DIRECTORY OF SKILLS

MARINE RENEWABLE ENERGY IN PAYS DE LA LOIRE









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About this directory

Dedicated to stakeholders in the marine renewable energy sector, this directory is a non-exhaustive inventory of the skills and knowhow present in the Pays de la Loire region, with on the one hand, industrial and service companies (positioned on the different links of the value chain) and on the other, the main players in research and innovation (academics, competitiveness clusters...).

This project is the result of a collective effort carried by L'Agence régionale - Pays de la Loire Territoires d'Innovation, in close cooperation with the Neopolia MRE cluster, the Saint-Nazaire offshore wind farm consortium led by EDF Énergies Nouvelles, the company Les éoliennes en mer de Vendée (consortium led by ENGIE) and all the regional structures involved in the development and the structuring of the marine renewable energy sector.

For this 2015 version, 200 companies (selected by all the stakeholders) were questioned. You will find all the structures who responded before the date of publication.

This document will be regularly updated.

Please transmit your requests for modifications by email to Caroline Garcin

<u>c.garcin@agence-paysdelaloire.fr</u>

of L'Agence régionale - Pays de la Loire Territoires d'Innovation.

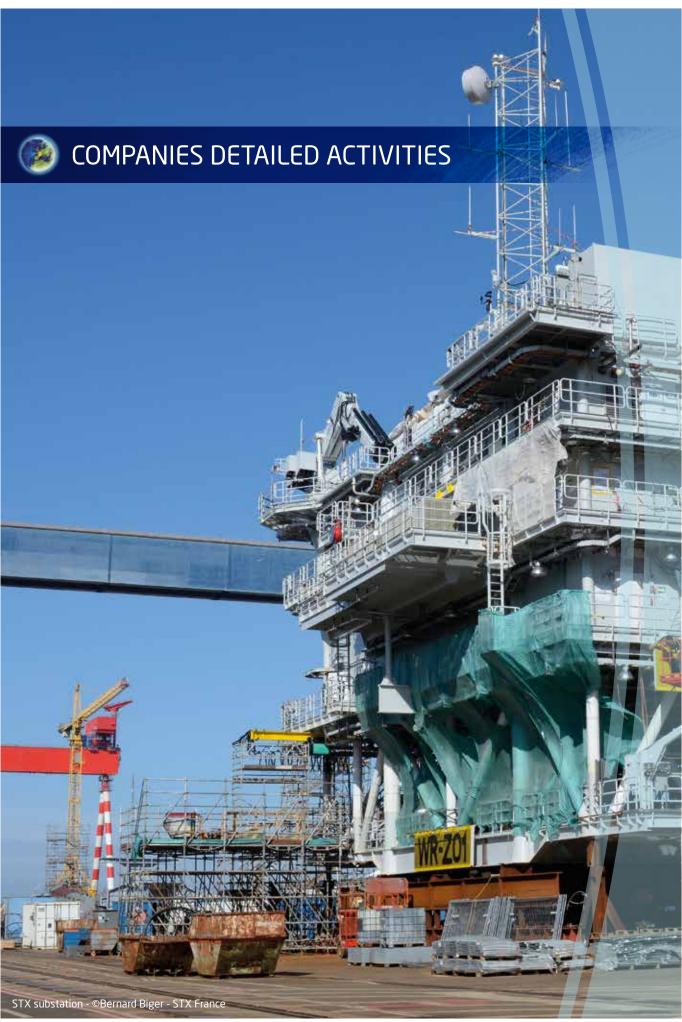


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NEOPOLIA

Neopolia is a network which brings together industrial companies from the Pays de la Loire region. An association founded and run by local business owners aiming to increase diversification and competitiveness of companies in the region, Neopolia supports clients in their innovative approaches and works alongside regional institutions to ensure balanced industrial development in the territory.

Neopolia MRE: customized solutions for Marine Renewable Energy

The MRE Business Cluster groups 85 industrial companies with around thirty skills. A Piloting Committee comprising 12 directors defines the strategic and commercial policy guidelines for the MRE cluster.

The organization around 8 strategic business activities enables companies to be grouped by expertise and develop alliances to reach MRE markets.

8 strategic business activities

The 85 companies are positioned on one or several of the eight strategic business activities defined by the cluster:

- 1 Land-based Infrastructures
- 2 Industrial Processes & Tooling
- **3** Logistics & Supply Chain
- 4 Primary & secondary steel
- **5** Integrated Systems
- **6** Complex assemblies for turbines
- **7** Operations & Maintenance
- 8 Support Vessels

Each strategic business activity includes a "pilot" company and a cluster of companies.

The company clusters in each strategic business activity work with 3 tangible focuses:

- Collaborative BtoB projects carried out with the major market stakeholders to identify and quantify needs,
- Joint construction of strategic company positioning,
- Individual, group or co-development project responses.

Partnerships:

To promote skills improvements and increased orders for its member companies, Neopolia MRE has signed 4 partnerships:

- STX France SA: Partnership convention and implementation of co-industrialization groups undertaken to construct metal foundations and offshore electrical substations,
- Alstom Wind Offshore: Industrial cooperation framework and implementation of co-development groups for the industrialization and production of the Haliade 150,
- Éolien Maritime France: EDF Énergies Nouvelles, DONG Energy, WPD Offshore and Neopolia MRE work together for the development of the industrial expertise of cluster companies, thus enabling them to offer competitive solutions to project stakeholders,
- The Éoliennes en mer de Vendée (Vendée Offshore Wind Turbines): ENGIE, EDPR, Neoen, Adwen and Neopolia EMR work together to develop the industrial expertise of cluster companies, enabling them to offer competitive solutions to project stakeholders.

Contact:

Simon Fradet - Project Manager s.fradet@neopolia.fr www.neopolia.fr

ACFRI

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating		Operations and maintenance	Human Resources - Training	
	Mechanical and electrome- chanical components Cast parts		Support Vessels		
		Foundations Offshore installations			
		Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring				
	Hydraulics - Pneumatics High and Low				

Activity:

• **Equipment maintenance:** periodic inspections and certification **MRE references:**

Voltage Electricity

Acebi designs and produces:

- equipment for offshore operations and safety, stabilized access gangways for offshore wind turbines and electrical stations for access from stationary crewboats and support vessels at sea.
- marine handling cranes.
- Acebi has developed a compensated access gangway to wind turbines from service vessels that compensates for vessel movements.

