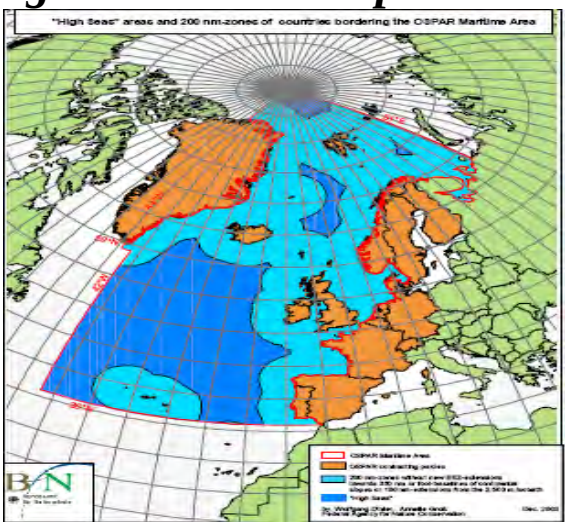
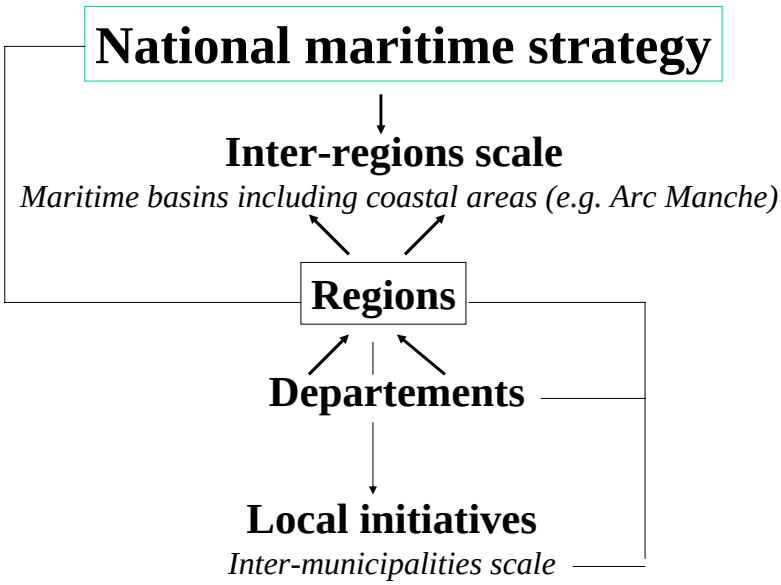
Maritime Spatial Planning II through concrete examples



Ocean and Policy Research Foundation, 27 October 2009
Yves Henocque, IFREMER-OPRF Visiting Fellow

