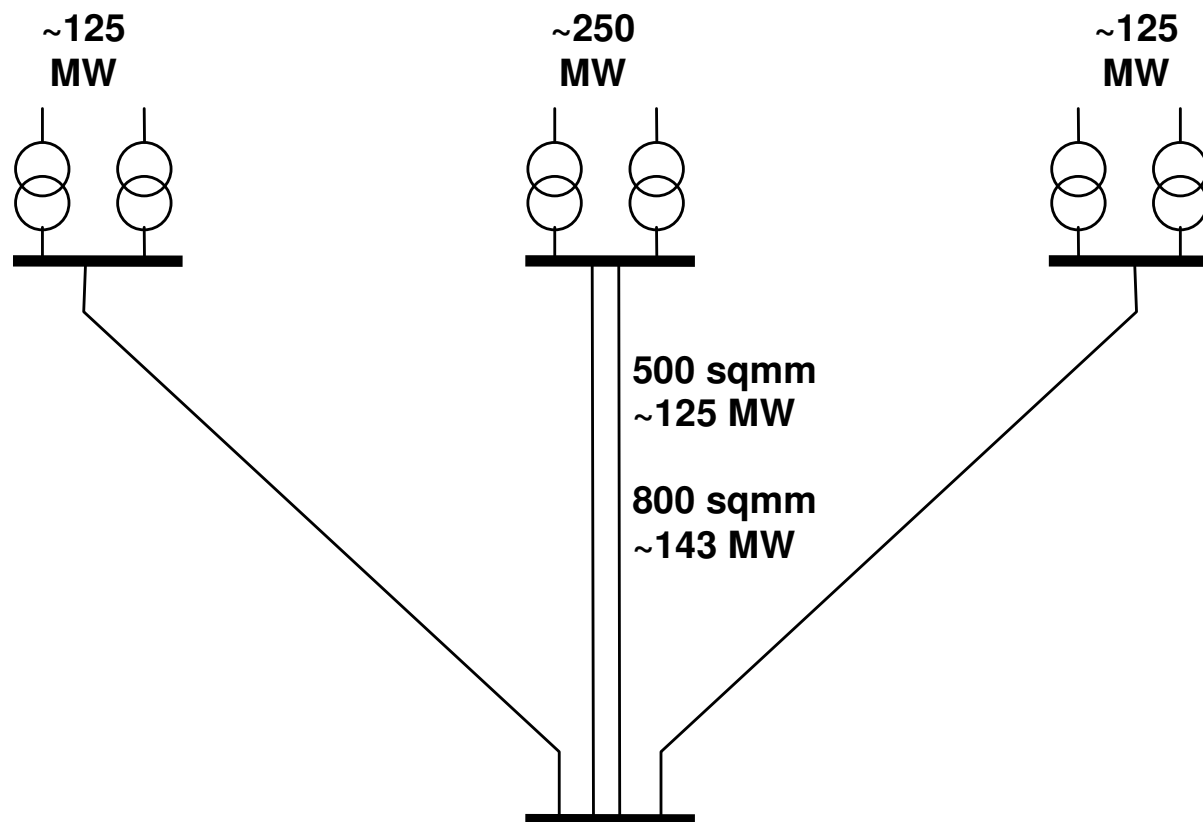
Lincs 250MW – Option 4



Optimisation Results – Lincs 250MW

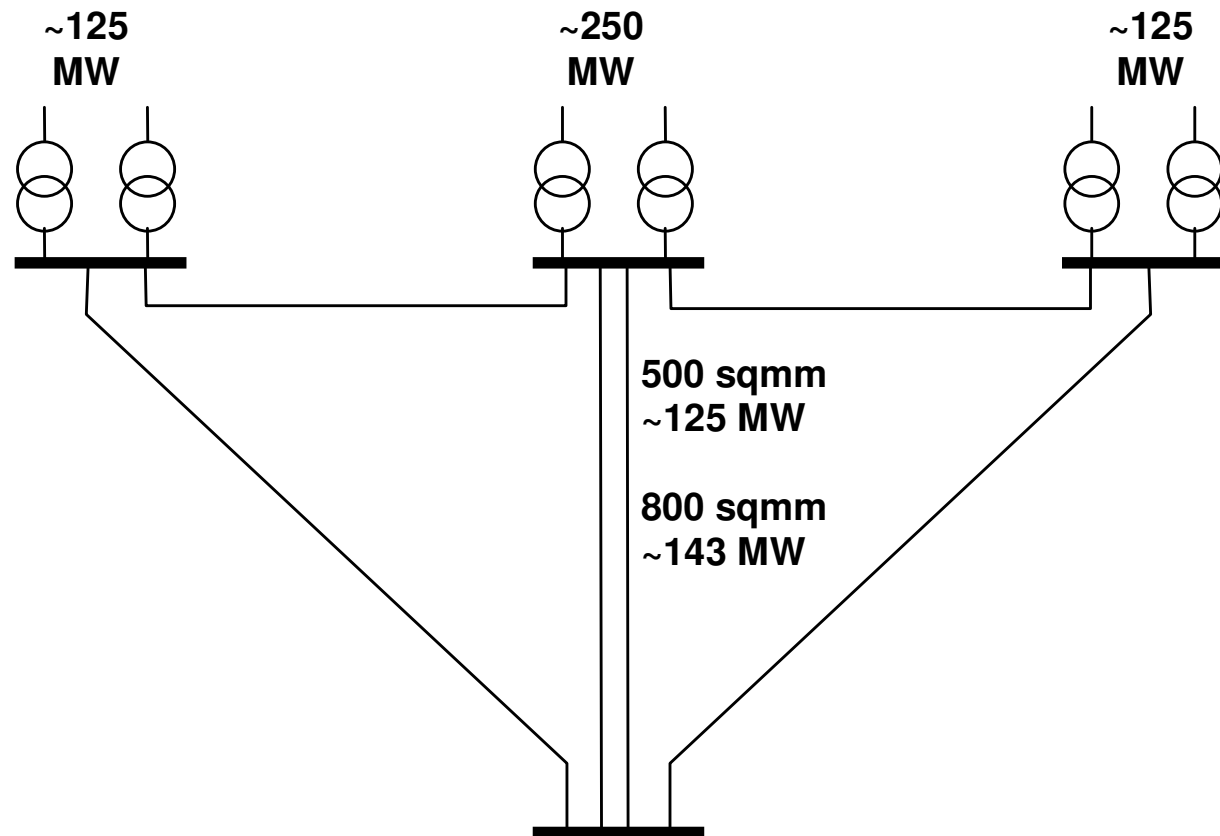
- 2x 500mm² 132kV cables to shore
