

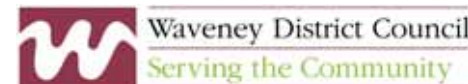
Championing Offshore Renewable Energy

Steve Clarke
Offshore Development Director

Renewables EAST

BWEA28: Securing our Future
L6 - An Industrial Revolution for Renewables
14:00pm Wednesday 11th Oct, Glasgow

*Renewables
East
Championing
Offshore
Renewables
Around the
East Coast*



Overview of Presentation

- Introductions
- O/S Renewables Market (*EoE*)
- Championing Offshore Renewables
 - Profile raising
 - Supporting collaboration
 - Business development
- Other regional initiatives
- Summary



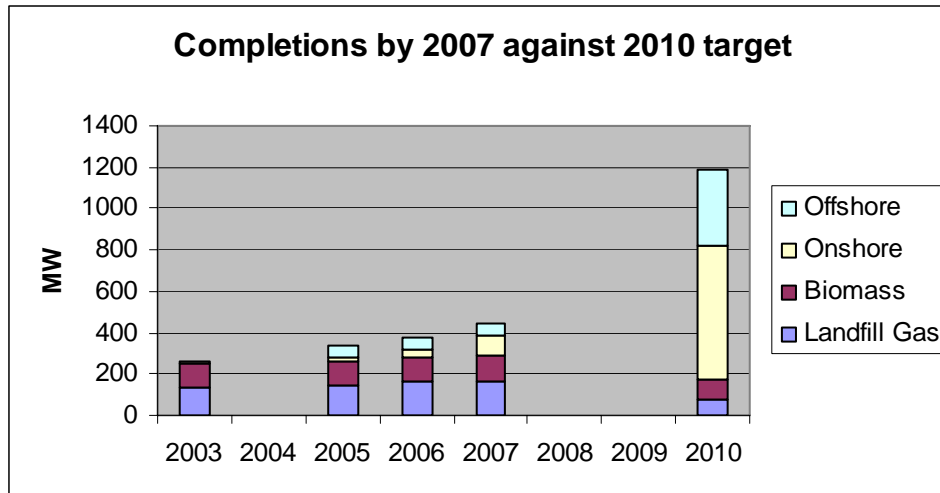
Introduction



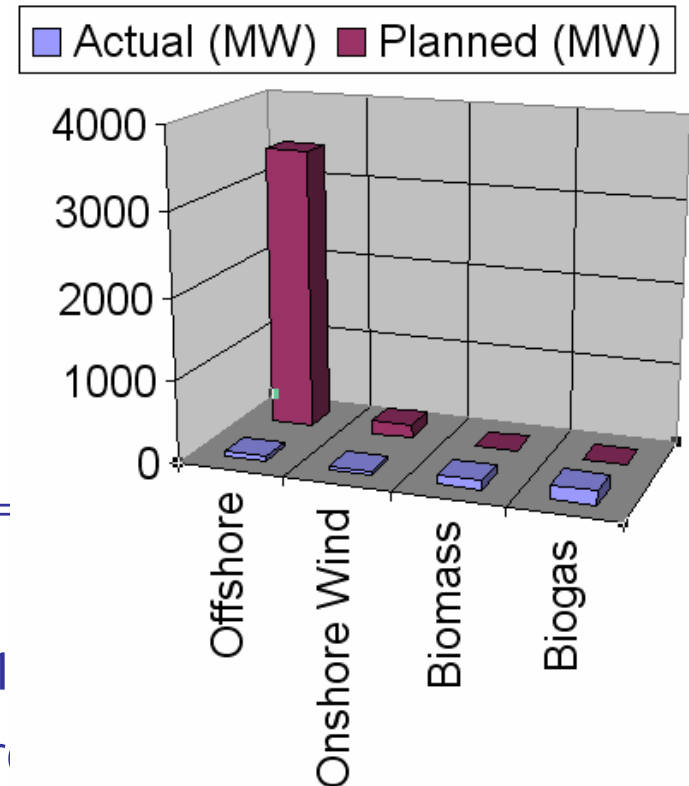
Renewables **EAST**

- Private Company – not for profit
- Established Oct 2003
- Grant funded by EEDA
- Three main company objectives:
 - Reduce regional climate impact
 - Capture regional economic benefit
 - Establish awareness & transfer skills
- Three core activities:
 - Offshore Renewable Energy
 - Bioenergy (Biomass & Biofuels)
 - Mass Market Renewables

East of England – Renewables Mix



Actual Vs Planned EoE



- Likely regional energy demand 2010 =
- Convert 2010 demand to MW at 30%
- Regional renewable energy target = 1
- Currently EoE is generating 385MW fr

