

Limerick Clare Energy Agency

Marine Energy Conference

24th February 2011

Stephen O'Sullivan
Ocean Energy Development Unit



SEAI is Ireland's national energy authority

Our Mission is to play a leading role in transforming Ireland into a society based on sustainable energy structures, technologies and practices.

Key Strategic Objectives

- Energy efficiency first: - implementing strong energy efficiency actions that radically reduce energy intensity and usage
- Low carbon energy sources: - accelerating the development and adoption of technologies to exploit renewable energy sources
- Innovation and integration: - supporting evidence-based responses that engage all actors, supporting innovation and enterprise for our low-carbon future.

Ocean Energy Strategy

15 Year Plan of R&D, infrastructure and industry support measures

Objectives:

- Support the introduction of Ocean Energy to the Renewables 'portfolio' in Ireland.
- and
- Develop an Irish OE industry sector.

Targets:

- **200MW installed by 2020**
- **1900 jobs created by 2020.**

Phases

- Development -2005-2007
- Pre-commercial (1)-2007-2010
- Pre-commercial (2)-2011-2015
- Commercial –2016 Onwards

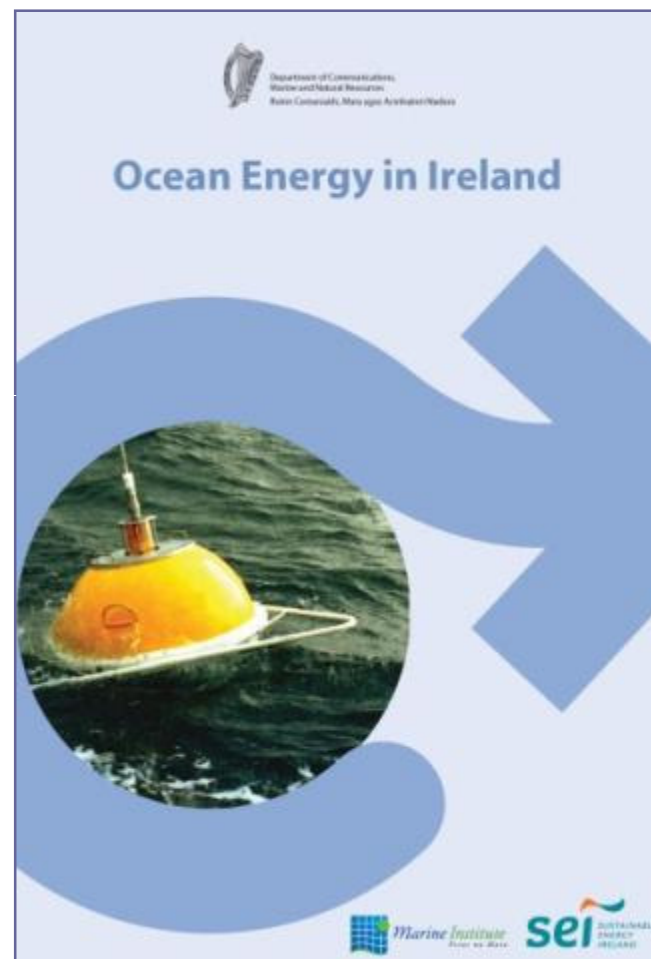
2007 Revised Strategy and Targets

Overall - 40% electricity from renewables by 2020

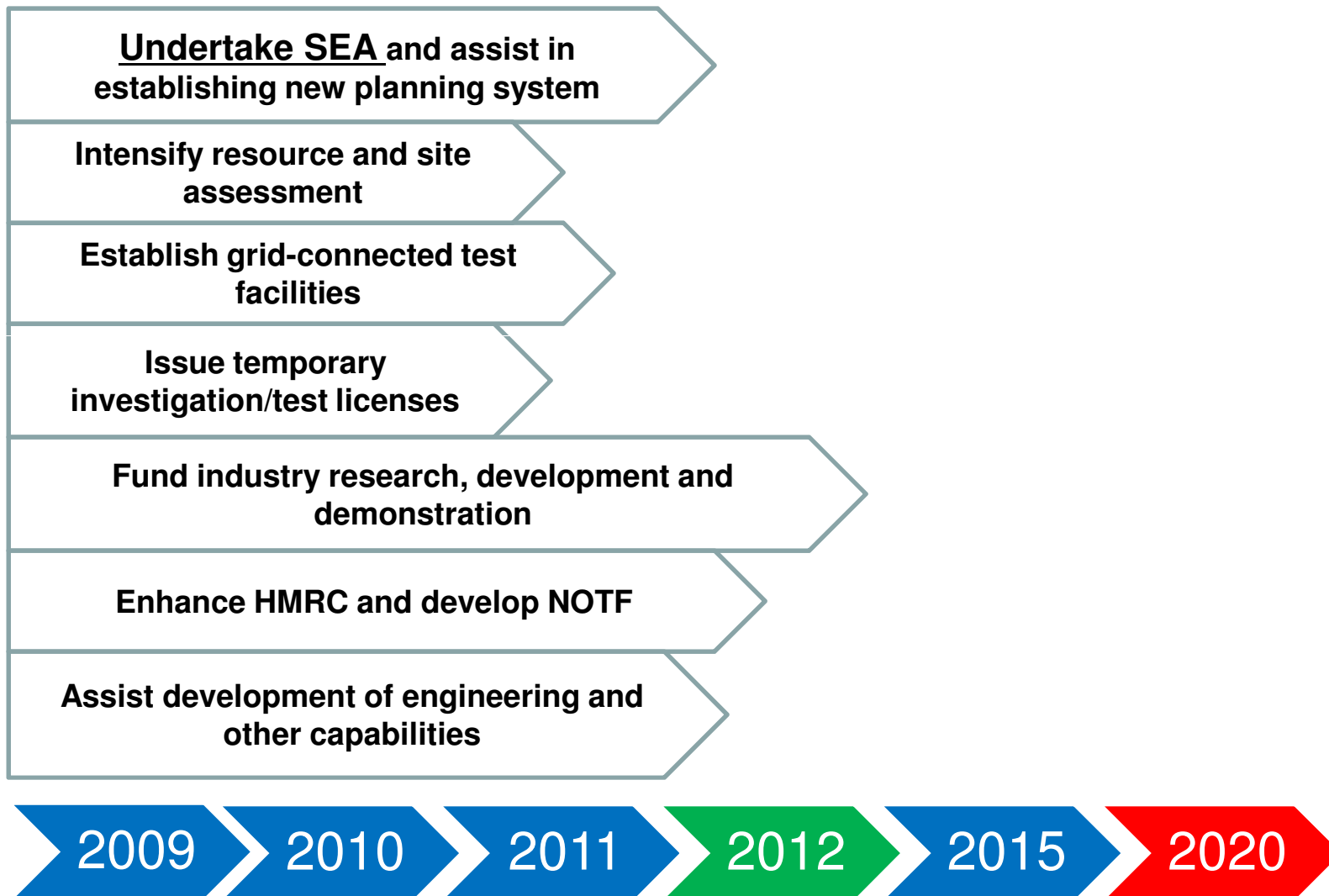
500MW ocean energy by 2020

Actively support industry development

Mechanism for Delivery - OEDU



Programme Actions:



OE Development Roadmap

Support Pilot projects, new concepts

Full scale demonstrators

Small-scale arrays 10MW/20 devices

Arrays of 100s MW

2010

2011

2012

2015

2018

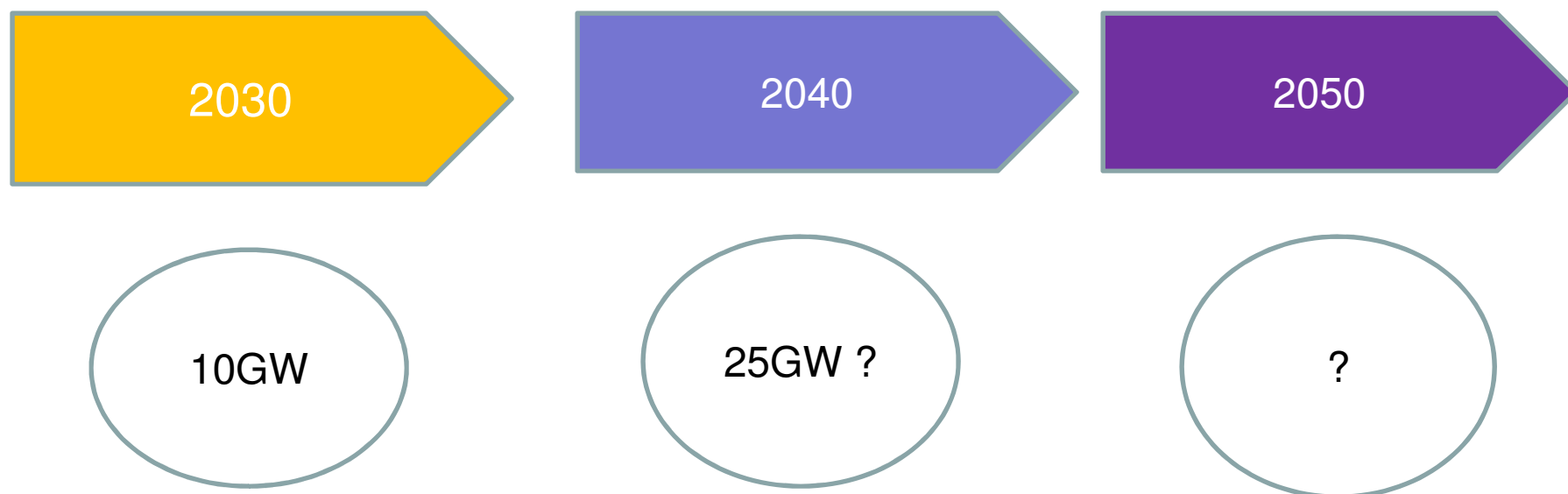
2020

Government Targets

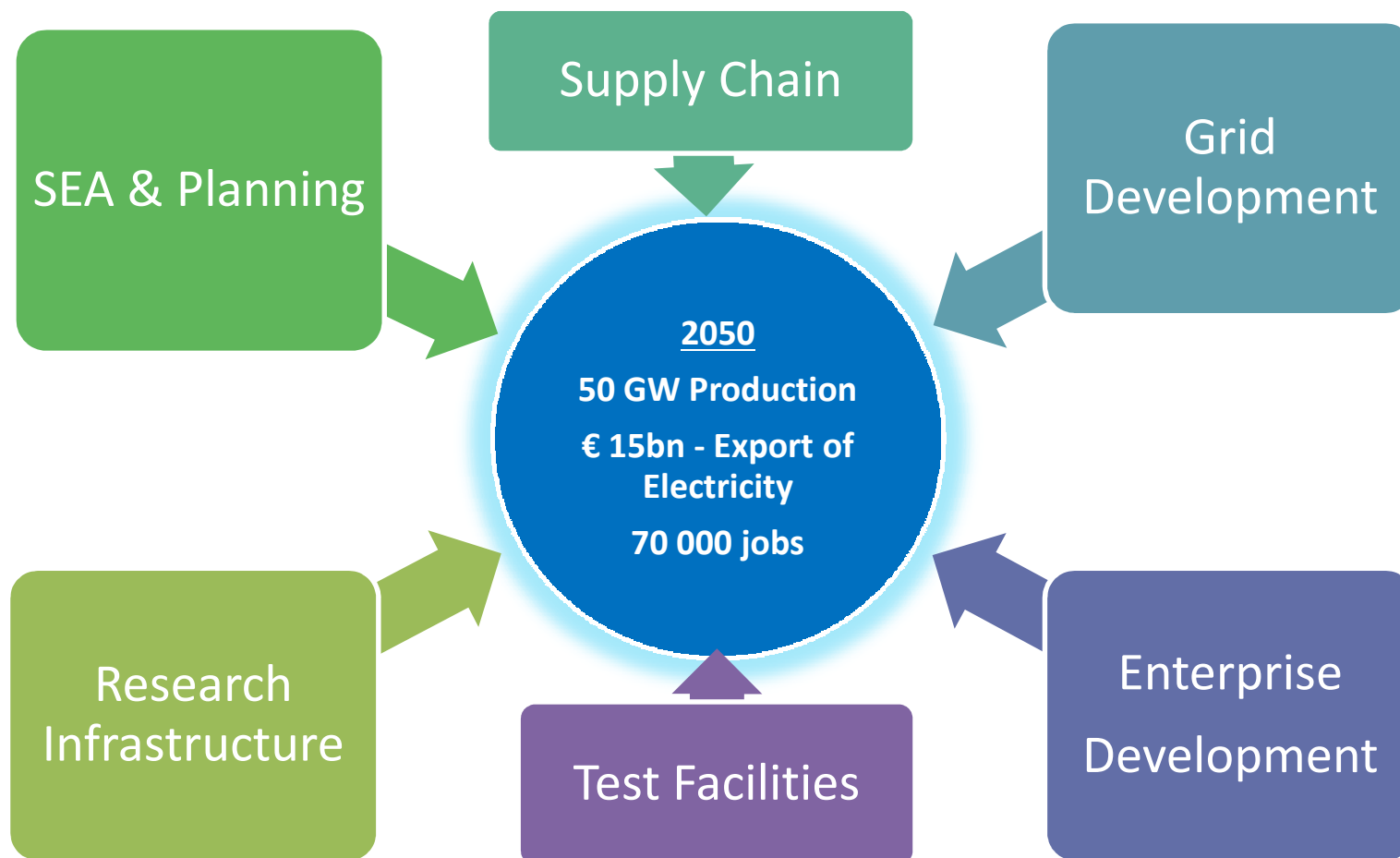
500MW
installed

2020 now seen as a waypoint on a much longer path

Actions are now beginning to be developed around a longer-term vision for electricity from *offshore wind*, as well as wave and tidal resources



Huge opportunity available



**Strategic
Environmental
Assessment**

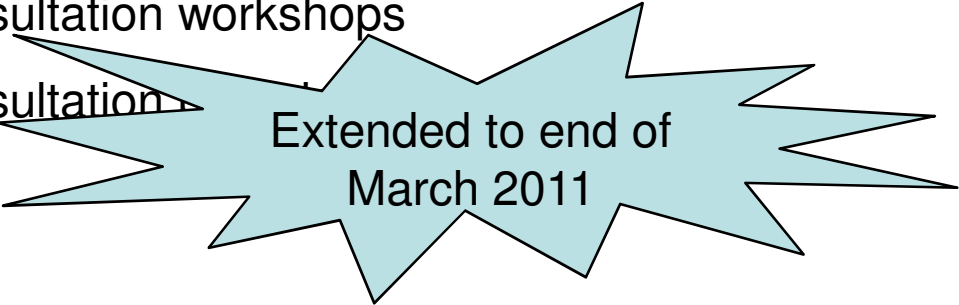
- An SEA is a formal, systematic evaluation of the likely significant environmental effects of implementing a plan before a decision is made to adopt the plan.
- The SEA is intended to provide a framework to influence decision-making at an early stage when plans – which give rise to projects – are being developed.
- The SEA provides an assessment at a strategic level (e.g. national/regional) with EIA providing a more detailed assessment at a more specific project level.

Aims of the SEA

- Integrating environmental information into the Plan
- Review potential resource/capacity (GW) for offshore wind, wave and tidal energy in Irish waters.
- Consider alternatives
- Mitigate environmental effects
- Assessment of the effects on the marine environment and other marine users

SEA – story to date

- Jun 2009: DCENR, as competent authority, request that SEAI, in collaboration with MI, undertake an SEA
- Jul 2009: SEA Scoping Report published and sent to Environmental Authorities (DCENR, DEHLG & EPA)
- Oct 2009: Aecom & Metoc, supported by CMRC, chosen as SEA environmental consultants
- Nov 2009: Scoping Consultation Workshop
- Mar 2010: Targeted consultation with industry and stakeholders
- Oct 2010: Publication of SEA Environmental Report and draft plan
- Nov 2010: 4 regional public consultation workshops
- Jan 2011: Closing date for consultation



Extended to end of
March 2011

The SEA is prepared by the environmental consultants under the direction of a Technical Steering Group.