The Brittany Coastal Charter

About the double track approach

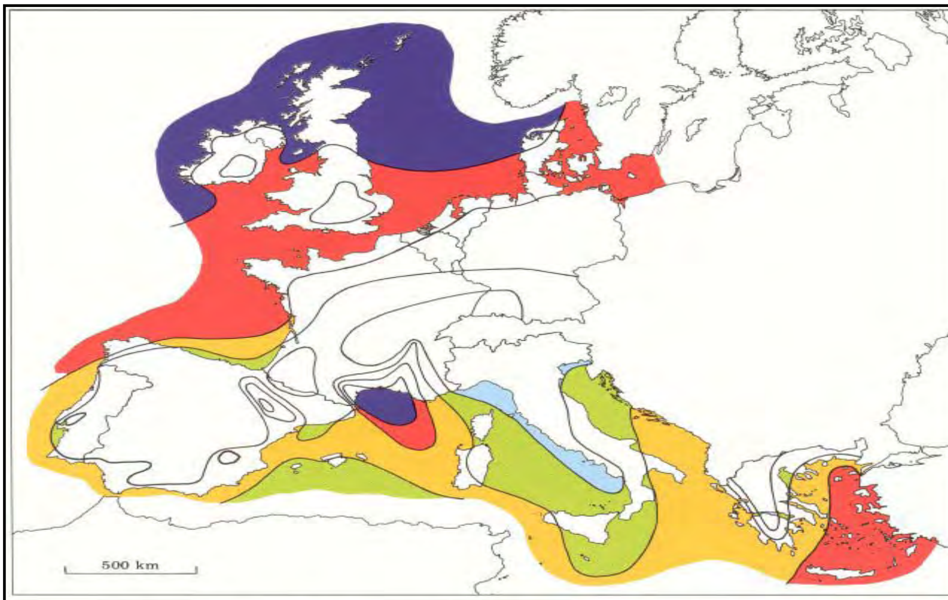


MARINE ENERGIES IN BRITTANY : IT ALL DEPENDS ON US !

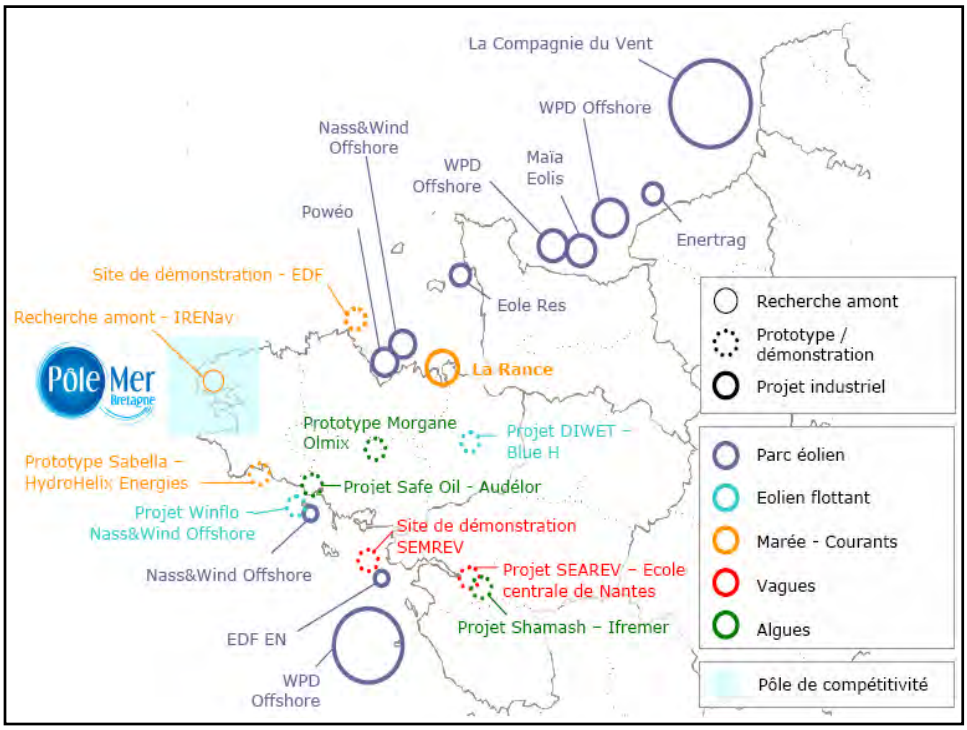
- **to develop marine energies in Brittany** tackling the energy challenge and contribute to France commitments on renewable energies while promoting local development ;