- 1x platform

Docking Shoal (Race Bank) 500MW – Option 1



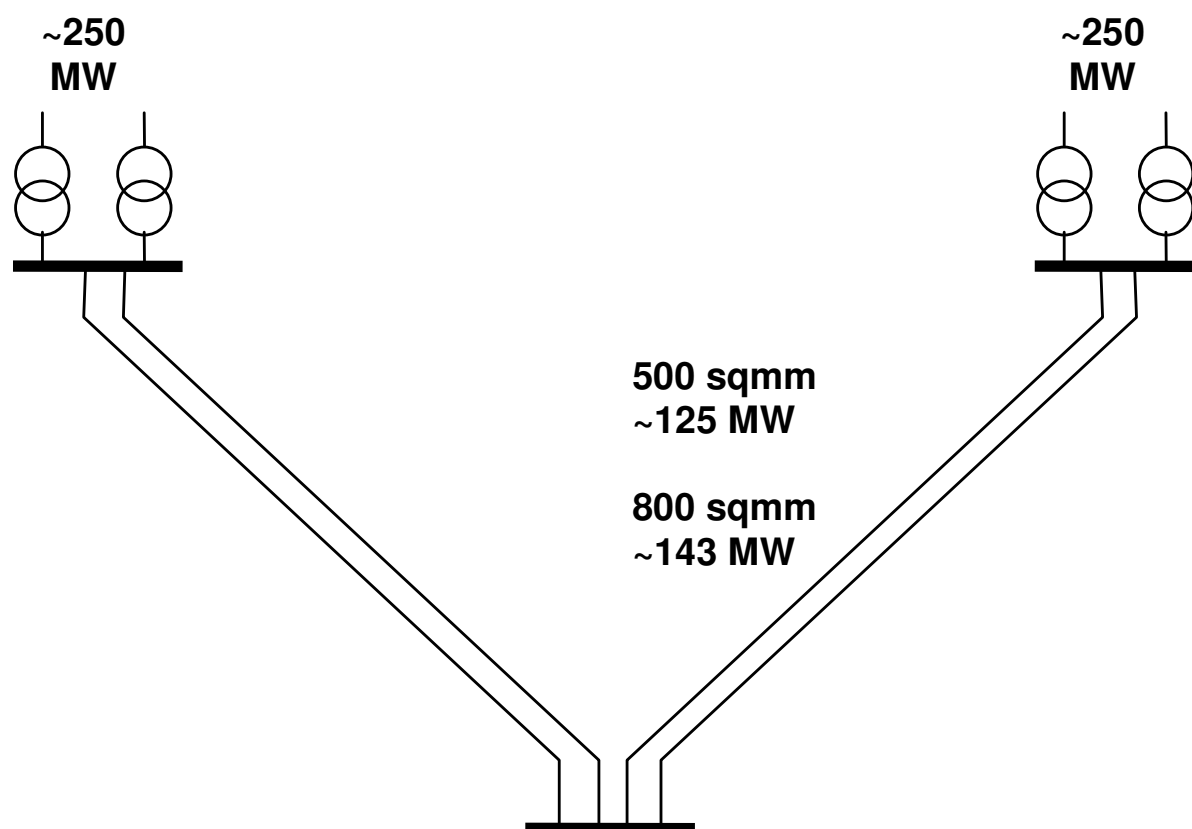
Three platforms arrangement with no redundancy inter-platforms