The TSG manage and oversee all aspects of the SEA, and is made up of a wide range of organisations, including:

- Sustainable Energy Authority of Ireland (SEAI)
- Marine Institute
- Department of the Environment, Heritage and Local Government
- Department of Communications, Energy and Natural Resources
- Environmental Protection Agency
- Department of Arts, Sports and Tourism
- Department of Agriculture, Fisheries and Food
- Department of Transport
- Department of Defence
- NPWS
- NOW Ireland
- GSI
- Eirgrid
- MRIA
- Irish Environmental Network

SEA of the OREDP



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Draft Offshore Renewable Energy Development Plan

Public Consultation

November 2010

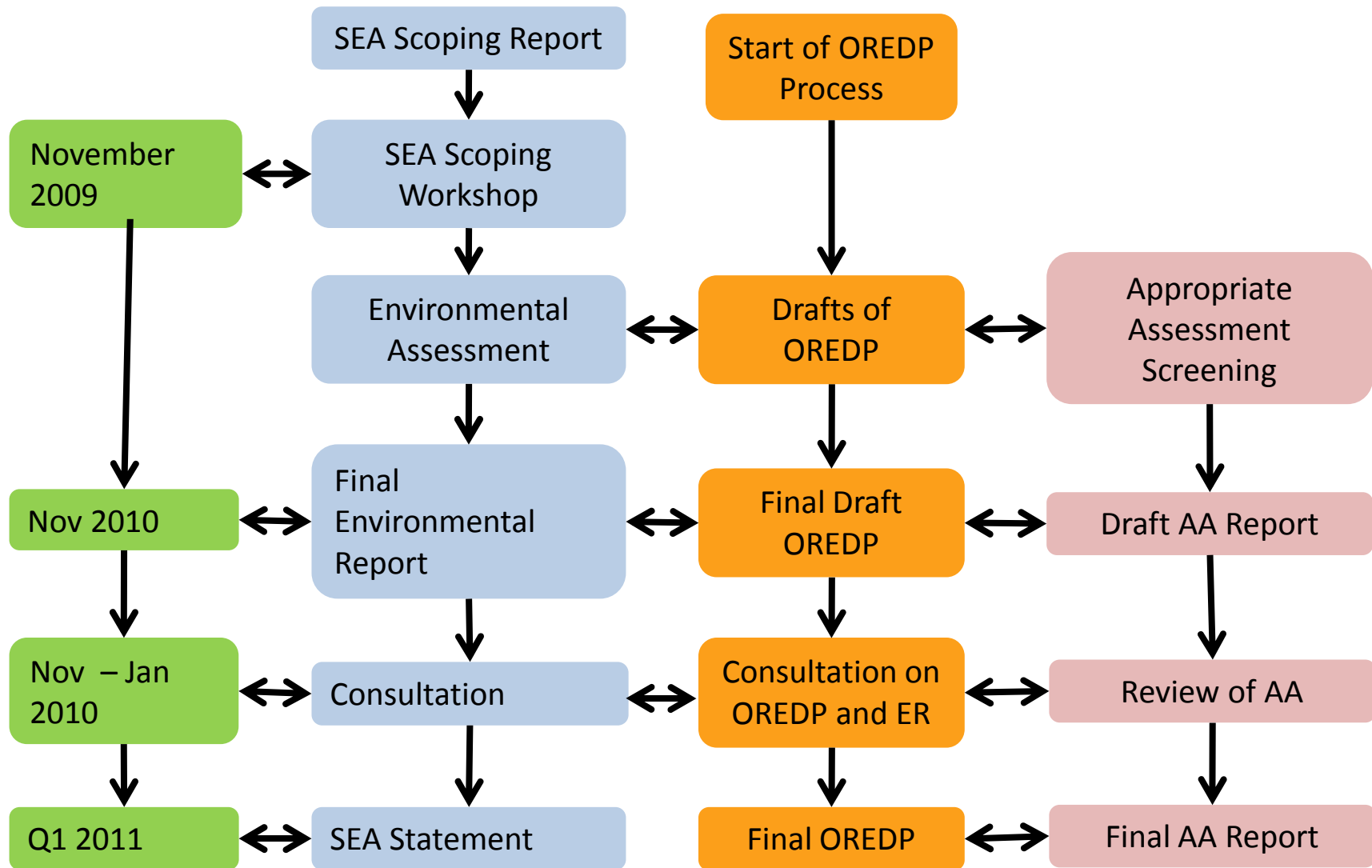


Department of Communications, Energy and Natural Resources
Roinn Cumarsáide, Fuinnimh agus Acmhainní Nádurtha

Why?

- Policy Juncture
- Activities in several related areas – many policy decisions open
- Need to reform foreshore consenting
- SEA on development scenarios to inform policy going forward and ensure environmental considerations built into any development
- Year long study by consultants undertaken to produce SEA Environmental Report