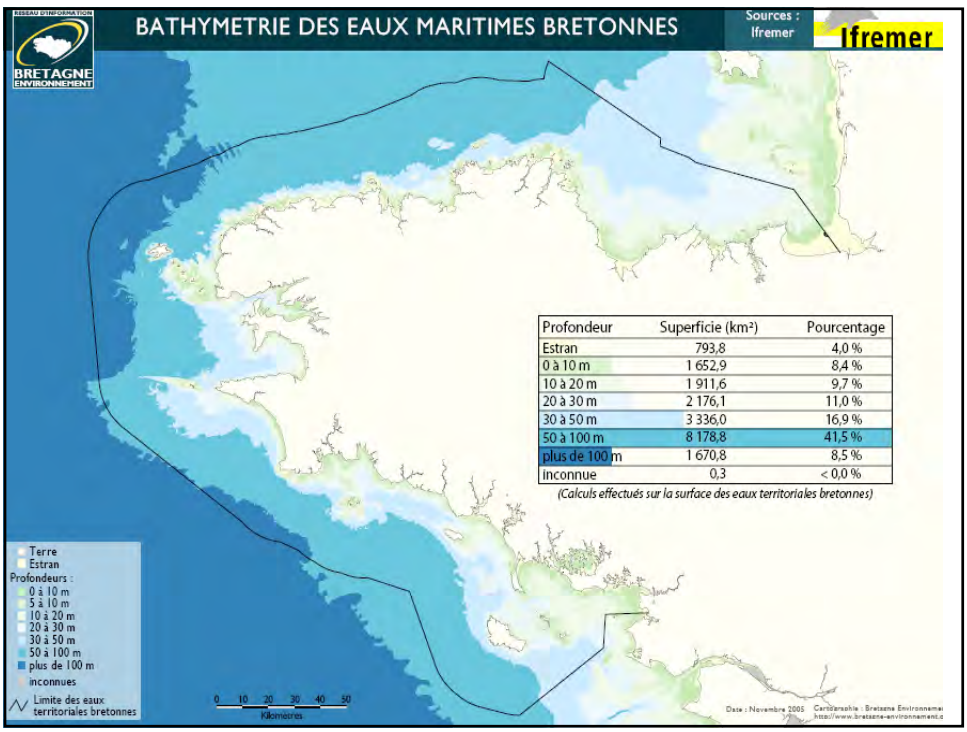
- **to define an industrial conversion strategy** through promoting and supporting a new industrial activity in regard to the development of a maritime economy, source of wealth and employments;

- **to create a research and expertise consortium of international rank ;**



Wind resources over open sea (more than 10 km offshore) for five standard heights										
	10 m		25 m		50 m		100 m		200 m	
	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}
(purple)	> 8.0	> 600	> 8.5	> 700	> 9.0	> 800	> 10.0	> 1100	> 11.0	> 1500
(red)	7.0-8.0	350-600	7.5-8.5	450-700	8.0-9.0	600-800	8.5-10.0	650-1100	9.5-11.0	900-1500
(orange)	6.0-7.0	250-300	6.5-7.5	300-450	7.0-8.0	400-600	7.5- 8.5	450- 650	8.0- 9.5	600- 900
(green)	4.5-6.0	100-250	5.0-6.5	150-300	5.5-7.0	200-400	6.0- 7.5	250- 450	6.5- 8.0	300- 600


La Compagnie du Vent
WPD Offshore
Nass&Wind Offshore
WPD Offshore
Maïa Eolis
Enertrag
Powéo
Site de démonstration - EDF
Eole Res
Recherche amont - IRENav
Pôle Mer Bretagne
La Rance
Prototype Morgane Olmix
Projet DIWET – Blue H
Prototype Sabella – HydroHelix Energies
Projet Safe Oil - Audélor
Projet Winflo Nass&Wind Offshore
Site de démonstration SEMREV
Nass&Wind Offshore
Projet SEAREV – Ecole centrale de Nantes
Projet Shamash – Ifremer
EDF EN
WPD Offshore
Recherche amont
Prototype / démonstration
Projet industriel
Parc éolien
Eolien flottant
Marée - Courants
Vagues
Algues
Pôle de compétitivité