Qualifications:

Acquired: EN ISO 9001

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ADF COTE OUEST

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES
	Composites Metal Construction		Monitoring - Safety	Quality control - Safety - Certification
	Surface treatment - Coating		Operations and maintenance	
	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels	
		Foundations Offshore installations		
	Instrumentation - Monitoring			waste treatment
	Hydraulics - Pneumatics			

Activity:

- **Sheet metal work:** large and medium-scale sheet metal work, stainless steel, fine sheet metal work, plates, special steels, steel structures, steel joinery
- Small industrial metal work Pipe work: pipe work
- **Special machinery:** automation, manufacturing transformation process

MRE references:

Production of transportation cradles for wind turbine nacelles for ALSTOM.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - MASE Currently being acquired: EN ISO 3834

Contact:

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MRE Contact:

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AFC-STAB

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLIN
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
			waste acatment	

Activity:

- Manufacturer of plastic and composite parts: composite moulds and tools
- **Mechanical machining:** large-size machining, high-precision machining
- Engineering Design office: manufacturing processing, mechanics, tools

MRE references

- 5-axis CNC machining of soft materials (to aluminium). Design of tooling and moulds.
- NDA and negotiations in progress.

Qualifications:

Currently being acquired: EN ISO 9001

Contact:

MERLE Henrick henrick.merle@afc-stab.com Tel. +33 (0) 228 25 09 27 10, rue Bréguet 44680 Saint-Hilaire-de-Chaléons

MRE Contact:

MERLE Henrick henrick.merle@afc-stab.com Tel. +33 (0) 228 25 09 27

ALSTOM RENEWABLE POWER

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating		Operations and maintenance		
	Mechanical and electrome- chanical components	Onshore assembly at dock			
	Cast parts HVAC - Air conditioning - pressurization	Foundations Offshore installations			
	Power electronics - Com- mand-control systems	Electrical connection			
	Instrumentation - Monitoring	Transport - Handling -		Haste a cualification	
	Hydraulics - Pneumatics High and Low Voltage Electricity	Port services			

Activity:

- Engineering Design office: structural materials calculations, manufacturing transformation processes, mechanics, tooling, energy
- Integration of industrial equipment: automation, instrumentation regulation, LV HV equipment (boxes,...), power electronics, command-control systems, hydraulics, electricity

MRE references:

ALSTOM has been involved in the development of the Haliade offshore wind turbine and OcéadeTM tidal power in the Pays de la Loire region.

Qualifications:

Acquired: EN ISO 9001

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MRE Contact:

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ALUMARINE SHIPYARD

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		
	Composites Metal Construction		Quality control - Safety - Certification
	Hydraulics - Pneumatics		

Activity:

• Mounting - Assembly

MRE references:

Manufacture of aluminium structures and parts.

Contact:

CONSTANCE Stéphan sconstance@alumarine.fr Tel. +33 (0) 240 65 19 31 Le Port Launay 44220 Couëron

MRE Contact:

DAMBRIN Jean-Bernard jbdambrin@alumarine.fr Tel. +33 (0) 240 65 34 54

AMPH				2000年
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
	Surface treatment - Coating			
	Mechanical and electrome- chanical components Cast parts			

Activity:

• Mechanical machining: large-dimension machining **Qualifications:**

Currently being acquired: EN ISO 9001

Contact:

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MRE Contact:

FERCHAUD Thierry t.ferchaud@amph.fr Tel.+33 (0) 251 91 11 59

STUDIES COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT Preliminary - Contextual Studies Geotechnical - Geophysical studies Socio-industrial studies Resource measurements Wind - Wave - Current Measurements Environmental Impact Studies COMPONENTS AND SUB-ASSEMBLIES FOR MRE ASSEMBLIES FOR MRE EQUIPMENT INSTALLATION AND LOGISTICS INSTALLATION AND LOGISTICS Monitoring - Safety Operations and maintenance Operations and maintenance Training Support Vessels Insurance Bank - Financing Waste treatment Waste treatment Waste treatment

Activity:

• H&S monitoring, Technical inspection

Contact:

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ARCADIS						
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING	
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works				
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation				
		Onshore assembly at dock				
		Foundations				
Current Measurements						
Environmental Impact Studies		Transport - Handling -				
		Port services				

Activity:

• **Engineering** - **Design Office:** project management, project management support

MRE references:

Port infrastructure: project management of the polder 124 in Brest. Design of the extension to the Flammands quay in Cherbourg.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - MASE

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ARTELIA

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
		Onshore assembly at dock	Support Vessels		
		Foundations			
		Offshore installations			
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems	Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring				
Stadies	Hydraulics - Pneumatics	Transport - Handling - Port services			
	High and Low Voltage Electricity				

Activity:

- **Engineering Design office:** project management, project management assistance, structural analysis materials, energy
- **Building Structural work:** civil engineering, dismantling, project management assistance
- Maritime Service

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

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MRE Contact:

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ASSISTANCE AÉRONAUTIQUE ET AÉROSPATIALE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLIN
	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating		Operations and maintenance	Human Resources - Training	
	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels	Insurance	
	Power electronics - Com- mand-control systems	Electrical connection			
	Instrumentation - Monitoring	Transport - Handling -			
	Hydraulics - Pneumatics High and Low Voltage Electricity				

Activity:

- Mounting Assembly: hydraulics, electrical electronic cabling, mechanics
- Integration of industrial equipment: hydraulics, electricity

Qualifications:

Acquired: EN ISO 9001

Contact:

CHAUBY Gilles gchauby@aaa-aero.com Tel. +33 (0) 148 06 85 85 Batîment H Parc tertiaire Icare ZI de Cadréan 44550 Montoir de Bretagne

MRE Contact:

LACHAT Claire clachat@aaa-aero.com Tel. +33 (0) 688 30 16 50

ASSYSTEM

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLIN
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
	Cast parts				
	HVAC - Air conditioning - pressurization				
	Power electronics - Com- mand-control systems	Electrical connection			
	Instrumentation - Monitoring				
	Hydraulics - Pneumatics				
	High and Low Voltage Electricity				

Activity:

• Engineering - Design Office: project management, project management support, structural - materials calculations, mechanics, energy, technical assistance and advice

Qualifications:

Acquired: EN ISO 9001 - OHSAS - MASE

Contact:

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ATELIERS PRESQU'ILE 3D

			TOTAL STREET	
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
	Composites Metal Construction		Quality control - Safety - Certification	
	Surface treatment - Coating			
	Mechanical and electrome- chanical components			
	Cast parts HVAC - Air conditioning - pressurization			
			waste treatment	

Activity:

• Mechanical machining: high-precision machining **Qualifications:**

Acquired: EN ISO 9001 - EN 14001

Contact:

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MRE Contact:

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ATLANTIQUE QUALITE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES
	Composites Metal Construction		Quality control - Safety - Certification
			Human Resources - Training

Activity:

• Quality Control, Inspection, Non Destructive Testing

MRE references:

- NDT for ADF Côte Ouest on transport cradles of wind turbine nacelles for ALSTOM. With the support of our group (SOCOTEC):
- Technical control CARNET site (France) offshore wind,
- NDT of 30 wind turbines on the site Ashegoda in Mekele in Ethiopia,
- Scientific computing on wind turbine for SADAC,
- Checking aeromechanics a pale wind for SADAC.

Qualifications:

Acquired: ISO 9001-MASE

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AUXITEC INDUSTRIE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
	Surface treatment - Coating	Drilling - Seabed preparation		
		Onshore assembly at dock		
	Cast parts HVAC - Air conditioning - pressurization	Foundations Offshore installations		
	Power electronics - Com- mand-control systems			
	Instrumentation - Monitoring		naste treatment	
	Hydraulics - Pneumatics High and Low Voltage Electricity			

Activity:

- **Engineering Design office:** project management, project management support, structural materials calculations, mechanics, energy
- Manufacturing of industrial equipment: automation, LV HV equipment (boxes,...), command-control systems, project management

Qualifications:

Acquired: EN ISO 9001 - MASE

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MRE Contact:

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AVHS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating	Operations and maintenance		
	Mechanical and electrome- chanical components Cast parts			
Environmental Impact Studies	Instrumentation - Monitoring Hydraulics - Pneumatics			

Activity:

- Tool-maker: small tools
- Equipment maintenance: tooling
- Manufacturer of lifting equipment: hydraulic cylinders and generators

MRE references:

- Enerpac cylinders from 5T to 2000 T.
- Hydraulic generator 700 B / 1000 B and +.
- Synchronized generator for precision handling.
- Hydraulic generator for wrenches.
- Tensioner for controlled tightening.
- Cofrac calibration for hydraulic torque wrenches.
- Official dealer for Enerpac- Cylinders, hydraulic generators 700 B / 1000B / 2500B.
- Tooling supplier for STX and ALSTOM WIND.

Qualifications:

Currently being acquired: EN ISO 9001

Contact:

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MRE Contact:

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AXSON FRANCE

		2000		
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			

• Manufacturer of plastic and composite parts: composite, elastomer

MRE references:

Formulator and producer of Epoxy systems for the production of composite parts (blades...). GL certified systems.

Production of structural adhesives.

Qualifications:

Acquired: EN ISO 9001 - EN 14001

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MRE Contact:

NOIRCLERC Patrick patrick.noirclerc@axson.com Tel. +33 (0) 240 71 03 12

BANQUE POPULAIRE ATLANTIQUE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES
	Composites Metal Construction		
			Bank - Financing
			Bank Tindrem6

Activity:

• Banking institution

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BEE ENGINEERING

Bee enameenma					
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
	Mechanical and electrome- chanical components	Onshore assembly at dock			
Resource measurements	Cast parts HVAC - Air conditioning -	Foundations			
Wind - Wave -	pressurization	Offshore installations			
Current Measurements	Power electronics - Com- mand-control systems	Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring	Transport - Handling -			
	Hydraulics - Pneumatics	Port services			
	High and Low Voltage Electricity				

Activity:

• **Engineering - Design office:** project management, project management support, structural - materials calculations, mechanics, energy

MRE references:

We work with CMN and HydroQuest to develop electrical sub-systems for tidal power installations in the "Searius" project.

Qualifications:

Currently being acquired: EN ISO 9001 - MASE

Contact:

SOUFFEZ Olivier olivier.souffez@bee-eng.fr Tel. +33 (0) 673 17 37 44 1, rue Saint Julien - 44000 Nantes

MRE Contact:

LE BASTARD Matthieu matthieu.le-bastard@bee-eng.fr Tel. +33 (0) 678 99 32 40

BESNE MECANIQUE DE PRECISION

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT			DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
	Surface treatment - Coating Mechanical and electrome-			
	chanical components			
Staniez				

Activity:

- **Mechanical machining:** large-dimension machining, large-dimension assembly, very high precision machining, studies
- Tool-maker: molds, large tooling, assembly line, studies
- Engineering Design office: mechanics, tooling, energy, automation

MRE references:

- Aeronautics.
- Defense.
- Energy.
- Aeronautical assembly lines.
- Test benches.
- Industrial processes with automation or robotics.
- Developments in Wind Turbines and Tidal Power.

Qualifications:

Acquired: EN ISO 9001

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ANGER Loïck loick.anger@elyps.fr Tel. +33 (0) 240 17 33 30 ZA La Harrois 44160 Besné

MRE Contact:

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BESSÉ

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
			Insurance	
			Bank - Financing	
			Waste treatment	

Activity:

Insurance consultancy

Contact:

BESSÉ Pierre valerie.sastre@besse.fr Tel. +33 (0) 240 41 49 00 46 bis, rue des Hauts Pavés - 44000 Nantes

MRE Contact:

RENELIER François francois.renelier@besse.fr Tel. +33 (0) 240 41 49 00

BILLET MARINE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
	Surface treatment - Coating	Operations and maintenance		
	Mechanical and electrome- chanical components Cast parts	Support Vessels		
	Power electronics - Com- mand-control systems			
Environmental Impact Studies	Instrumentation - Monitoring			

Activity:

- **Shipyard:** naval maintenance
- **Mounting Assembly:** hydraulics, electrical electronic cabling, mechanics
- **Industrial equipment integration:** power electronics, hydraulics, electricity

Contact:

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MRE Contact:

BILLET Mickaël billetmarine@orange.fr Tel. +33 (0) 617 81 47 99

BIO-LITTORAL

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Current Measurements	Power electronics - Com- mand-control systems			
Environmental Impact Studies	Instrumentation - Monitoring			
	Hydraulics - Pneumatics			

Activity:

• Engineering - Design office: Marine environment ecology and industry. MRE references:

Marine biodiversity, operation of marine ecosystems, aquaculture, Natura 2000, impact studies, expertise and advice in the marine industrial development field (taxonomy, diving, skips, trawling, remote sensing, sonar, modelling).