SEA and AA Programme



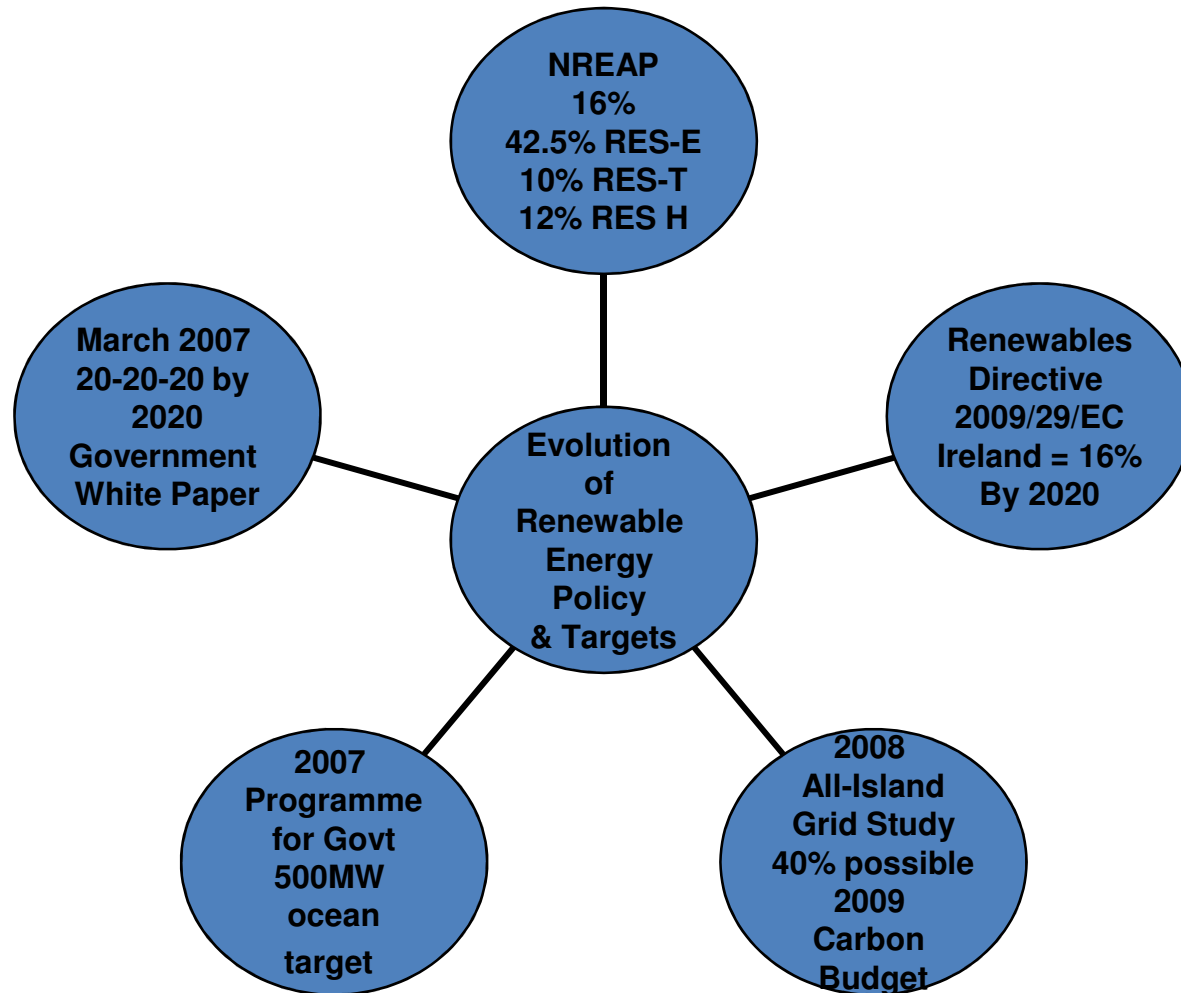
SEA Development Scenarios to 2030

	Low Scenario (MW)	Medium Scenario (MW)	High Scenario (MW)
Offshore Wind	800	2300	4500
Wave & Tidal Current	75	500	1500