Docking Shoal (Race Bank) 500MW – Option 2



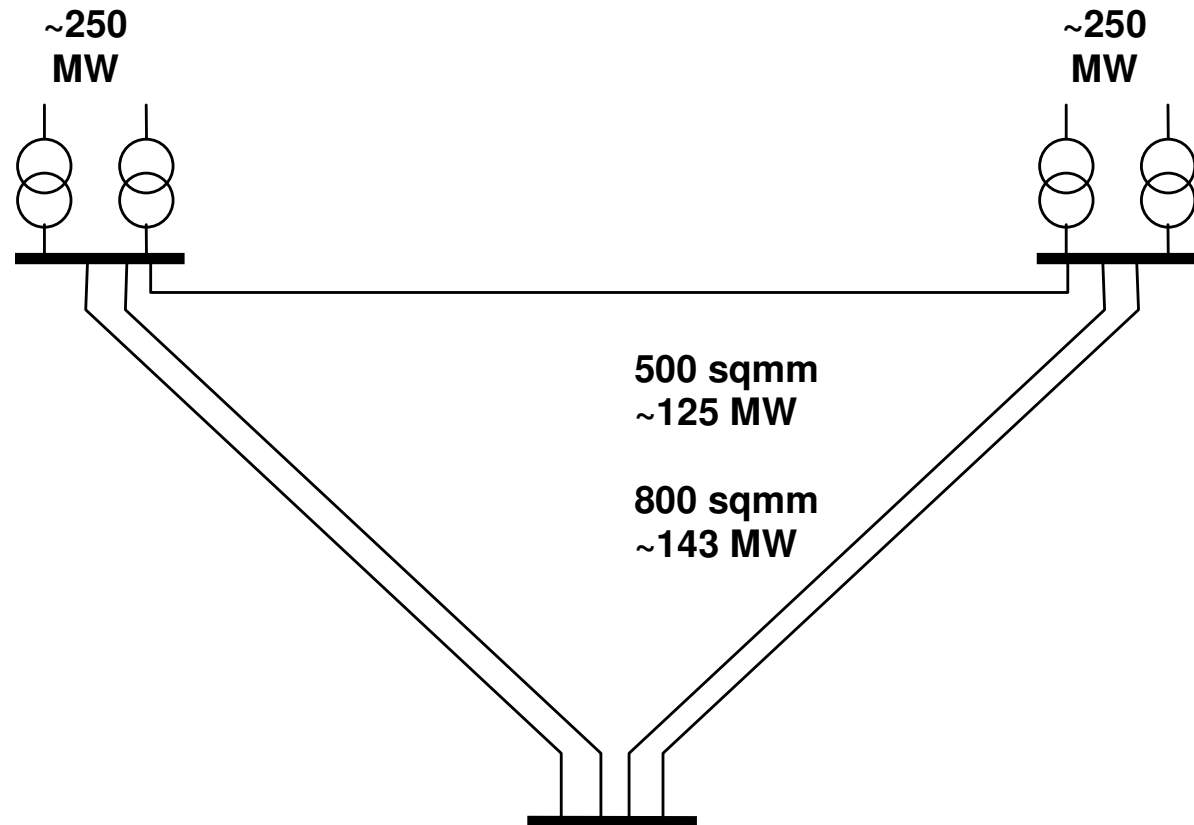
Three platforms arrangement with redundancy inter-platforms