BATHYMETRIE DES EAUX MARITIMES BRETONNES
Sources : Ifremer
Ifremer
BRETAGNE ENVIRONNEMENT
Profondeur | Superficie (km²) | Pourcentage
Estran | 793,8 | 4,0 %
0 à 10 m | 1 652,9 | 8,4 %
10 à 20 m | 1 911,6 | 9,7 %
20 à 30 m | 2 176,1 | 11,0 %
30 à 50 m | 3 336,0 | 16,9 %
50 à 100 m | 8 178,8 | 41,5 %
plus de 100 m | 1 670,8 | 8,5 %
inconnue | 0,3 | < 0,0 %
(Calculs effectués sur la surface des eaux territoriales bretonnes)
Terre
Estran
Profondeurs :
0 à 10 m
5 à 10 m
10 à 20 m
20 à 30 m
30 à 50 m
50 à 100 m
plus de 100 m
inconnues
Limite des eaux territoriales bretonnes
0 10 20 30 40 50
Kilomètres

NATIONAL PREVISIONS (2020)

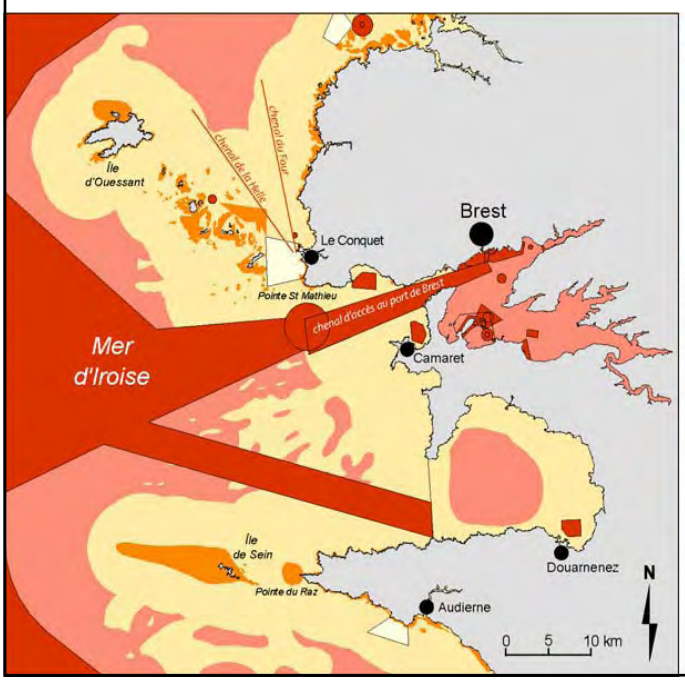
4 000 MW offshore wind farms= about 400 km² (10 MW/km²)
= 16 fields of 50 wind mills (fields of 25 km²)
= 25 fields of 30 wind mills (fields of 16 km²)
= 50 fields of 15 wind mills (fields of 8 km²)

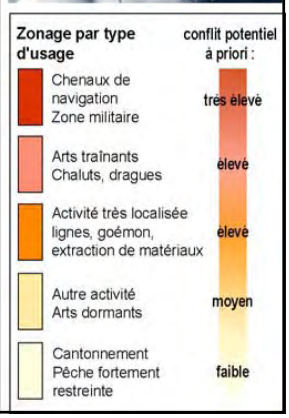
BRITTANY REGION PREVISIONS (2020)

1 000 MW offshore wind farms= about 100 km²
= 4 fields of 50 wind mills (fields of 25 km²)
= 7 fields of 30 wind mills (fields of 16 km²)
= 14 fields of 15 wind mills (fields of 8 km²)