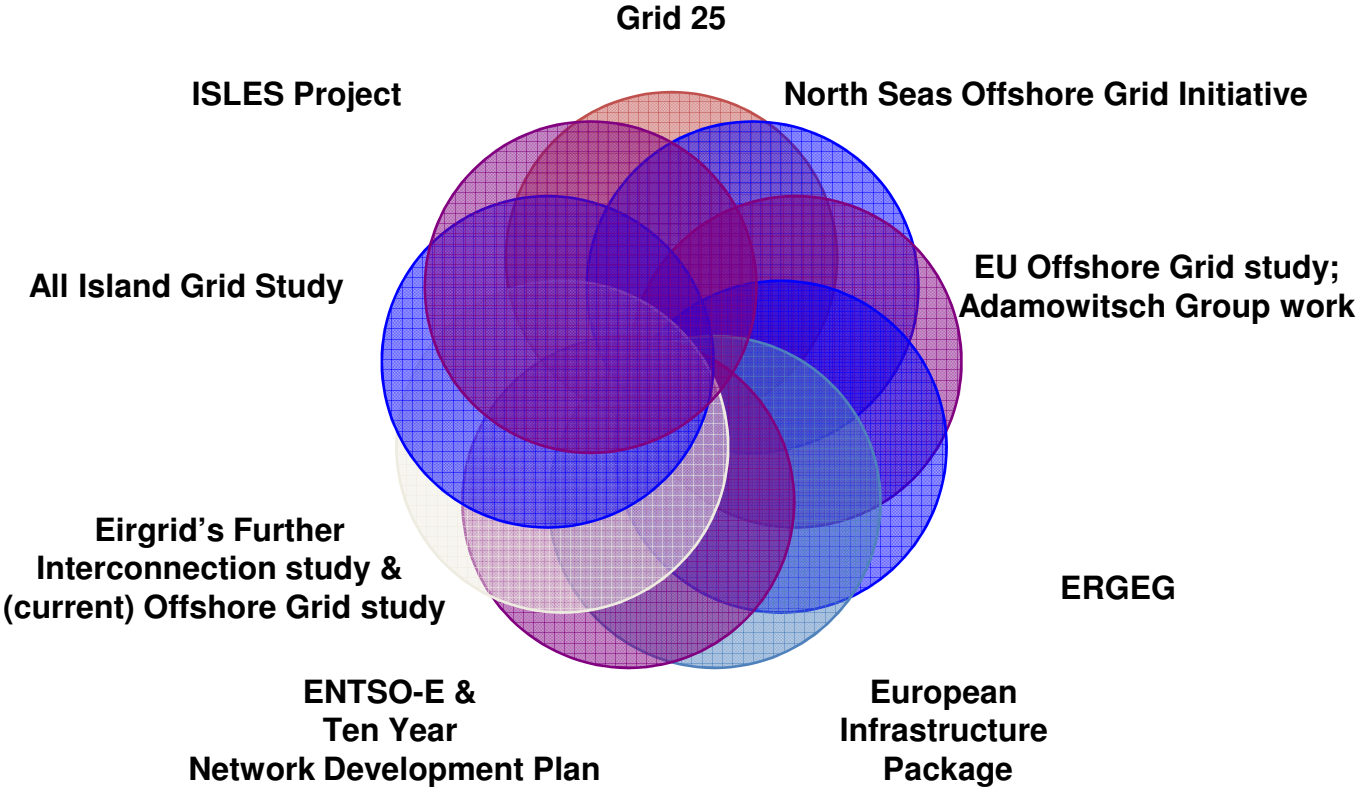
Background & Context

- Renewable electricity policy context
- Grid (onshore/offshore)
- Planning & Foreshore Leasing
- Offshore Wind
- Wave & Tidal Development in Ireland

Renewable Electricity Policy Context



Grid – Policy context and developments

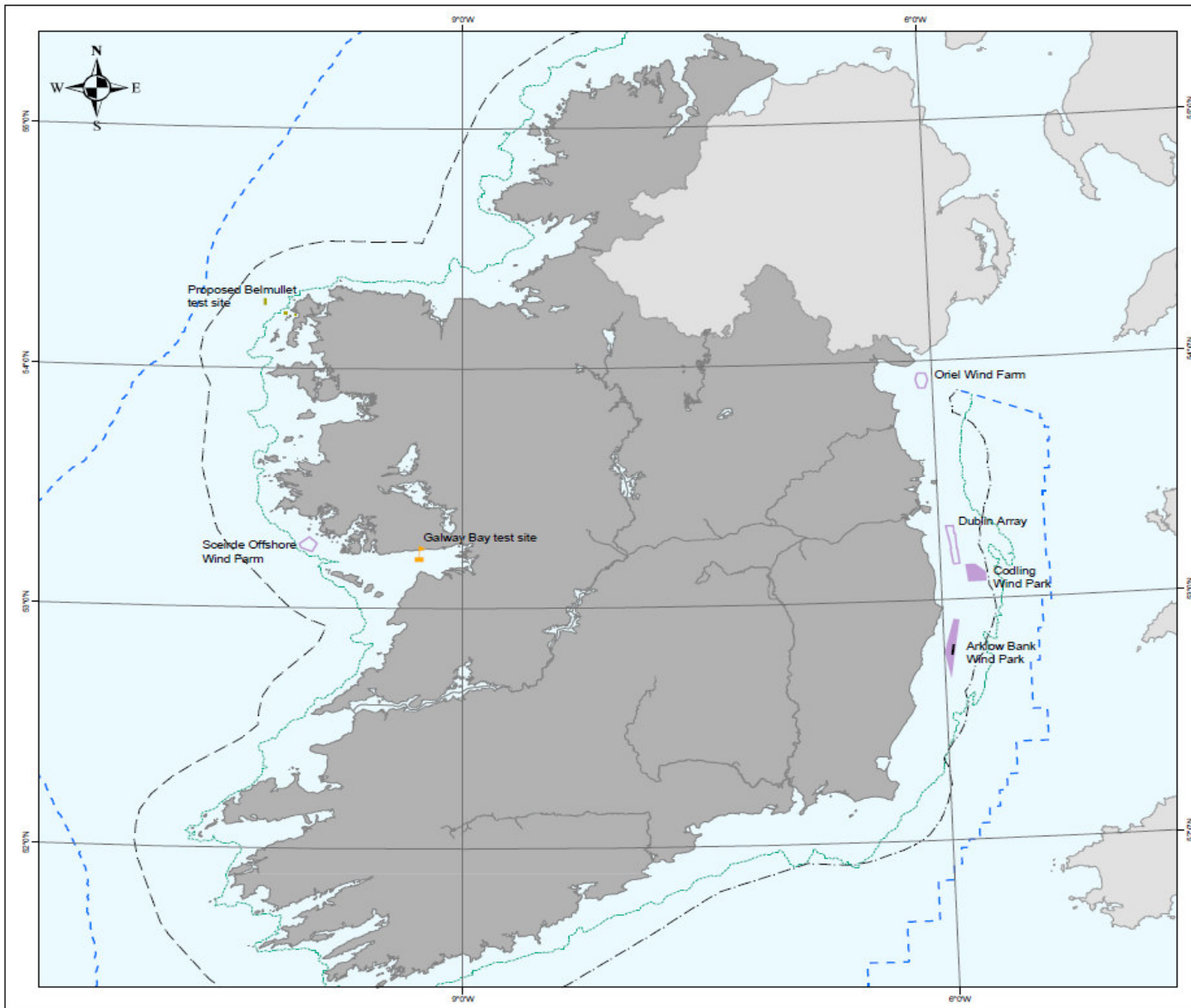


Planning & Foreshore Leasing

- Foreshore Acts 1933 to 2009
- Lease required for development
- Regulatory functions transferred to Dept of Environment January 2010
- Marine Spatial Plan
- Intention: Establish a robust and effective foreshore consent system that provides rigorous environmental controls and that is integrated with existing consent systems relating to development on land.