Offshore Wind Market – SNS Opportunity



Project Name	MW	Turbine Size (MW)	Water Depth (m)
Scroby Sands	60	2	2-10
Kentish Flats	90	3	5
Inner Dowsing	90-108	3-3.6	10
Lynn	90-108	3-3.6	10
Gunfleet Sands	108	3.6	8
Cromer	90-108	3-3.6	23
Gunfleet Sands phase II	64	4	8
Humber Gateway	300	3-5	12-14
Lincs (Inner Dowsing II)	250	3.6-5	13
London Array – (LAWL) 1	300	3-5	8-12
Sheringham Shoal	315	3-5	15
Greater Gabbard	500	3.6-5	15
Dudgeon East	300	3-5	20
London Array – Shell	333	3-5	8-12
Thanet	300		
Westernmost Rough	240		
Docking Shoal	500		
London Array – (LAWL) 2	367		
Race Bank	500		
Triton Knoll	1,200		
			Ca. 2,500 WTG's

6GW



EoE Offshore Wind Market

- Ca. 9GW around UK coastline
- Ca. 6GW around EoE coastline
- Overseas markets absorbing capacity
- Boom-economies absorbing materials
- UK offshore projects were *'moving to the right'*
- 14 years 1st GW, 14 months to build 2nd GW
- More consents & larger projects



Offshore Marine Renewables

- Circa. 10 Tidal devices in developments
- Circa. 20 Wave devices in developments
- MEC II (feasibility) under consideration
- Dti MRDF (£50M) for 'investor readiness'
- Recent 'Path To Power' Report (npower & CCC)
- Considerable time until volume deployment
- Focus on IP & supply chain opportunities

*UK
Currently
Leading on
Technology
for Wave
and Tidal
Energy*

Championing O/S Renewables

1. Raising the profile of offshore renewable energy, regionally, nationally and internationally.
2. Supporting greater co-ordination and collaboration amongst businesses, academic and research institutions, business support organisations and trade associations.
3. Supporting business creation & growth within offshore Renewable Energy in the EoE.



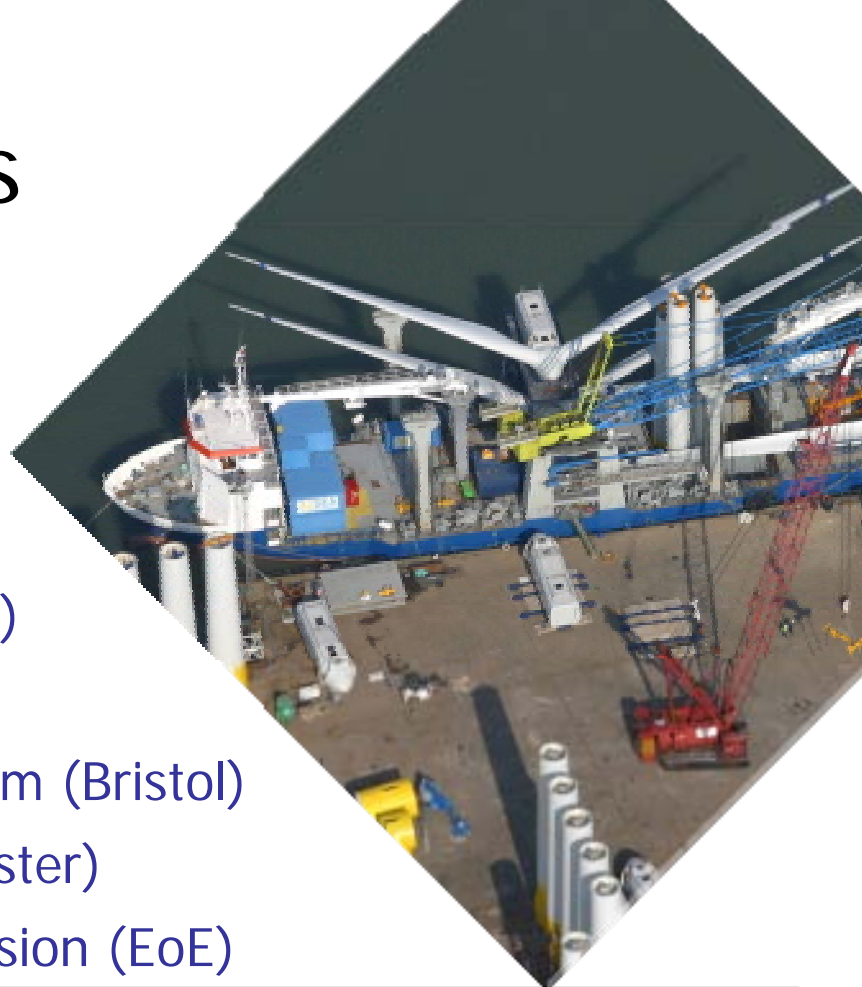
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Profile Raising - Events

- BWEA UK Offshore 2006 (London)
- BWEA Marine Bill Seminar (London)
- 2006 WindEnergy Fair (Hamburg)
- All-Energy 2006 (Aberdeen)
- BWEA & Dti R&D Forum(s) (London)
- Eeegr Summer Conference (EoE)
- Wave & Tidal Technology Symposium (Bristol)
- Vestas Supply chain Event (Manchester)
- POWER Project German Inward Mission (EoE)
- Airtricity/Flour 'Meet the Utility & EPC Contractor' Event (Ipswich)
- European Regions Event & Investor Café (Brussels)
- *BWEA28 Annual Conference (Glasgow)*



Championing O/S Renewables

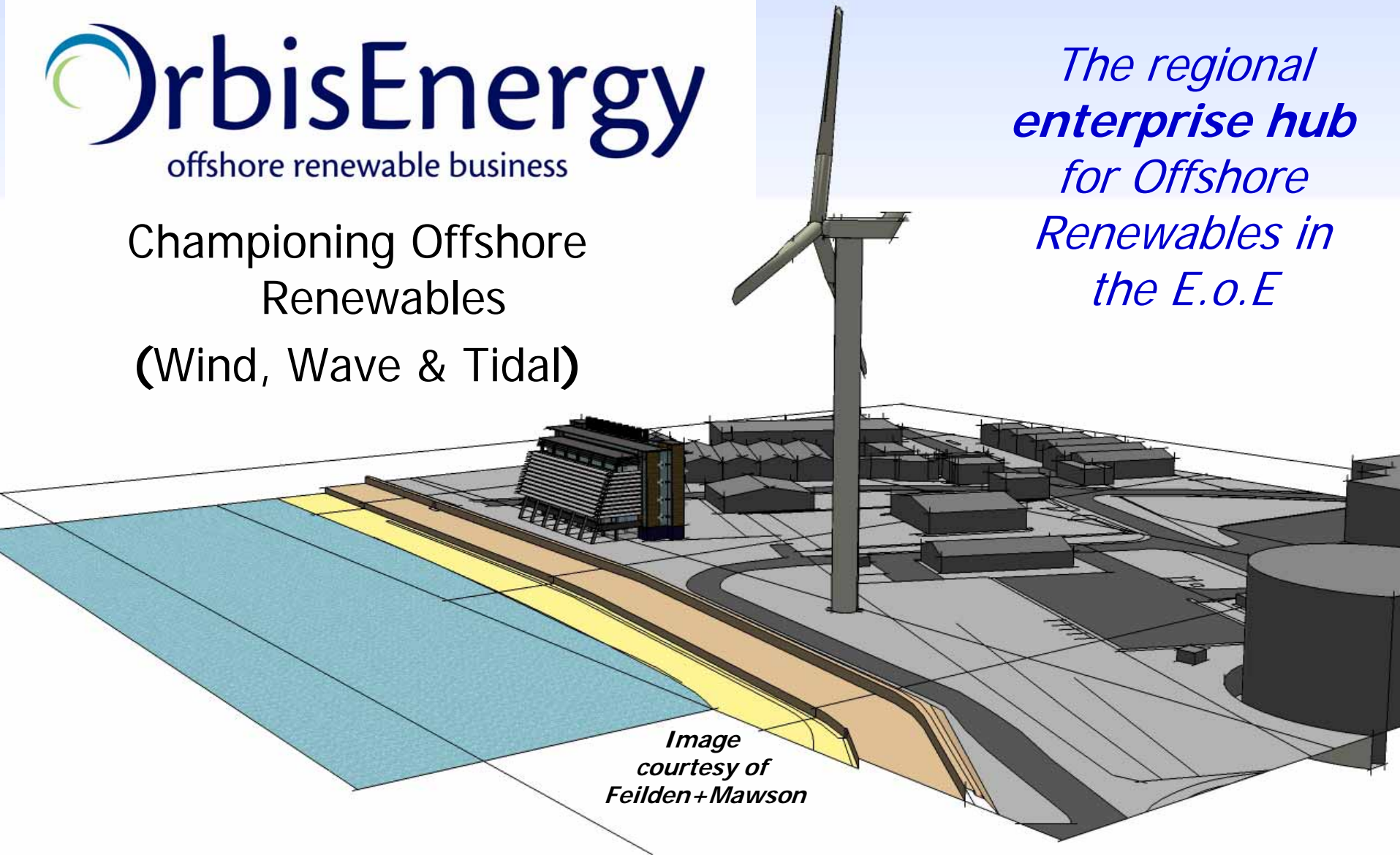
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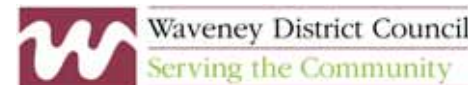


Championing Offshore
Renewables
(Wind, Wave & Tidal)

*The regional
enterprise hub
for Offshore
Renewables in
the E.o.E*



*Image
courtesy of
Feilden+Mawson*



**Individuals/
entrepreneurs**

Enable & support new start-ups

- Access to specialist innovation support
 - General and sector/activity-specific
 - Access to markets, selling & distribution channels
- Access to sources of finance
- Mentoring
- Local business champion for entrepreneurial development
- Gateway to all business support in sub-region/region
- Responsive to local need/demand for business support

**Activity
concentration**

Networking and knowledge exchange

- Facilitate opportunities for networking and mentoring: -
 - Within and between innovation/ Incubator Centres
 - Local/regional businesses
 - Individual entrepreneurs
 - Business Angels
 - Universities
 - Schools
 - Internationally
- Facilitate technology transfer/access and sharing of best practice

Academic linkages

- Access to relevant Research base
- Access to academic consulting expertise
- Support academic spin-out ventures
- Schools
- FE Colleges
- Universities
- LSCs

Hub

Hub Centres

- Access to flexible workspace
- Access to shared business facilities
- Innovation or incubator space with professional management
- Availability of "move on" space
- Broadband connections
- Access to prototyping/development facilities and technology eg, wet/dry labs

SMEs

**Large firms
'star' platforms**

**Individuals/
entrepreneurs**

**Activity
concentration**

Enable & support new start-ups

- Access to specialist innovation support
 - General and sector/activity-specific
 - Access to markets, selling & distribution channels
- Access to sources of finance
- Mentoring
- Local business development
- Gap analysis
- Business plan

***Business interaction
between individuals and
business is concentrated and
catalysed when these groups
are brought closer to each other
geographically and/or
when their lines of
communication are made
easier / faster or
more efficient.***

Networking and knowledge exchange

- Facilitate opportunities for networking and mentoring: -
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 - Universities
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 - Internationally
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- Schools
- Colleges
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- Research centres

SMEs

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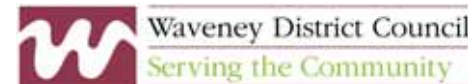
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OrbisEnergy

offshore renewable business



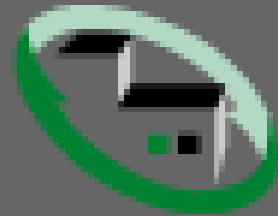
*The regional
enterprise
hub for
Offshore
Renewables
in the E.o.E*



Features of OrbisEnergy

- Physical focus for O/S Renewables
- Eastern-facing aspect (views of wind farms)
- Striving for BREEAM 'Excellence'
- Wood-chip Biomass boiler
- Concrete frame (large thermal load)
- Easy in/out tenancy terms (SME friendly)
- Access for less-able-bodied employees
- 1st step toward a wider 'energy-park'

BREEAM



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Dti Supply Chain

“...increase the competitive
Renewables sector in order
secure a greater percentage

- **E-Tech** *Marine Electrical*
 - **GMSL** *Standardised Sub-*
 - **JDR** *Wind Farm Array Cab*
 - **ODE** *Cable Depth Monitor*
 - **PSL** *Offshore Controlled B*
- ...all regional



Dti / Scottish Executive Guide

Global Marine Systems Limited

Excellence:
Subsea cable installation & burial

Key products:
Installation & burial of export and inter-array cables.

Wind industry customers:
Vestas, Blyth Offshore Wind Ltd, Nexans Power Cables

Facilities location:
Chelmsford Essex (HQ), Portland Dorset (Subsea Base)

Global presence:
Offices in UK, USA, Asia. Operate on a worldwide basis

Turnover: €73m (5% in wind)

1st involvement in wind: 2000



Global Marine

ODE

Excellence:
Full range of engineering & FM services

Key products:
PM Services, Consulting, Engineering Design, Operations Support, Decommissioning

Wind industry customers:
Vestas, Centrica, Airtricity, Eclipse Energy, DONG, E.ON, EDF, npower, Clippert Windpower

Facilities location:
Great Yarmouth, Norfolk & London

Global presence:
UK based but with worldwide experience

Turnover: €22m (15% in wind)

1st involvement in wind: 2002



ode

E-Tech Group Ltd

Excellence:
Marine and offshore electrical services

Key products:
Full electrical project turnkey management from Design, through installation, testing and commissioning to the supply of switchgear suitable for offshore applications, cables and electrical equipment
The provision of ongoing maintenance during the service life of offshore fields, supported with condition monitoring services including current injection and thermal imaging

Facilities location:
Gt Yarmouth UK (HQ) with locations throughout the UK, France, and the Middle East providing skilled engineers at all levels.

Global presence:
Operational presence worldwide handling multi million pound projects.

Turnover:
In excess of £12m



SLP Energy

Excellence:
Fully integrated renewable energy company – development, engineering, construction, consultancy and project management – on & offshore

Key products:
Offshore foundation and top-side structures, met masts, sub-stations

Key projects:
Ness Point (2.75MW), Sheringham Shoal (315MW) plus further 450MW under development

Wind industry customers:
Norsk Hydro, Centrica, Shell, Humber Wind, COWI, Trodos

Manufacturing locations:
Lowestoft, Tweedale & Blackpool

Global presence:
Bases in UK (Wind), US, Mexico, Middle East, Asia

Turnover: €4-5m, mainly in wind.
Parent company - €120m (2005)

1st involvement in wind: Ness Point 2001



JDR Umbilical Systems

Excellence:
Design & manufacture of subsea power cables

Key products:
Inter turbine array cables, termination systems

Wind industry customers:
Talisman Energy (UK) Ltd with Scottish & Southern Energy Co-venturers

Manufacturing locations:
Cambridge UK, Thailand

Global presence:
Operational presence worldwide

Turnover: €36m (1% in wind)

1st involvement in wind: 2005



PSL Energy Services

Excellence:
Fabrication and Condition Monitoring / Maintenance

Key products:
Controlled bolting services

Wind industry customers:
Vestas

Manufacturing locations:
Great Yarmouth, Norfolk

Global presence:
Europe, Asia, Russia, Africa

Turnover: €6.5m (0% in wind)

1st involvement in wind: 2003



Presentations to more than 80 delegates at Airtricity event



Other EoE Initiatives Underway

- EastPort



*Local,
regional,
national
& inter-
national*





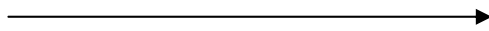
Proposed EastPort Outer-Harbour Development



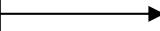
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*Local,
regional,
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- EastPort



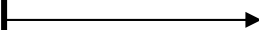
- 1stEast



- CoVE – Offshore Technology



- POWER




Summary

- Significant regional opportunity O/S Wind
- E.o.E is playing to its strengths:
 - Proximity to resource
 - Transferable Skills (O&G)
 - Supportive RDA
- Wave & Tidal opportunities to follow
- Host of initiatives already underway
- What next, export opportunities...?



2006-2010 Forecast *(International Offshore Only)*

	Cumulative installed capacity (MW) by end of in 2005	Installed capacity (MW) in 2005	Forecast 2006-2010 (only Offshore)					Installed capacity between 2006-2010	Cumulative installed capacity (MW) by end of 2010
			2006	2007	2008	2009	2010		
Belgium	0	0			100		100	200	200
Denmark	398	0			200	200		400	798
France	0	0				105		105	105
Germany	0	0			60	240	1,300	1,600	1,600
Ireland (Rep.)	25	0						0	25
Netherlands	19	0	108				200	308	327
Norway	0	0					200	200	200
Spain	0	0			20		200	220	220
Sweden	23	0		182	44	270	270	766	789
UK	214	90	90	318	934	768	1,000	3,110	3,324
Total Europe	679	90	198	500	1,358	1,583	3,270	6,909	7,588
Canada	0	0		20				20	20
USA	0	0					430	430	430
Others (Asia)	0	0			50	100	200	350	350
Total Others	0	0	0	20	50	100	630	800	800
Total World	679	90	198	520	1,408	1,683	3,900	7,709	8,388
Offshore's global share (% of MW)			1.5%	3.5%	8.5%	8.3%	16.0%	9%	6%
Accu. capacity (MW)	679		877	1,397	2,805	4,488	8,388		

Source: BTM Consult ApS - March 2006

OrbisEnergy

offshore renewable business



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Steve Clarke

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