

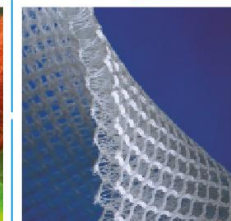
# Advanced textiles for open sea biomass cultivation (AT~SEA)

Bert Groenendaal  
SIOEN Industries NV

• STAGE 2 - PART B - FULL PROPOSAL •



## ADVANCED TEXTILES FOR OPEN SEA BIOMASS CULTIVATION



SME TARGETED COLLABORATIVE PROJECT  
NMP.2011.4.0-3  
ADVANCED TEXTILES FOR THE ENERGY AND ENVIRONMENTAL  
PROTECTION MARKETS

# SIOEN at a glance



- Founded in 1960; headquarters in Ardoorie (BE)
- 3 divisions: Coating, Apparel and Chemicals
- Ca. 4.500 employees; 323 Mio EUR turnover (2011)
- World market leader in coated textiles and European market leader in protective clothing

## Activities:

- Spinning and weaving of technical textiles
- Coating via different technologies
- Confectioning towards (semi)final products

**Protection through innovation!**

# SIOEN products for marine applications



Technical yarns



Ropes & cables



Floatation suits



Safety scrim

Safety and load securing

Thermal clothing

Non-wovens

Geotextiles

High visibility

High tenacity fabrics

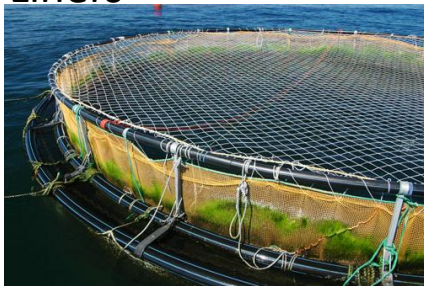
Bullit and/or impact proof

Wind protection

Fire protection

Tarpaulins

Liners



Covers



Oil booms



Geoliners



# Why this project?



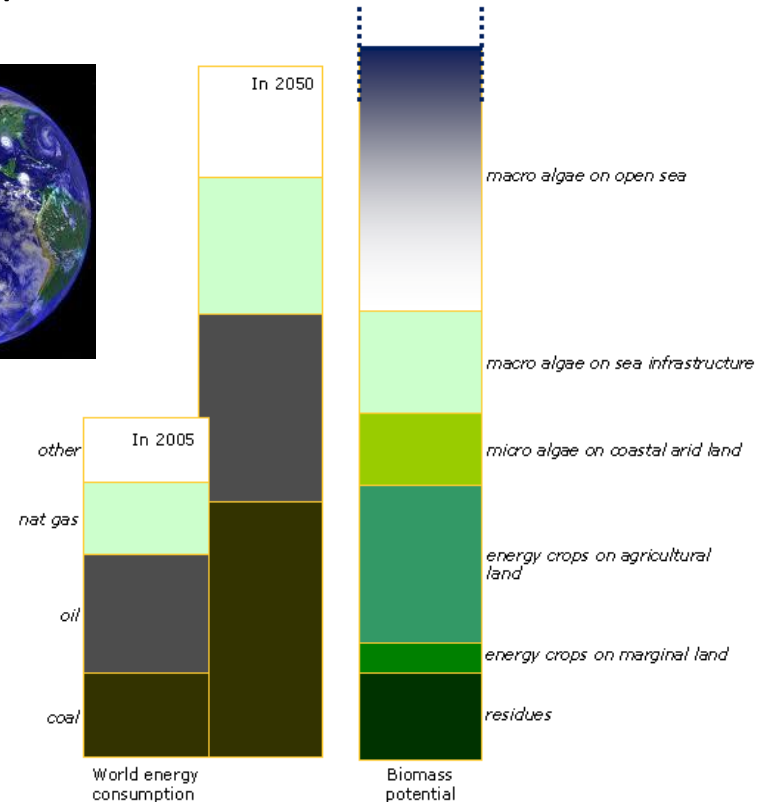
## The need:

- More energy for strongly growing population
- Renewable and sustainable energy
- Sustainable/biobased materials
- Solve food/feed – energy nexus



## The concept:

- Development of advanced textiles to facilitate open sea cultivation of aquatic biomass (seaweed), having a high-potential as a source for renewable energy, fuels and biomaterials



## Advanced textiles for open sea biomass cultivation

# Overall project objectives

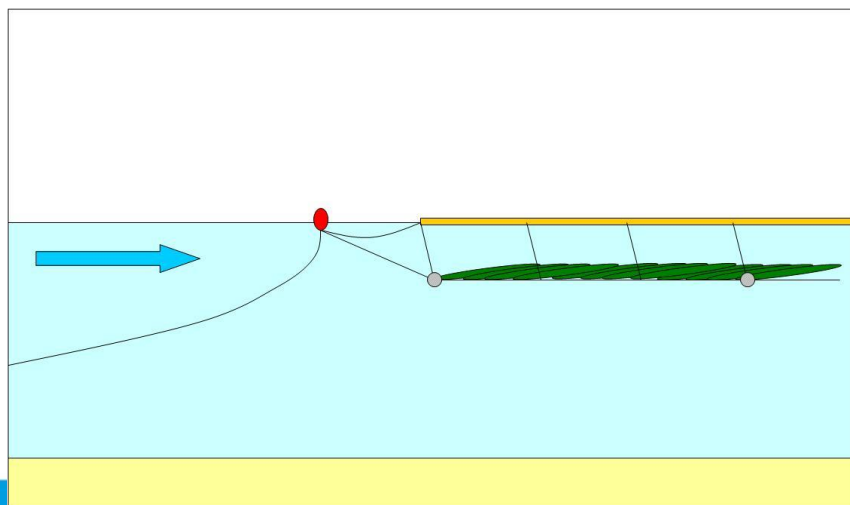


The project targets the development of novel textile materials for 3 different elements of the aquatic biomass cultivation farms:

- Advanced 3D multilayer textile substrates for seaweed cultivation
- Advanced textile based cables and connections for positioning and anchoring of the 3D multilayer textile substrate
- Advanced coated textiles for flexible and light-weight floatation tubes, as well as for storage and transportation tanks



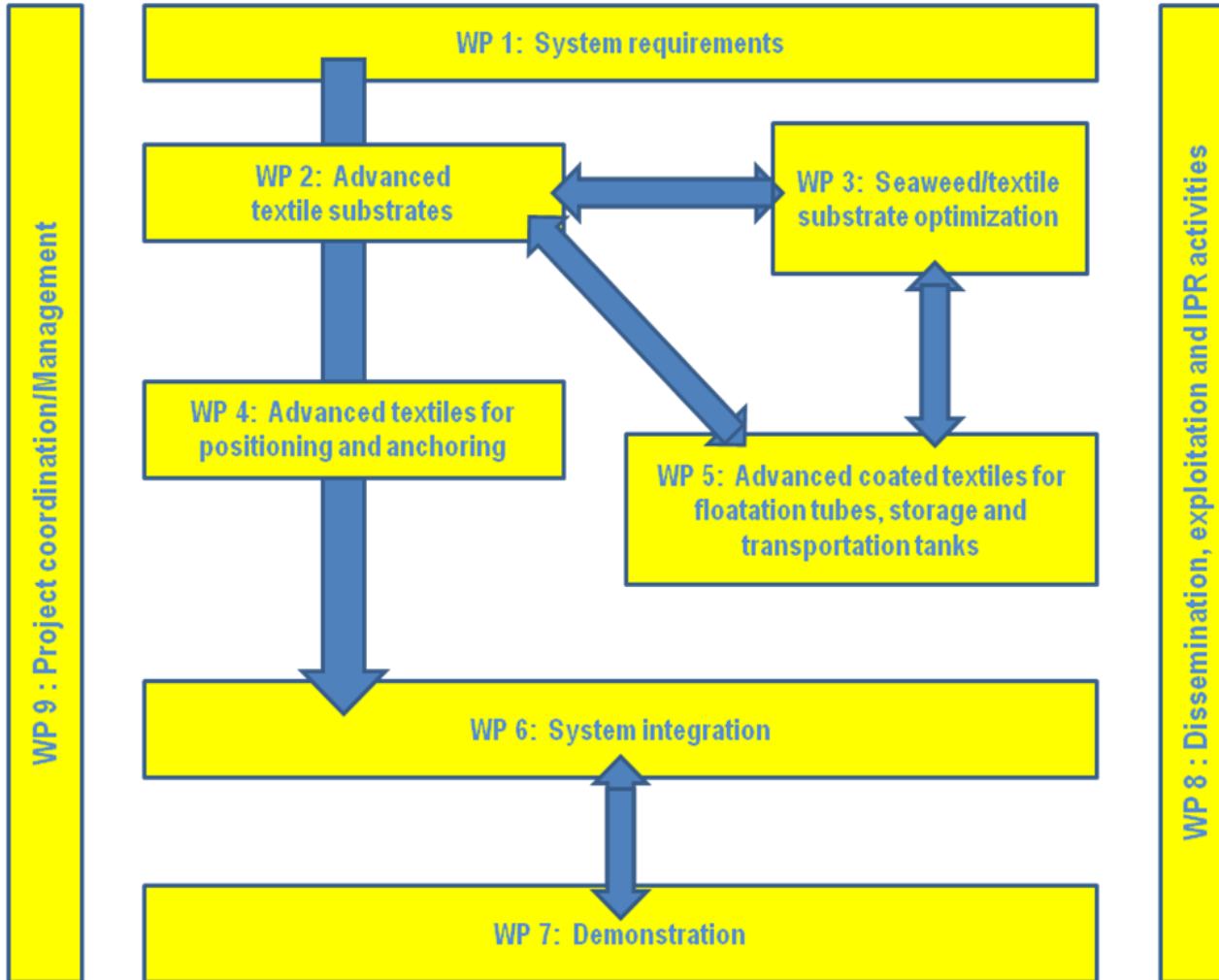
... resulting in a  
10 m x 50 m demonstrator



# State of the art today



# Project structure and work packages



# Consortium





Participant no.	Participant legal name	Country	Organisation type (expertise)
1 (Coordinator)	Sioen Industries	BE	LE ((non)woven & coated textiles)
2	Devan Micropolis	PT	SME (textile modification)
3	Hortimare	NL	SME (seaweed biology)
4	Oceanfuel	IRL	SME (aquatic biomass production)
5	Eurofilet	MA	SME (offshore textile confectioning)
6	ECN	NL	RTD (aquatic biomass engineering)
7	Centexbel	BE	RTD (textiles, testing)
8	SAMS	UK	RTD (offshore research & testing)
9	Marintek	NO	RTD (mooring analyses)
10	Bexco	BE	SME (offshore ropes/connections)
11	Tecnored	ES	SME (offshore nets)

- 11 partners; 8 countries; 6 SME's; 4 RTD's; 1 LE
- Multidisciplinary team!

# Summary



Work programme:	FP7-NMP-2011-SME-5
FP7 project number :	280860
Starting date:	April 1, 2012
Duration:	36 months
Coordination:	SIOEN Industries
Consortium:	11 partners (6 SME's, 4 RTD's and 1 LE)
Budget:	4.7 Mio EUR
Funding:	3.4 Mio EURO

More info ...



Bert Groenendaal  
Project coordinator

SIOEN Industries NV  
Fabriekstraat 23  
8850 Ardooie (Belgium)

[bert.groenendaal@sioen.be](mailto:bert.groenendaal@sioen.be)

GSM: +32 476 98 43 79