Offshore Wind

- Rapidly maturing technology EU /world
- Ireland – 25 MW (Arklow Banks)
- 2 leased sites (no grid)
- 3 developments in Gate 3
- NREAP – 555MW in modelled scenario
- REFIT - €140 MWh



Strategic Environmental Assessment of Wave, Tidal and Offshore Wind Development in Irish Waters

Figure 9.6.3: Existing Renewable Infrastructure

Legend

Background

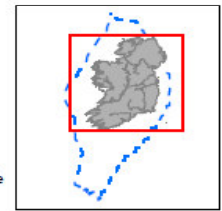
- Ireland
- United Kingdom
- Study area
- 12nm limit
- 60m contour

Renewable Infrastructure

- Wind farm in operation
- Windfarm lease area
- Winfarm lease area under application
- Proposed Belmullet wave energy test site
- Wave energy test site

Note 1: Not to be used for navigation

Note 2: Full study area not shown. There is no existing renewable infrastructure relevant to this figure outside of the map extent.



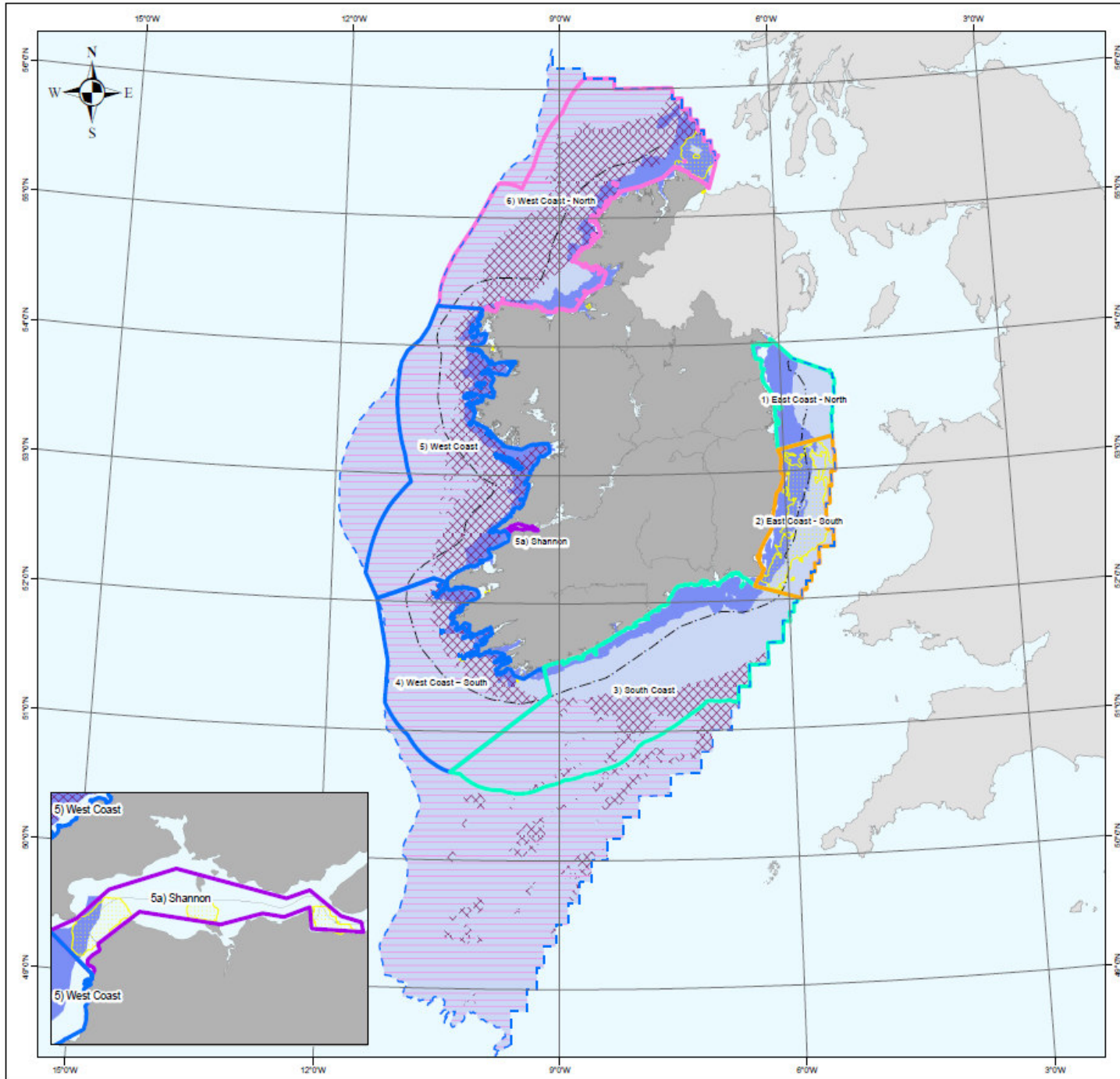
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File Reference	J:\P1304\Mxd\Final Figures\ 9.5.3 Existing Renewable Infrastructure.mxd	
Checked	Produced By	Anna Place
	Reviewed By	Sally Holroyd

Wave & Tidal

- Ocean Energy Strategy 2005
- Strong resources in Ireland
- OEDU set up in SEAI
- Wave & Tidal – still at RD&D stage globally
- Prototype Development Fund
- Galway Bay /Belmullet test sites
- HMRC – National Wave Tank /MERC 3
- Smartbay
- Marine Institute – Harnessing Ireland's potential
- INFOMAR – mapping Ireland's marine resource
- Various studies SEAI
- REFIT Tariff

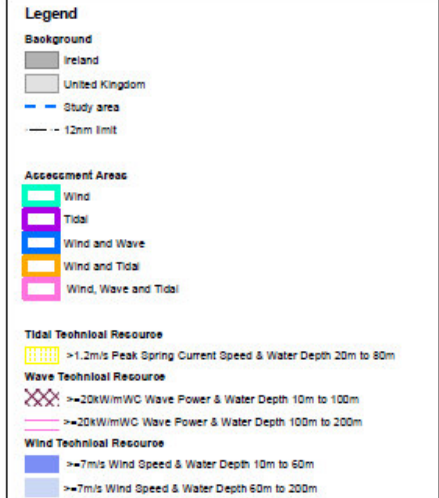
Technologies covered in each assessment area

Assessment Area	Location	Tidal	Wave	Offshore Wind
1	East Coast (north)	Not covered	Not covered	Covered
2	East Coast (south)	Covered	Not covered	Covered
3	South Coast	Not covered	Not covered	Covered
4	West Coast (south)	Not covered	Covered	Covered
5	West Coast	Not covered	Covered	Covered
5a	Shannon Estuary	Covered	Not covered	Not covered
6	West Coast (north)	Covered	Covered	Covered



Strategic Environmental Assessment of Wave, Tidal and Offshore Wind Development in Irish Waters

Figure 11.4: Assessment Areas - All Resource



Note 1: Assessment Areas extend from the coast (Mean High Water) to a distance of 100km, within the boundary of the Irish Exclusive Economic Zone only

Note 2: Not to be used for navigation



Date	Wednesday, October 6, 2010 15:41:07	
Projection	WGS_1984_UTM_Zone_29N	
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File Reference	J:\P1304\Mxd\Final Figures\l.mxd 11.4 Assessment Area_All	
Checked	Produced By	Anna Place
	Reviewed By	Sam Franklin

Data Gaps & Uncertainties

- Acknowledged Gaps
- Difficult to fill at a strategic level – geographic scale; inaccessibility of marine environment; traditionally collected on specific areas
- Technology gaps – greater for wave & tidal
- Options to deal with this
 - At a strategic level where possible
 - Individual Project level
 - Deploy & Monitor Approach
- Various uncertainties and unknown effects

SEA Conclusions: Cumulative Effects

- Possible to reach scenarios without significant adverse effects on environment
- Cumulative Assessment
- Floating wind - still emerging
- 4500MW fixed offshore wind potentially achieved entirely off the east coast (areas 1 & 2) or entirely in area 6
- Significant wave resource could be developed in 4,5 and 6
- Tidal potential more constrained – Assessment Areas 2 and 6

Assessment Results in each assessment area

Assessment Area**	Fixed Wind (MW)	Wave: 0 to 100m Water Depth (MW)	Wave: 100m to 200m Water Depth (MW)	Tidal (MW)*	Floating Wind (MW)	Total
1: East Coast (North)	1200 to 1500					1200 to 1500
2: East Coast (South)	3000 to 3300			750 to 1500		3750 to 4800
3: South Coast	1500 to 1800				6000	7500 to 7800
4: West Coast (South)	600 to 900	500 to 600	3000 to 3500		5000 to 6000	9100 to 11000
5: West Coast	500	5000	6000 to 7000		7000	18500 to 19500
5a: Shannon Estuary				-		-
6: West Coast (North)	3000 to 4500	7000 to 8000	6000 to 7000	750 to 1500	7000 to 8000	23750 to 29000
Total	9800 to 12500	12500 to 13600	15000 to 17500	1500 to 3000	25000 to 27000	63800 to 73600

9 Recommended Actions

- Collaboration & Co-ordination
- SEA Monitoring Requirements
- Addressing Data, Information & Knowledge Gaps
- Consenting & Permitting
- Guidance & Advice

Potential for offshore renewable development

- Offshore Grid/Infrastructure evolution
- “Export” idea
- Co-operation mechanisms under Directive 2009/28/EC
- Technology developments
- Technology improvements/economics (cost)
- Enterprise dimension

Public Consultation /Next Steps

- Public consultation until mid January
- Transboundary Consultation
- Workshops & written submissions
- Email oreseaconsultation@seai.ie
- Following consultation – review feedback
- Post consultation report
- Finalise draft plan
- Issue Ministerial statement as to how environmental considerations integrated into plan and how feedback considered

Reviews & Monitoring

- 2015 initial review
- 2020 full review
- Greater co-ordination – mechanism to ensure significant environmental effects of the plan monitored going forward



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OREDPA, SEA & AA Current Status Update:

- Consultation period extended until at least late March to prepare a Natura Impact Statement (NIS) as required under the Habitats Regulations
- The Natura Impact Statement will inform the Appropriate Assessment of the OREDPA
- In accordance with best practice recommendations of the relevant environmental authority, NPWS, the NIS will be available alongside the draft plan and environmental report for a period of no less than 4 weeks.

i.e. NIS to be published in the next couple of weeks, end of consultation 4 weeks later.

To be kept informed of all the OREDP, SEA & AA related developments send your contact details to

oresea@seai.ie

Copies of the SEA Environmental Report Executive Summary and CDs with all the reports, figures and appendices are available

Thank you



EUROPEAN REGIONAL
DEVELOPMENT FUND



Ireland's EU Structural Funds
Programmes 2007 - 2013

Co-funded by the Irish Government
and the European Union

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