⟶ 0,5% of Brittany territorial waters

Maritime activities sensitivity and potential conflicts with wind farms





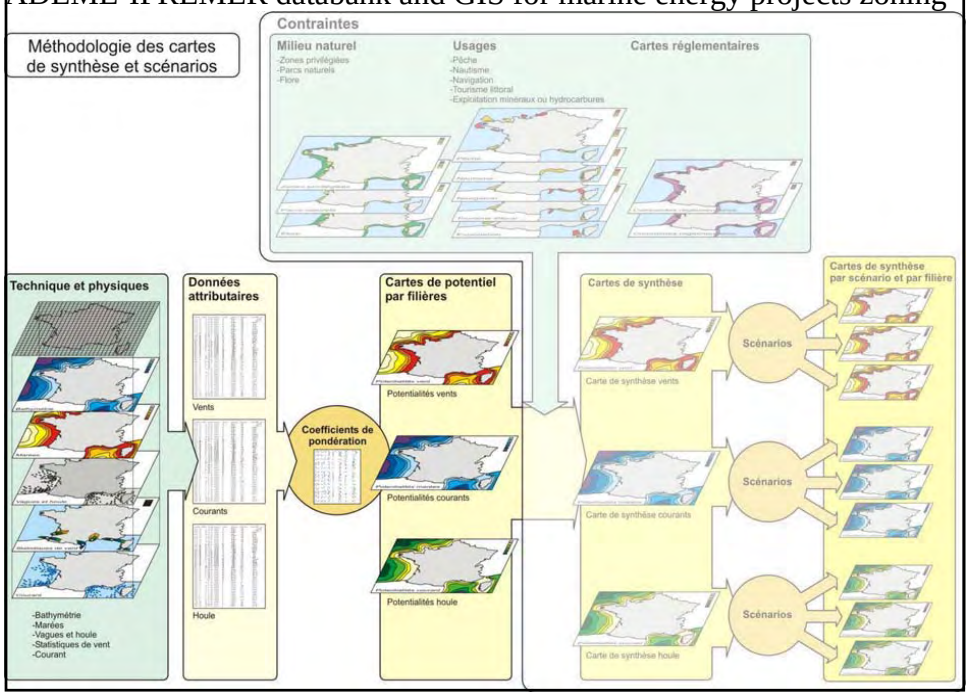
Synergies between fishers and marine energies production

•Fishers' involvement in areas identification with regard to their marine environment knowledge ;

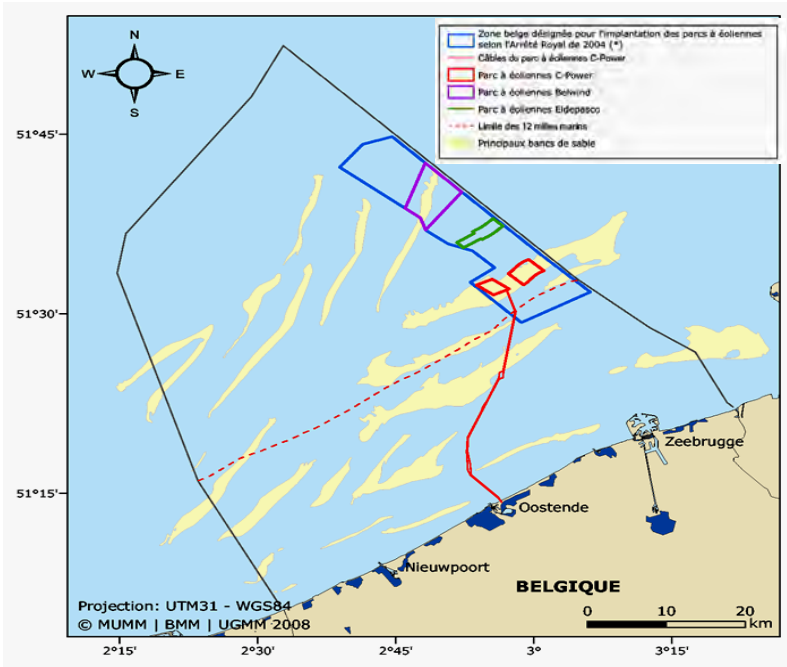
•Projects optimisation with regard to their impact on fishery resources – coupling with fisheries enhancement projects ;

•Fishers' involvement in the installment and maintenance of marine farm fields with regard to their abilities.

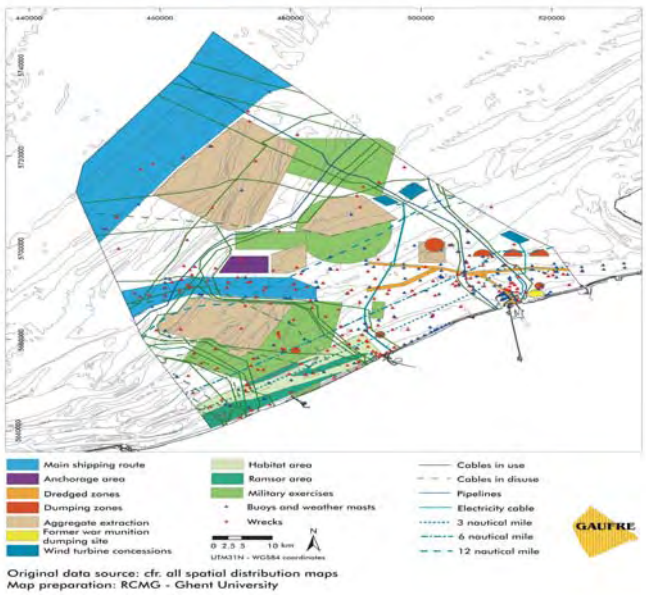
ADEME-IFREMER databank and GIS for marine energy projects zoning

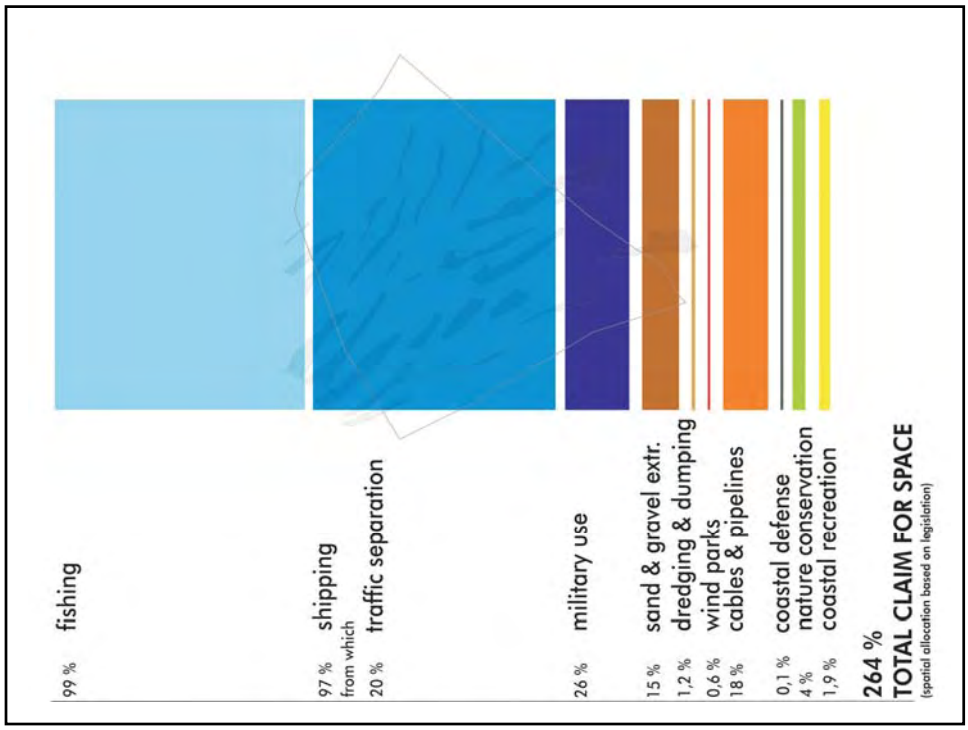


Wind farms zoning within Belgium territorial waters



GAUFRE: Towards a spatial structure plan for sustainable Management of the North Sea

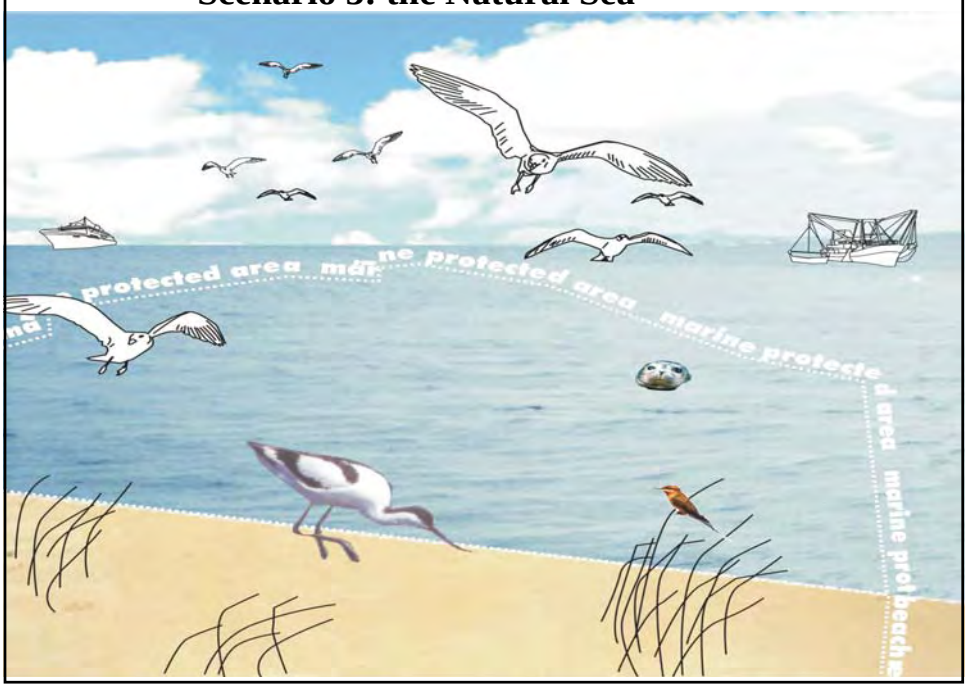




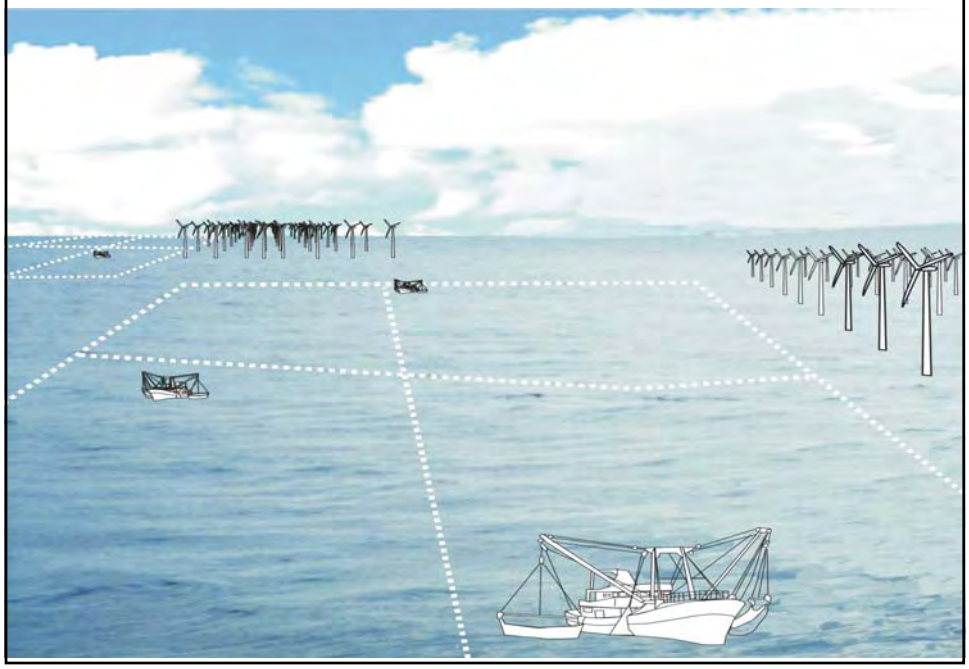
Scenario 1: The Relaxed Sea – Atmospheric image

Scenario 2: the Playful Sea

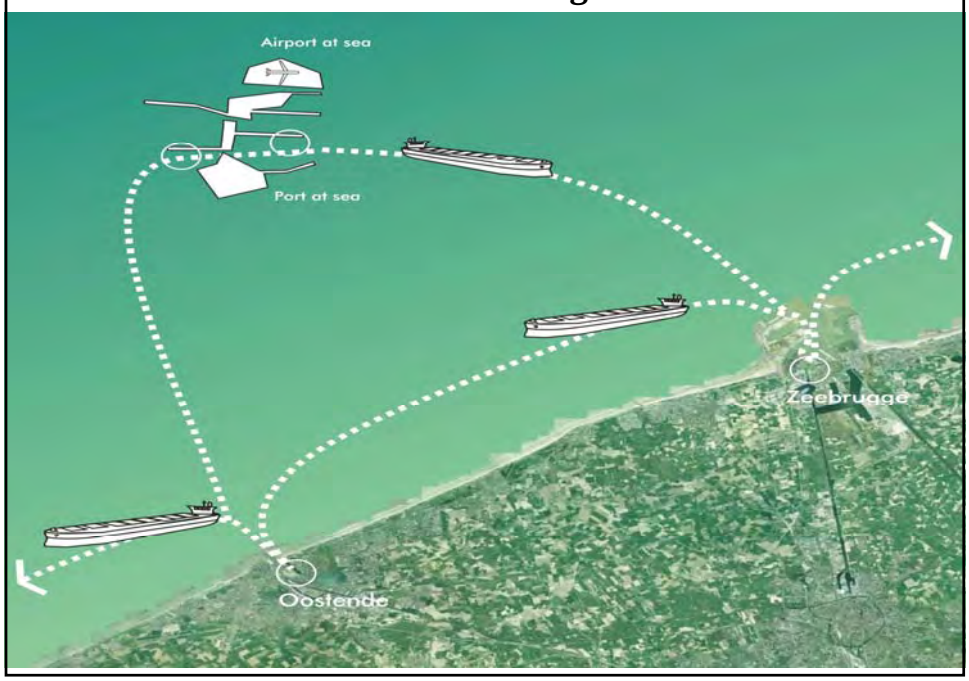
Scenario 3: the Natural Sea



Scenario 4: the Rich Sea



Scenario 5: the Sailing Sea



Overview of resource and use issues

•The Belgian sector of the North Sea is very **heavily used** by Belgium, its neighbours and the international community
•Major longstanding uses are **shipping, fishing and sand and gravel extraction**
•Disposal of **dredged spoil** and demands for deeper channels to service **competing ports** are substantial issues
•The area is fished by Belgian and other fishers. Information on the relative importance of areas for particular fisheries is not available. The real **economic significance of fisheries** in the local inshore areas (territorial waters) is not known neither is the economic and resource demand significance of the same area for recreaional fishing.

Overview of resource and use issues

•The 68km coast is a largely developed area of substantial significance for **recreation and tourism**.

•A new and potentially major use flowing from national energy policy is the establishment of **windfarms**.

•The Belgian North Sea is part of the **much larger system** of the southern North Sea/Northern English Channel. A coherent understanding of its biodiversity and of any ecological significance will involve working with neighbouring countries.

Firth of Clyde Marine Spatial Plan
(Scottish Sustainable Marine Environment Initiative)

« Marine Spatial Planning
is a tool that enables the delivery of ICZM »

www.clydeforum.org/SSMEI