Docking Shoal (Race Bank) 500MW – Option 3



Two platforms arrangement with no redundancy inter-platforms

Docking Shoal (Race Bank) 500MW – Option 4

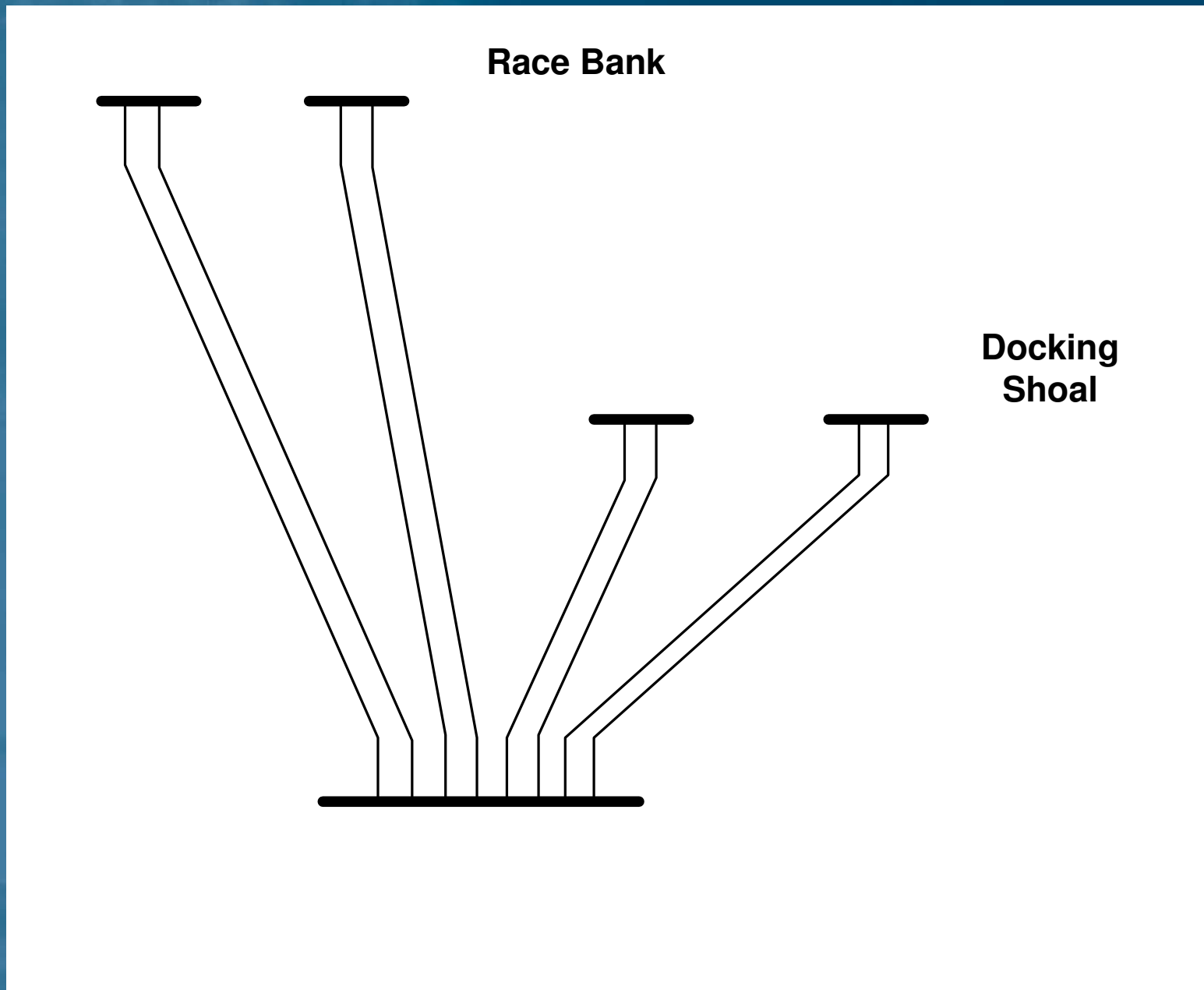


Two platforms arrangement with redundancy inter-platforms

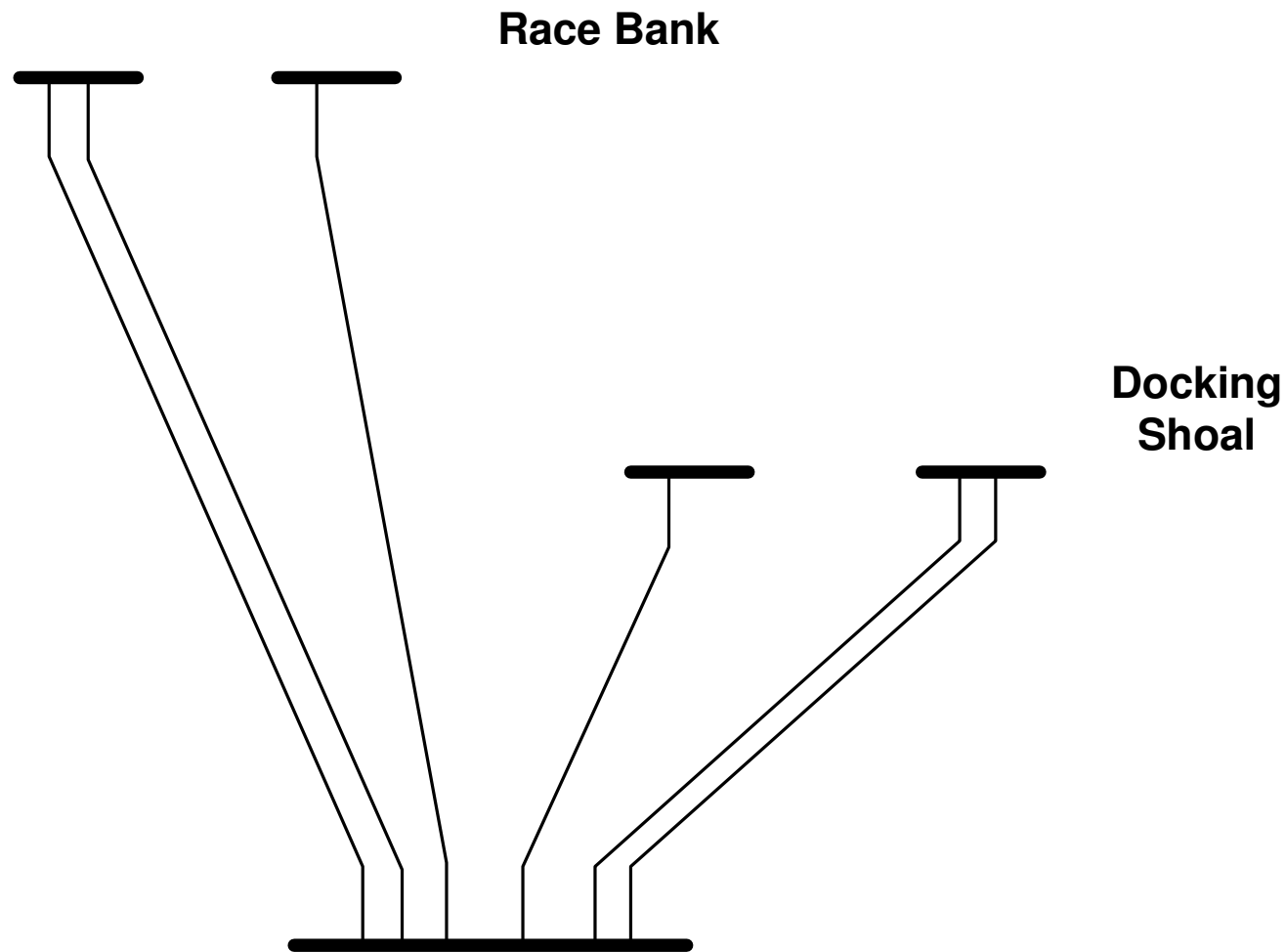
Optimisation Results – DS (& RB) 500MW

- 4x 500mm² 132kV cables to shore
- 2x platforms with 10km separation no interconnections within the wind farm
- Some connection between DS & RB is beneficial

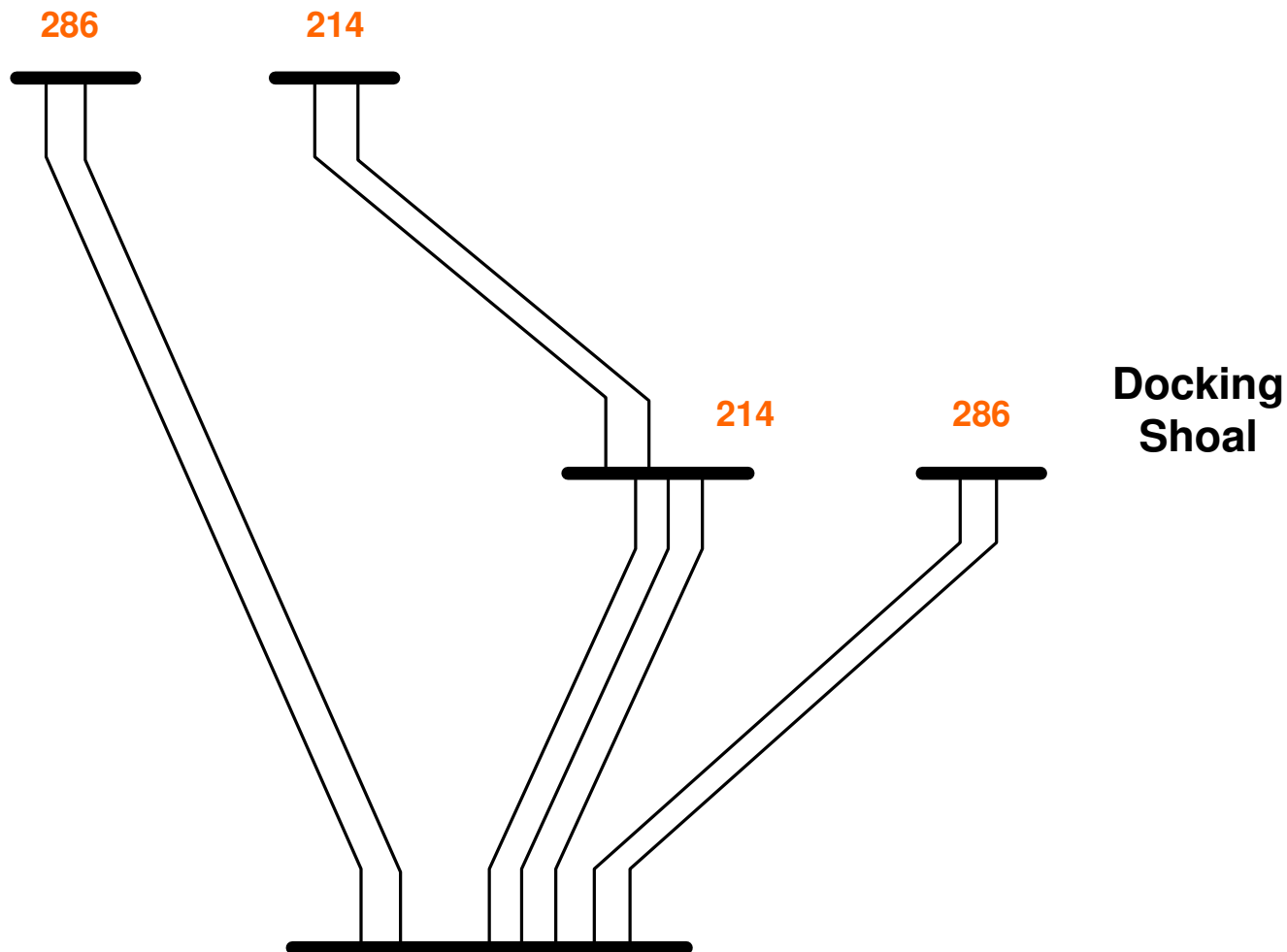
Docking Shoal & Race Bank Interconnection 1



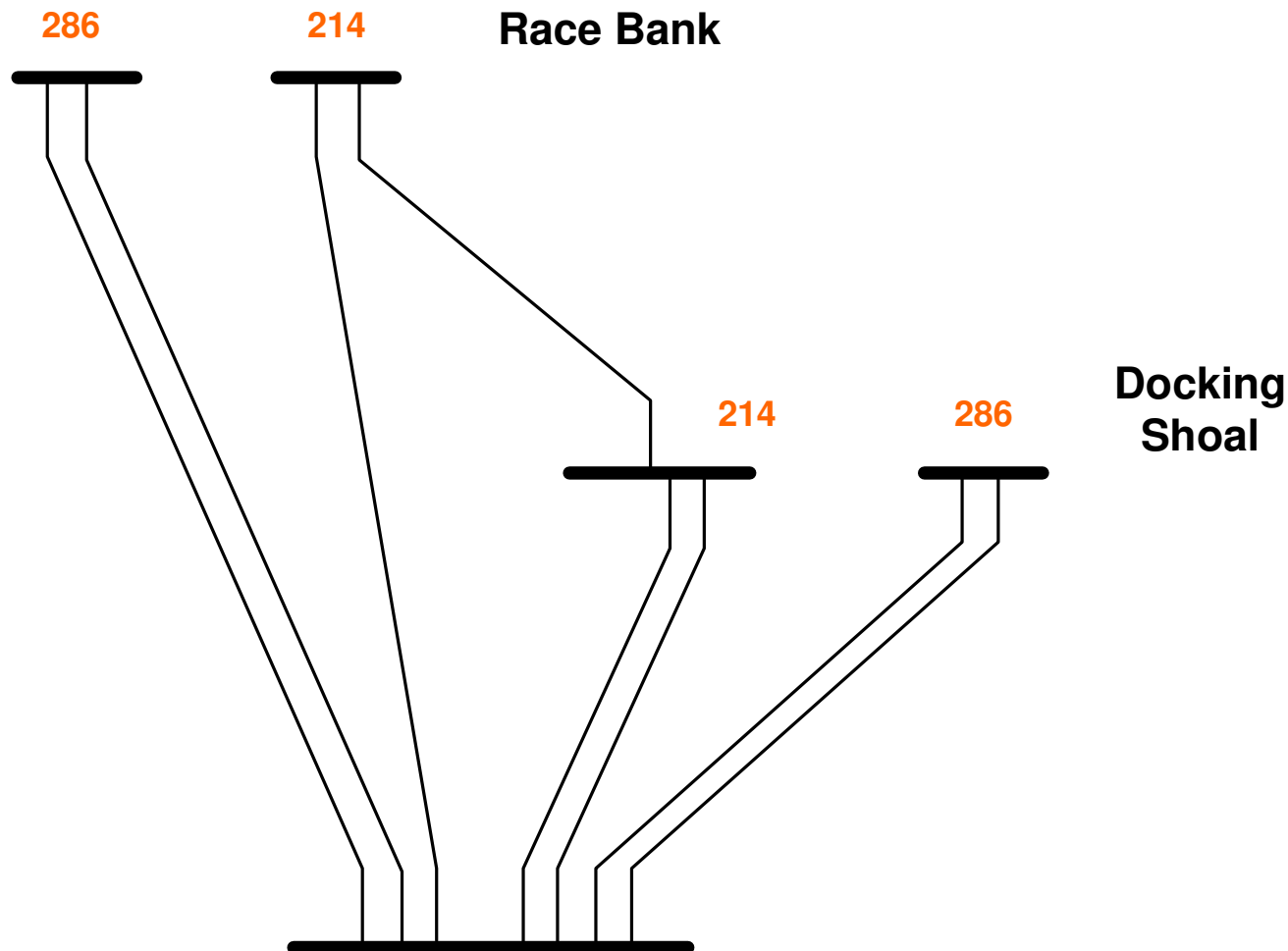
Docking Shoal & Race Bank Interconnection 2



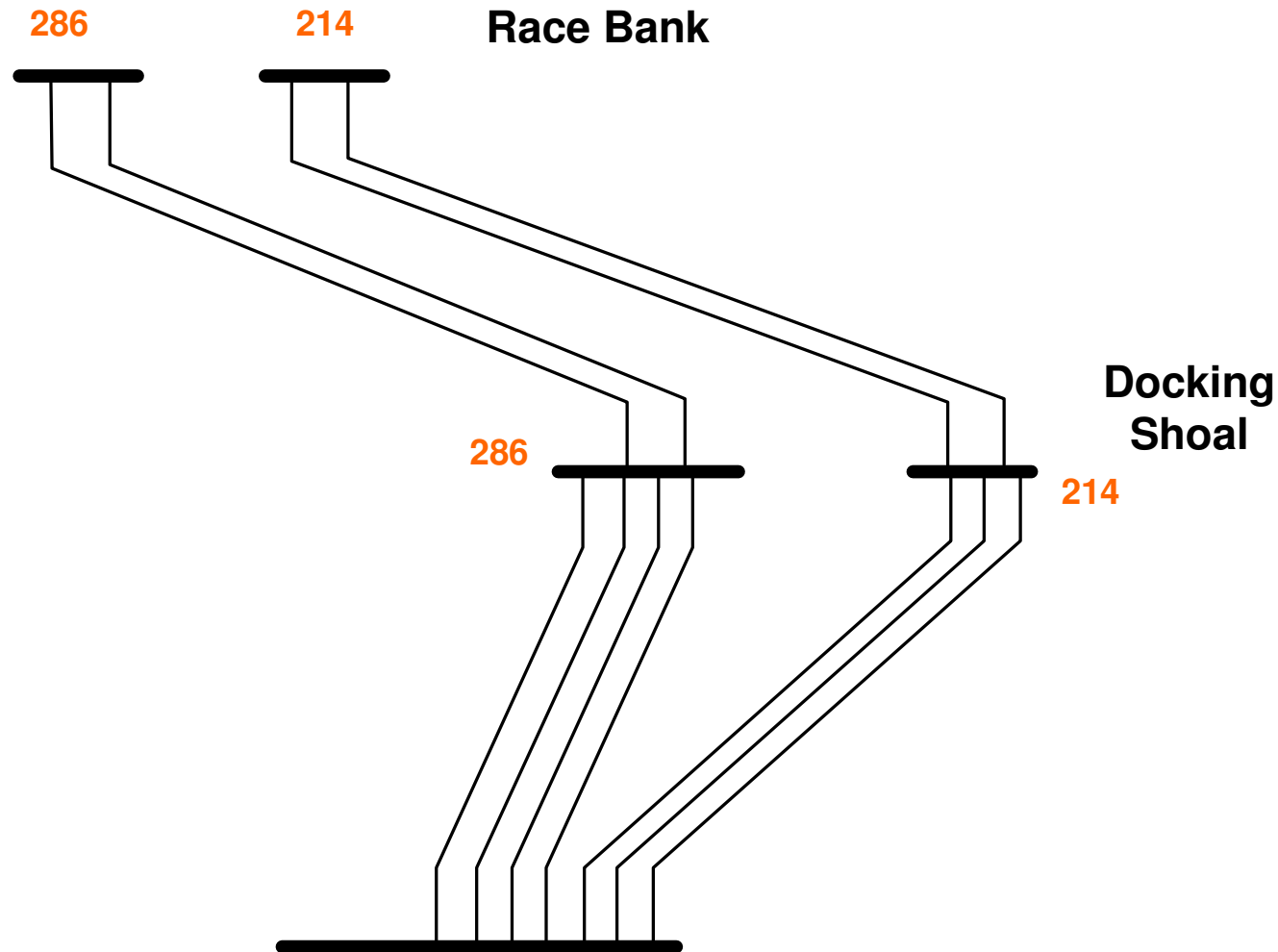
Docking Shoal & Race Bank Interconnection 3



Docking Shoal & Race Bank Interconnection 4



Docking Shoal & Race Bank Interconnection 5



Challenges

- Submarine cable de-rating at landing point due to use of long ducts through inter-tidal zone.