Contact:

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MRE Contact:

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BIOTOPE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
	Composites Metal Construction		Quality control - Safety - Certification	
Current Measurements	Power electronics - Com- mand-control systems			
Environmental Impact				
Studies	Hydraulics - Pneumatics			

Activity:

• Engineering - Design office: environment

MRE references:

- Engineering office specializing in naturalist expertise, landscape, regulatory studies (impacts), consulting in the environmental integration of developments.
- 20 years experience including more than 10 years in marine and coastal environments, numerous studies for offshore wind turbine projects in France (Atlantic, Channel, Mediterranean).
- Specific expertise: expertise in avifauna, marine mammals, radar appraisal.
- R&D service with development of stand-alone tools for marine environment assessments (multi-instrument buoys) and specific radars for marine environments.
- 10 offshore wind turbine projects (bottom-mounted and land-based).
- 1 Ocean Thermal Energy project.
- 1 tidal power project.

Contact:

MELKI Frédéric siegesocial@biotope.fr Tel. +33 (0) 467 18 46 20 BP 60103 44201 Nantes

MRE Contact:

LECORPS Florian flecorps@biotope.fr Tel. +33 (0) 240 05 32 30

BLUE WATER SHIPPING

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING		
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works					
		Drilling - Seabed preparation					
		Onshore assembly at dock					
		Transport - Handling -					
		Port services					

Activity:

- **Logistics provider:** factory line-side supply, exceptional transport, heavy and outsize packages, maritime transport
- **Port Logistics provider:** exceptional transport, heavy and outsize packages, international logistics, handling

MRE references:

- 20 years experience in MREs and bottom-mounted wind turbines in Europe.
- We work with all wind turbine manufacturers.
- Management of 1 million m2 of port area in Denmark.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS

Contact:

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MRE Contact:

GIRARDIN Marianne prowind_bre@bws.dk Tel. +33 (0) 298 44 90 91

BUREAU VERITAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES
	Composites Metal Construction		Quality control - Safety - Certification
			Human Resources - Training
	Hydraulics - Pneumatics		

Activity:

• Certification, Risk analysis

Contact:

CORRIGNAN Philippe philippe.corrignan@bureauveritas.com Tel. +33 (0) 240 92 48 92 67-71, bd du Château 92200 Neuilly sur Seine

CALIDRIS

Cricibiti	7	- 77/285		
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Wind - Wave - Current Measurements				
Environmental Impact Studies				

Activity

• Engineering - Design office: environmental studies MRE references:

- Fauna flora impact studies for connecting MRE projects.
- Impact studies for MRE projects.
- Guideline documents for MRE projects.

Contact:

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MRE Contact:

BARGUIL Gaétan gaetan.barguil@calidris.fr Tel. +33 (0) 251 11 35 90

CETEAL

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLIN
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation		
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock		
	Cast parts HVAC - Air conditioning -	Foundations		
		Offshore installations		

Activity:

• **Engineering - Design office:** project management assistance, structural analysis - materials, manufacturing process - processing

MRE references:

- Pilot tidal turbine farm of Paimpol-Bréhat.
- Baie de Fundy tidal power demonstration.
- Offshore wind farm, Fécamp.

Qualifications:

Currently being acquired: EN ISO 9001

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MRE Contact:

MARIN Yves yves.marin@ceteal.eu Tel. +33 (0) 240 80 32 33

CHANTIER NAVAL DELAVERGNE SARL

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		
		Support Vessels	

Activity:

- **Shipyard:** aluminum, large and medium-scale sheet metal work, superstructures
- Sheet metal work: aluminum

Contact:

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MRE Contact:

DELAVERGNE Johanna DELAVERGNE 2@wanadoo.fr Tel. +33 (0) 251 22 32 21

CHANTIER VENDEEN

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
	Surface treatment - Coating			
	Mechanical and electrome- chanical components Cast parts	Support Vessels		
	Power electronics - Com- mand-control systems			
Environmental Impact Studies	Instrumentation - Monitoring Hydraulics - Pneumatics			
	High and Low Voltage Electricity			

Activity:

• **Shipyard:** maintenance

- Integration of industrial equipment: hydraulics, electricity, mechanics
- Equipment maintenance: electromechanics

Contact:

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MRE Contact:

BILLET Mickaël billetmarine@orange.fr Tel. +33 (0) 617 81 47 99

CHARIER SA

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works		Quality control - Safety - Certification	
		Drilling - Seabed preparation			
		Offshore installations			
		Electrical connection			
	High and Low Voltage Electricity				

Activity:

• Industrial equipment manufacturing: LV - HV equipment (boxes...) Qualifications :

Acquired: EN ISO 9001 - EN 14001 - MASE

Contact:

BAZIREAU Paul pbazireau@charier.fr Tel. +33 (0) 240 17 14 14 BP 1 - 44550 Montoir de Bretagne

MRE Contact:

NIZAN Christian cnizan@charier.fr Tel. +33 (0) 609 37 13 92

CHOUTEAU ATLANTIQUE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		DISMANTLI
	Composites Metal Construction	Infrastructures - civil works		
		Drilling - Seabed preparation		
			waste treatment	

Activity:

• **Sheet metal work:** large and medium-scale sheet metal work, plates, special steels, steel structures

MRE references:

- Parts from 1 Kg to 30 tonnes.
- DONG and SAIPEM / TOTAL project in 2nd level with STX.
- Manufacturing of mechanically welded structures and small metal work.
- Sheet metal work elements.

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MRE Contact:

FONTANGE Lionel lionel.fontange@club-internet.fr Tel. +33 (0) 642 80 88 40

COFELY ENDEL

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	1
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels		
		Foundations Offshore installations			
		Electrical			
		connection Transport - Handling -		waste treatment	
	Hydraulics - Pneumatics High and Low Voltage Electricity	Port services			

Activity:

- Small industrial metal work Pipe work: pipe work
- **Sheet metal work:** large and medium-scale sheet metal work, stainless steel, fine sheet metal work, plates, special steels, steel structures
- Equipment maintenance: electromechanics

MRE references:

- Production of large-dimension 600 mm gas pipes.
- Special welding.
- Assembly of the tripod for the Open Hydro tidal power structure (Brest).
- Barge loading (lifting equipment, handling) of the Voith tidal power system in Cherbourg.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS - MASE

Contact:

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MRE Contact:

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COLAS CENTRE OUEST

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
		Drilling - Seabed preparation		

Activity:

• **Building - Structural work:** granulates, earthwork, civil engineering structures, dismantling, highways, hydraulic networks

MRE references:

Design-production of the ALSTOM Power factory in Montoir de Bretagne 44.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS - MASE

Contact:

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MRE Contact:

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CONSEPT INGENIERIE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification
	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training
	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels	Insurance
	Cast parts	Foundations		
Resource measurements Wind - Wave -	pressurization	Offshore installations		
	Power electronics - Com- mand-control systems	Electrical connection		
	Instrumentation - Monitoring	Transport - Handling -		
	Hydraulics - Pneumatics			
	High and Low Voltage Electricity			

Activity:

• Engineering - Design office: project management support, structural - materials calculations, manufacturing - transformation processes, mechanics, tooling

Qualifications:

Acquired: EN ISO 9001

Contact:

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MRE Contact:

BUDAIL Franck fbu@consept.fr Tel. +33 (0) 251 83 03 00

CREOCEAN

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
Socio-industrial studies	Mechanical and electrome- chanical components Cast parts			
Resource measurements				
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems			
Environmental Impact Studies	Instrumentation - Monitoring Hydraulics - Pneumatics			

Activity:

• Engineering - Design office: project management support, marine environment - permitting - geophysics, oceanography

MRE references:

Engineering office for the marine environment and oceanographic and geophysical studies, having carried out:

- Studies and authorization application for the St-Nazaire offshore wind farm.
- Studies and authorization application for Sem-Rev.
- Studies and authorization application for the connection cable laying for the St-Brieu Ailes Marines offshore wind farm.
- Thematic studies for a floating wind turbine project.
- Study and management of the implementation of an Ocean Thermal Energy system in Polynesia.

Qualifications:

Currently being acquired: OHSAS

Contact:

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MRE Contact:

DONNARD Christophe donnard@creocean.fr Tel. +33 (0) 240 68 54 97

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT			RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction				
				Human Resources - Training	
				Insurance	

Activity:

• Training, skills management, temporary work

Contact:

SPRINGER William william.springer@groupe-crit.com Tel. +33 (0) 617 36 04 93 275, bd Marcel Exapole Bat D 44821 Saint-Herblain

MRE Contact:

BAECHTEL Laurent laurent.baechtel@groupe-crit.com Tel. +33 (0) 620 20 83 44

CTS - CONSULTING & TECHNICAL SUPPORT

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	
Preliminary - Contextual Studies	Composites Metal Construction			
Geotechnical - Geophysical studies	Surface treatment - Coating			
Socio-industrial studies	Mechanical and electrome- chanical components			
Resource measurements	Cast parts HVAC - Air conditioning -			
Environmental Impact	mand-control systems Instrumentation -		Waste treatment	
Studies	Monitoring Hydraulics - Pneumatics			

Activity:

- **Engineering Design office:** project management assistance, structural analysis materials, mechanics, tooling, energy.
- **Logistics:** Factory supply line side delivery

Qualifications:

Acquired: MASE

Currently being acquired: EN ISO 9001

Contact:

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MRE Contact:

TERNYNCK Antoine antoine.ternynck@cts-corporate.com Tel. +33 (0) 761 92 13 71

STUDIES COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT Preliminary - Contextual Studies Geotechnical - Geophysical studies Socio-industrial studies Resource measurements Wind - Wave - Current Measurements Environmental Impact Studies Environmental Impact Studies COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT INSTALLATION AND LOGISTICS MINITENANCE Monitoring - Safety Quality control - Safety - Certification Operations and maintenance Drilling - Seabed preparation Drilling - Seabed preparation Onshore assembly at dock Cast parts Foundations Offshore installations Offshore installations Electrical connection Transport - Handling - Port services High and Low Voltage Electricity

Activity:

- **Sheet metal work:** large and medium-scale sheet metal work, stainless steel, fine sheet metal work, plates, special steels, steel structures
- Manufacturing of lifting equipment: winch, commissioning testing
- Industrial equipment manufacturing: hydraulics, electricity

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS

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MRE Contact:

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DCNS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works		
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation		
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock		
Resource measurements	Cast parts HVAC - Air conditioning -	Foundations		
Wind - Wave -	pressurization	Offshore installations		
Current Measurements	Power electronics - Com- mand-control systems	Electrical connection		
Environmental Impact Studies	Instrumentation - Monitoring	Transport - Handling -		
	Hydraulics - Pneumatics	Port services		
	High and Low			

Activity:

- **Engineering Design office:** project management, project management support, farm engineering
- Integration of industrial equipment: project management
- Industrial equipment manufacturing: project management

Voltage Electricity

MRE references:

- Equipments' development
- Tidal turbines test farm in Paimpol Brehat for EDF
- Tidal turbines Pilot farm in Normandie for EDF EN (Normandie Hydro)
- Tidal turbines test farm in Canada (Bay of Fundy Cape Sharp)
- Nemo Project: OTEC power plant in Martinique with Akuo Energy
- Sea Reed Project with Alstom (floating wind turbines)

Qualifications:

Acquired: EN ISO 3834 - EN ISO 9001 - EN 14001 - OHSAS

Contact:

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MRE Contact:

CHINO Frédéric frederic.chino@dcnsgroup.com Tel. +33 (0) 671 76 92 13

DEMATHIEU BARD

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			Quality control - Safety - Certification	
		Foundations			
		Offshore installations			
	Hydraulics - Pneumatics				

Activity:

- Building Structural work: civil engineering, industrial buildings
- Building Structural work: civil engineering

Oualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS - MASE

Contact:

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MRE Contact:

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FCA FN

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLI
	Composites Metal Construction		Quality control - Safety - Certification	
	Power electronics - Com-			
	mand-control systems Instrumentation -		Waste treatment	

Activity:

• Industrial equipment manufacturing: LV - HV equipment (boxes...), power electronics, command-control systems, electricity

Qualifications:

Acquired: EN ISO 9001

Contact:

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MRE Contact:

GROSJEAN Carine grosjean.c@ecagroup.com Tel. +33 (0) 240 92 39 19

ECO MARINE SERVICES SAS

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Monitoring - Safety		
Geotechnical - Geophysical studies					
			Support Vessels		
		connection Transport - Handling -		waste treatment	
		Port services			

Activity:

• Maritime services: technical assistance, personnel transfer

Contact:

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MRE Contact:

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EMCC GROUPE VINCI

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works		
Geotechnical - Geophysical studies		Drilling - Seabed preparation		
		Onshore assembly at dock		
		Foundations		
		Offshore installations		
		Electrical connection		
Stadics		Transport - Handling - Port services		

Activity:

- **Building structural work:** earthwork, civil engineering structures, dismantling, maritime work
- Maritime services: offshore cable laying, technical assistance, maritime equipment

Qualifications:

Acquired: EN ISO 9001 - EN 14001 Currently being acquired: MASE

Contact:

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MRE Contact:

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FTPO

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels		
	Cast parts	Foundations			
		Offshore installations			
		Electrical connection			
		Transport - Handling -			
		Port services			

Activity:

- **Building structural work:** civil engineering structures, maritime and river work
- Maritime services: charter, offshore cable laying, technical assistance.

MRE references:

Most recent references:

- 200m guay in La Pallice and RoRo in Montoir.
- Delivery of the Market Hub for the SEMREV project mid-September 2015: implementation, 40 meters deep and 15 nautical miles from Croisic, of a Hub, a junction box, connectors and umbilical of 1,300 meters for the future connection to the Floatgen project first French floating wind turbine.
- Work for the "Floatgen" floating wind turbine project. ETPO is positioned on the "second level" for MRE: our heavy nautical equipment is perfectly adapted to secondary operations (sub-station, hub, maintenance cables, burying, anchoring, special sub-aquatic foundations): we have 1000 to 1500 tonne pontoons equipped with 160 to 250 tonnes cranes, and Jack-Ups. Our TETIS subsidiary can take charge of all sub-aquatic assistance services.
- ETPO makes 20% of its turnover in maritime and river works. ETPO Heavy water works are on all three coasts of the region, namely: The North Sea Channel (Le Havre port), the Atlantic (St Nazaire port) and the Mediterranean (subsidiary NEGRI Fos / Marseille port).

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS - MASE

Contact:

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MRE Contact:

LEBASTARD Pierre-Jean pierre.jean.lebastard@etpo.fr Tel. +33 (0) 240 44 27 11

EUROPE TECHNOLOGIES

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Monitoring - Safety	
Geotechnical - Geophysical studies	Surface treatment - Coating	Operations and maintenance	
	Power electronics - Com- mand-control systems		
	Instrumentation - Monitoring		
	Hydraulics - Pneumatics		

Activity:

- **Mechanical machining:** large-dimension machining, large-dimension assembly, very high precision machining, surface treatment
- machining and tooling:
- composite and metal machining.
- tooling design and production.
- machining optimization and programming.
- vibration monitoring and analysis.
- Manufacturer of plastic and composite parts: composites, thermoplastics composite engineering:
- assistance for design, development and industrialization of composite parts.
- production of prototype parts and small batches.
- repair of composite parts.
- composite test laboratory.
- **Special machinery:** automation, manufacturing-transformation process, robotics.
- ultrasonic surface treatment: activated shot peening.
- shot peening of welded joints (finishing of mechanically welded parts).

MRE references:

ROBOT CELL FOR COMPOSITE FINISHING. Machining, drilling, sanding and trimming of parts

Qualifications:

Acquired: EN ISO 9001

Contact:

CHEPPE Patrick contact@europetechnologies.com Tel. +33 (0) 251 70 04 94 2, rue de la Fonderie 44475 Carquefou

MRE Contact:

FURLANI Luc I.furlani@europetechnologies.com Tel. +33 (0) 251 70 04 94

FIMOR SAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLIN
	Composites Metal Construction		Quality control - Safety - Certification	
		Transport - Handling -	maste area ament	
		Port services		

Activity:

• Manufacturer of plastic and composite parts: elastomer

MRE references:

Manufacturer of polyurethane elastomer sheets and customized molded parts. Specially developed to meet extreme constraints, our elastomer stands out by its high resistance to loads of several tonnes and metal/metal contacts and its high shock absorption capability.

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

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MRE Contact:

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FIXATOR

		77.269		
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating	Operations and maintenance		
	Mechanical and electrome- chanical components			
			waste treatment	

Activity:

• Manufacturing of lifting equipment: cradles, hoists MRE references:

Suspended platforms manufacturer, for work on masts.

Qualifications:

Acquired: EN ISO 9001

Contact:

PATRON Bruno info@fixator.com Tel. +33 (0) 241 31 17 00 8, rue du Bois Rinier - BP 10041 49181 Saint Barthélémy d'Anjou Cedex

MRE Contact:

COUTABLE Olivier o.coutable@fixator.com Tel. +33 (0) 241 31 22 13

FLOWSERVE POMPES

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES
Preliminary - Contextual Studies	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification
Geotechnical - Geophysical studies	Surface treatment - Coating	Operations and maintenance	Human Resources - Training
	Mechanical and electrome- chanical components	Support Vessels	Insurance
	Cast parts HVAC - Air conditioning -		
	Instrumentation - Monitoring		waste treatment
	Hydraulics - Pneumatics High and Low		

Activity:

- **Industrial equipment manufacturing:** instrumentation regulation, hydraulics, fire protection
- Engineering Design office: mechanics

MRE references:

Sub-station cooling by SWAC.

Qualifications:

Acquired: EN ISO 9001 - MASE Currently being acquired: EN 14001

Contact:

GELIN Stéphane sgelin@flowserve.com Tel. +33 (0) 243 40 57 64 13, rue Maurice Trintignant 72234 Arnage

MRE Contact:

HEISSAT Didier dheissat@flowserve.com Tel. +33 (0) 240 49 40 24

FMGC

11100						
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT			RELATED SERVICES	DISMANTLING	
Preliminary - Contextual Studies	Composites Metal Construction			Quality control - Safety - Certification		
	Mechanical and electrome- chanical components					
	Cast parts HVAC - Air conditioning -					

Activity:

- Sheet metal work: foundry
- Engineering Design office: manufacturing transformation processes MRE references:

FMGC is a foundry that produces cast iron suitable for ballast solutions for underwater cables and machines.

FMGC designs, develops and manufactures its ballast solutions. Sabella D10, IBOCS, Clump weight.

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

THUET Gérard gerard.thuet@fmgc.net Tel. +33 (0) 240 28 50 73 ZI Hochepie 44110 Soudan

MRE Contact:

LEROUX Benoit benoit.leroux@fmgc.net Tel. +33 (0) 785 43 61 13

GENERAL CABLE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
	Mechanical and electrome- chanical components			
		Electrical connection		
		Transport - Handling -		
	High and Low Voltage Electricity			

Activity:

- Industrial equipment manufacturing: LV HV equipment (boxes...), HVAC, command-control systems, electricity
- Manufacturer of plastic and composite parts: thermoplastic, elastomer

MRE references:

Tidal power test site at Paimpol Bréhat (export cable). SEMREV experimentation site (export cable).

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS

Contact:

BLANOT Marie-Thérèse elanoue@generalcable-fr.com Tel. +33 (0) 160 57 30 00 1, rue Jacques Brel 44802 Saint-Herblain

MRE Contact:

THIZON Emmanuel ethizon@generalcable-fr.com Tel. +33 (0) 160 54 30 00

GEPS TECHNO

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
	Cast parts			
Resource measurements	HVAC - Air conditioning - pressurization			
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems			
	Instrumentation - Monitoring			
	Hydraulics - Pneumatics			

Activity:

- Engineering Design office: project management support, energy, monitoring
- **Production of industrial equipment :** instrumentation regulation, command control, autonomous energy supply

MRE references:

PMH Project (Wave Energy Pilot Module). PH4S (4 source Hybrid Pilot). CAPTIVEN.

Contact:

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MRE Contact:

LONGEROCHE Jean-luc jean-luc.longeroche@geps-techno.com Tel. +33 (0) 240 45 97 74

GESTAL

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels	Insurance	
Resource measurements	Cast parts HVAC - Air conditioning - pressurization	Foundations Offshore installations		Bank - Financing	
	Power electronics - Com- mand-control systems	Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring	Transport - Handling -			
	Hydraulics - Pneumatics High and Low Voltage Electricity				

Activity:

• Mounting - Assembly: electrical cabling - electronics, mechanics, locksmith

MRE references:

Collaboration with STX and ALSTOM.

Qualifications:

Acquired: EN ISO 9001

Currently being acquired: EN ISO 3834 - EN 14001

Contact:

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MRE Contact:

RICHEVILAIN Pascal parichevilain@gestal-fr.com Tel. +33 (0) 240 01 28 54

GRAND PORT MARITIME DE NANTES SAINT-NAZAIRE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
		Drilling - Seabed preparation		
		Onshore assembly at dock		
		connection	Waste treatment	
		Transport - Handling - Port services		

Activity

• Maritime services: major maritime port

MRE references:

ALSTOM factory installation. Creation of St-Nazaire logistics hub. Reception of Haliade 150 bottom-mounted wind turbine prototype. Shipping site for floating wind turbines.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - MASE

Contact:

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MRE Contact:

GERARD Maryse m.gerard@nantes.port.fr Tel. +33 (0) 240 44 71 70

GROLLEAU SAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
	Mechanical and electrome- chanical components Cast parts			
	Power electronics - Com- mand-control systems			
Environmental Impact Studies	Instrumentation - Monitoring Hydraulics - Pneumatics			
	High and Low Voltage Electricity			

Activity:

- Industrial equipment integration: LV HV equipment (boxes...)
- Sheet metal work: stainless steel, fine sheet metal work
- Engineering Design office: energy

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

MARBACH Laurent laurent.marbach@grolleau.fr Tel. +33 (0) 241 75 88 22 Rue du Moulin de la Buie - 49310 Montilliers

MRE Contact:

MENORET Yoann yoann.menoret@grolleau.fr Tel. +33 (0) 241 75 96 34

GROUPE LHD

ditool	- CITO		11/1/10	
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Monitoring - Safety	
			Support Vessels	
		Offshore installations		
		Electrical connection		
		Transport - Handling -		
		Port services		

Activity:

• Maritime Services: technical assistance for construction works at sea, ship chartering, ship services (relief crew, storage and refuelling)

MRE references:

- Installation and and removal of oceanographic equipment for SEM-REV and the future 2 iles wind farm.
- -Provision of water resources for geophysical operations for the Guérande future wind farm.
- Crew relief services for projects on the SEM-REV site.

Contact:

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MRE Contact:

GLOOR Philippe p.gloor@lamanage.fr Tel. +33 (0) 607 65 33 21

HUGUET INGENIERIE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
	Power electronics - Com- mand-control systems	Electrical		
	Instrumentation - Monitoring	connection Transport - Handling -	waste treatment	
	Hydraulics - Pneumatics High and Low			

Activity:

• **Special machinery:** automation, manufacturing-transformation process, robotics

Voltage Electricity

- Integration of industrial equipment: automation, instrumentation regulation, LV HV equipment (boxes,...), power electronics, command-control systems, electricity
- Equipment maintenance: electromechanical, electrotechnical

MRE references:

Automated line for shot peening, plating, painting of slewing rings. Studies and turnkey production of customized production equipment: robotic equipment, special machines, automation, transformation of machine tools for machining metals and composites.

Qualifications:

Currently being acquired: EN ISO 9001

Contact:

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MRE Contact:

HUGUET Philippe philippe.huguet@groupe-huguet.fr Tel. +33 (0) 251 29 10 63

HYDRO	CEAN				
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works		Quality control - Safety - Certification	
Geotechnical - Geophysical studies			Operations and maintenance		
		Onshore assembly at dock	Support Vessels		
Resource measuremen		Foundations Offshore installations			
Wind - Wave - Current Measurement	mand-control systems	Electrical connection			
Environmental Impac Studies	Instrumentation - Monitoring Hydraulics - Pneumatics	Transport - Handling - Port services			

Activity:

• **Engineering - Design office:** structural - materials calculations, energy, digital simulation

MRE references:

World leader in digital simulations applied to the maritime domain

Contact:

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MRE Contact:

BERRY Luke luke.berry@hydrocean.fr Tel. +33 (0) 240 20 60 84

HYDROFLUID TECHNOLOGIES

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANT
	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification	
		Operations and maintenance		
			waste treatment	
	Hydraulics - Pneumatics High and Low			

Activity:

- **Industrial equipment manufacturing:** instrumentation regulation, power electronics, command-control systems, hydraulics, electricity
- **Engineering Design office:** structural materials calculations, mechanics, tooling, hydraulic studies
- Equipment maintenance: hydraulic maintenance

MRE references:

Studies, design and manufacturing of hydraulic equipment for generator handling, MRE activity.

Qualifications:

Acquired: EN ISO 9001

Contact:

GUILLAUME Jean-Michel jmguillaume@hf-t.fr Tel. +33 (0) 297 76 10 30 Rue de la Baudinière - ZAC de la Baudinière 44470 Thouaré-sur-Loire

MRE Contact:

DELAUNAY Frédéric fdelaunay@hf-t.fr Tel. +33 (0) 619 17 02 37

IDEA LOGISTIQUE

			7/1/460		
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works		Quality control - Safety - Certification	
	Surface treatment - Coating	Drilling - Seabed preparation			
		Onshore assembly at dock			
Environmental Impact Studies		Transport - Handling - Port services			
		Port services			

Activity:

• **Logistics:** advanced supplier store, line side supply, production delegation, outsourcing management, inventory management, kitting and order preparation, industrial packaging, exceptional transport of heavy and oversize packages, specific supply chain control

MRE references:

IDEA Logistics ensures logistics operations for ALSTOM, DCNS, General Electric and other players in wind / tidal energy

Qualifications:

Acquired: ISO 9001 - EN 9100 - OHSAS - MASE

Contact:

DEROUAULT Nicolas contact@idea-logistique.com Tel. +33 (0) 240 90 70 25 ZAC de Cadrean 44550 Montoir de Bretagne

MRE Contact:

VALMALLE Cédric cvalmalle@idea-logistique.com Tel. +33 (0) 240 90 70 25

INNOSEA

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies				
Socio-industrial studies				
Studies				
Resource measurements				
Wind - Wave - Current Measurements				

Activity:

• **Engineering - Design office:** project management, project management support, structural - materials calculations, energy

MRE references:

offshore wind turbines:

- Engineering and design and foundation dimensioning studies for wind turbines (Jacket, GBF, Monopile Hybrids).
- Engineering for electrical connections and installation and protection operations.
- Underwater cable protection solutions.
- Transport and installation engineering, logistics studies.
- Package Management.
- Recent wind farms: Poland, Belwind 2, Baltic 2, Navitus Bay, Rentel, Arkona,
- Wind farms in France: lle d'Yeu-Noirmoutier, Saint-Nazaire, Saint-Brieuc, Courseulles, Fécamp, le Tréport.

Floating wind turbines:

- Market and technological positioning studies.
- Float engineering.
- Technical studies and concept optimization, experimentation in scale model basin, structure dimensioning.

Tidal power:

- Projects in France: Raz Blanchard, Fromveur, Paimpol-Bréhat.
- Sub-structure, foundation engineering.
- Installation engineering.
- Engineering for the connection of pilot farms.
- Underwater cable protection solutions.

Wave energy:

- Technical studies, capacity optimization, experimentation in scale model basin, structure dimensioning, preliminary project prototypes, detail studies, costing studies, development consulting.
- Technology, financial support: more than 10 concepts.

Contact:

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MRE Contact:

MOUSLIM Hakim hakim.mouslim@innosea.fr Tel. +33 (0) 253 35 50 90

IEFMAG

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLIN
	Composites Metal Construction		Quality control - Safety - Certification	
	Surface treatment - Coating			
	Mechanical and electrome- chanical components			

Activity:

- **Sheet metal work:** medium and large-scale sheet metal work, plates, mechanical welding DELESTREE Emmanuel memanuel.delestree@je
- **Mechanical machining:** large-dimension machining, large-dimension assembly **Qualifications:**

Acquired: EN ISO 9001

Contact:

DELESTREE Emmanuel emmanuel.delestree@jefmag.fr FOUCAULT Michaël michael.foucault@jefmag.fr Tél. +33 (0) 251 42 86 72 41, bd des Marchandises - 85260 L'Herbergement

MRE Contact:

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KAEFER WANNER

			2000		
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			Quality control - Safety - Certification	
		Onshore assembly at dock			

Activity:

- Integration of industrial equipment: insulation, interiors, relocations MRE references:
- transformer platforms, thermal insulation, fire protection and interior installation (partitions, furniture).
- Dong Energy Platform at STX: furniture of living area; networks insulation.

Contact:

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MRE Contact:

HURIET Bruno bruno.huriet@kaefer.com Tel. +33 (0) 611 01 68 96

KASADENN

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
			Human Resources - Training	
			Insurance	

Activity:

• Engineering - Design office: project management and quality **Qualifications**:

Acquired: EN ISO 9001

Contact:

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MRE Contact:

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KEOPS AUTOMATION

Preliminary - Contextual Studies Geotechnical - Geophysical studies Socio-industrial studies Socio-industrial studies FOR MRE EQUIPMENT AND COGISTICS FIAINTENANCE Monitoring - Safety Safety - Certification Operations and maintenance Training Mechanical and electrome-chanical components Cast parts Foundations Final Tenance Operations - Safety Surface treatment - Coating Operations and maintenance Training Insurance				
Contextual Studies Geotechnical - Geophysical studies Mechanical and electrome-chanical components Studies Cast parts HVAC - Air conditioning - pressurization Wind - Wave - Current Measurements Environmental Impact Studies Metal Construction Civil works Operations and maintenance Drilling - Seabed preparation Onshore assembly at dock Support Vessels Insurance Foundations Offshore installations Electrical connection Transport - Handling - Transport - Handling -	STUDIES	SUB-ASSEMBLIES		DISMANTLI
Geophysical studies Socio-industrial studies Resource measurements Wind - Wave - Current Measurements Environmental Impact Studies Coating preparation Mechanical and electrome-chanical components Cast parts Foundations Offshore installations Coffshore installations Electrical connection Transport - Handling - Transport - Handling -	Preliminary - Contextual Studies		Monitoring - Safety	
Socio-industrial studies Resource measurements Wind - Wave - Current Measurements Environmental Impact Studies Mechanical and electrome-chanical and electrome-chanical components Onshore assembly at dock Foundations Offshore installations Electrical connection Transport - Handling - Transport - Handling -				
Cast parts Resource measurements Wind - Wave - Current Measurements Environmental Impact Studies Cast parts Foundations Offshore installations Electrical connection Transport - Handling - Transport - Handling -				
Wind - Wave - Current Measurements Power electronics - