

VIRIDIAN

POWERTEAM Electrical Services

## EXPERIENCES IN SUBSEA CABLING

Presentation to  
NI Coastal Marine Forum  
Maurice Smith - Viridian Group  
10 April 2008

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## TELECOMMS CABLES

- Good to talk, buy, surf, play .....
- Submarine telecommunication cables add at least £2.7 billion of value to the UK Economy

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- Users of the seabed
- Data requirements
- Contingency and maintenance

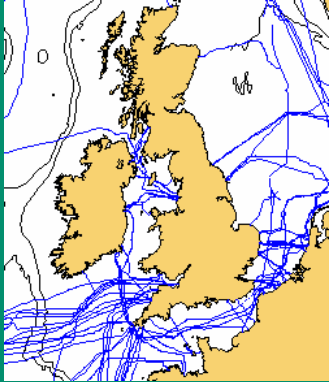
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## TELECOMMS CABLES



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- Users of the seabed
  - Telecommunications
  - Energy
    - > Gas
    - > Power
      - Interconnection
      - Wind Turbines
      - Marine Current Turbines

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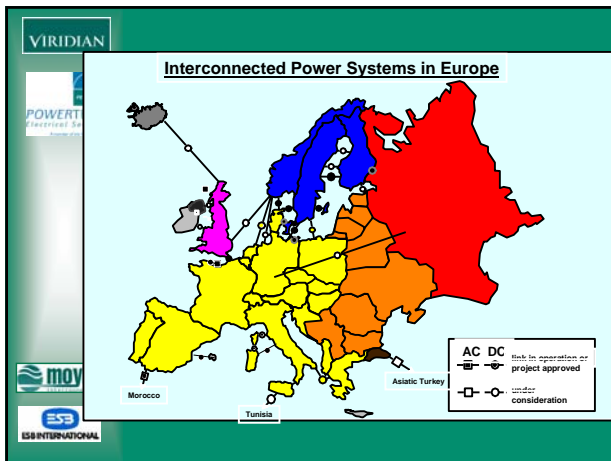
POWERTEAM Electrical Services

## SUBMARINE POWER CABLES

- The Need and Benefit
  - Sourcing cheaper generation
    - > Environmental benefits
    - > Higher utilisation
  - Capacity for trading suppliers
  - Emergency support
  - Obligation to supply

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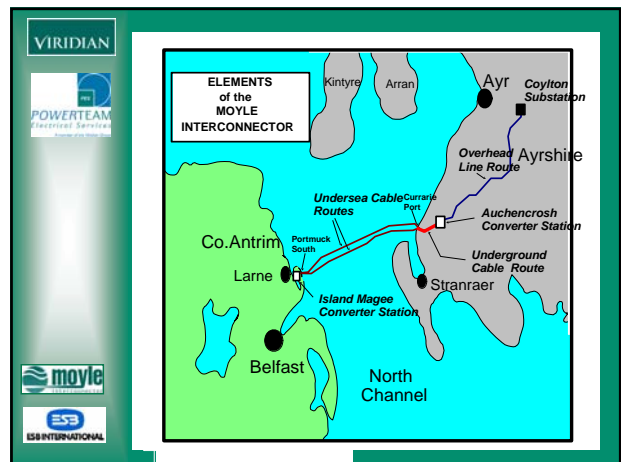
### SUBMARINE POWER CABLES

- Potentially 9000MW operational capacity
- 1200 kms installed or proposed (not including wind farms)
- 4.5m homes

### SUBMARINE POWER CABLES

• **INTERCONNECTIONS**

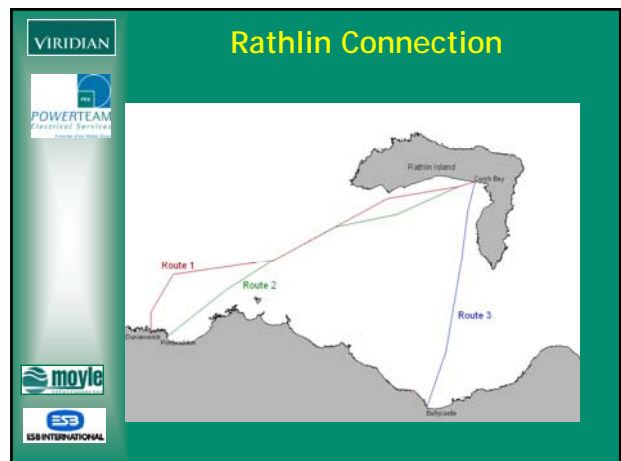
LINK	CAPACITY (MW)
IFA	2000
MOYLE	500
CHANNEL ISLANDS *	300 (2010)
RATHLIN ISLAND *	16
MANX *	60
SCOTLAND *	870
BRITNED	1000 (2010)
IRELAND-WALES	500 (2012)
(* Denotes ac links)	
<b>TOTAL</b>	<b>5246</b>



### SUBMARINE POWER CABLES

• **OFFSHORE WIND FARMS**

- TOTAL OF 3740MW – Operational, under construction or approved
- UK seas opening to extra 25GW



**System Connection**

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**3 Core 90kV 300mm<sup>2</sup> Copper Conductor, XLPE Installation, Lead Sheath, SWA, Submarine Cable**

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**DATA**

- ENGINEERING
  - Routing options
    - Landfall
  - Routing, cable installation and protection
    - Bathymetric data
    - Tidal data
    - Geophysical data
    - "Obstructions"

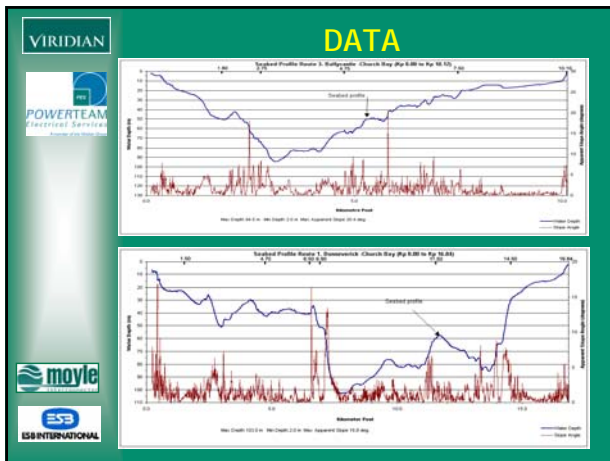
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Labels: CONDUIT/CABLE COVER, CONDUIT JOINTS, INSULATION SHEATHING TO INNER SHEATH, INSULATION JOINTS, LEAD FILLING SHEATH, PLASTIC SHEATH, 20 FIBRE OPTIC, FIBRE OPTIC AND BUNDLING SHEATH, METALLIC RETURN CONDUCTOR, BUNDLING, 100% BRASS ARMOUR, 200µm ORANGE PEEL AND BONDING TAPE, ARMOURED GALVANIZED STEEL WIRE, FIBRE OPTIC AND BUNDLING TAPE

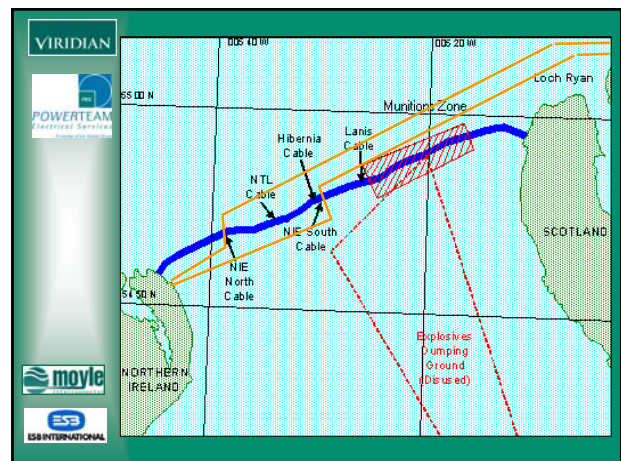
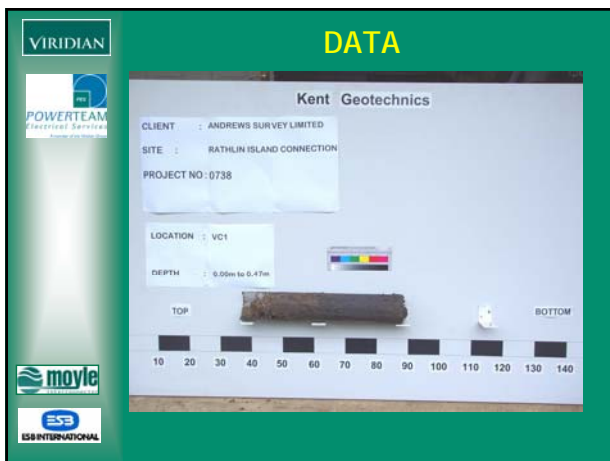
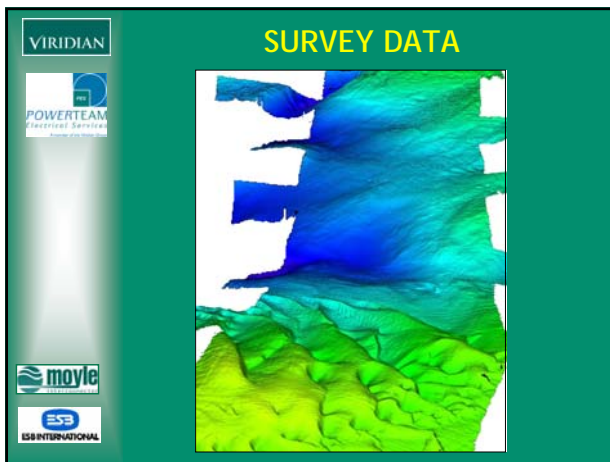
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**DATA**

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- VIRIDIAN**
- DATA**
- OTHER
  - Area designation, Natura 2000, AONB, ASSI, SAC ...
  - Benthic sampling
  - Other parties, regulations, MMO, licences, fishing, leisure, Crown Estate, other services
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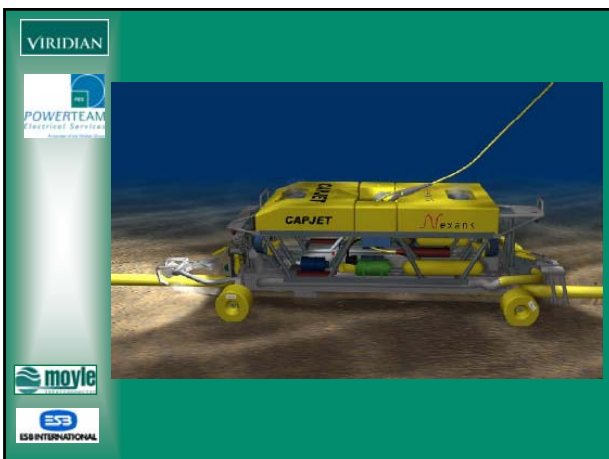
**SUBMARINE POWER CABLES**

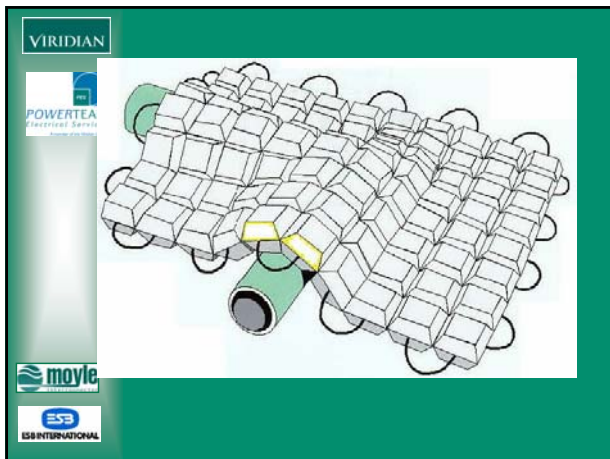
**POWERTEAM**  
Electrical Services

- Construction
  - Cable handling
  - Vessel capability
  - Protection
    - Burial
    - Rock placement
    - Mattress
    - Half shells
    - J-Tube

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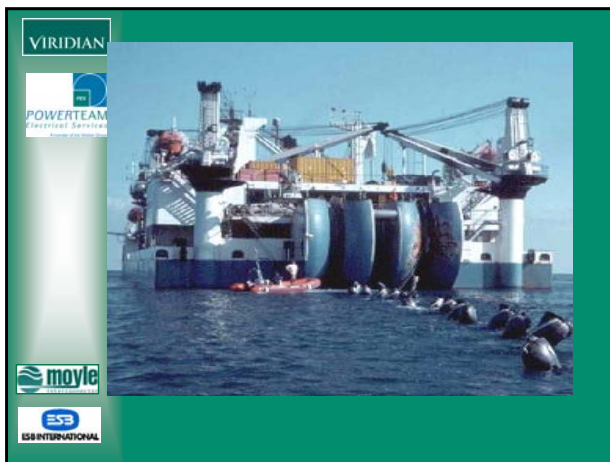
**ESB**  
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**SUBMARINE POWER CABLES**

- REPAIR CONTINGENCIES
  - Fault locating
  - Repair spread
    - Suitable vessel
    - Job specific equipment, deburial, cutting ...
  - Simulation exercises
  - Maintenance surveys



**Learning points**

- Start Early
- Involve all parties from beginning
- Shared environment, experiences, data



**EXPERIENCES IN SUBSEA CABLING**

Maurice Smith - Viridian Group  
10 April 2008

**QUESTIONS ?**

[www.viridian-group.co.uk](http://www.viridian-group.co.uk)  
[www.powerteam.eu.com](http://www.powerteam.eu.com)  
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[www.esbi.ie](http://www.esbi.ie)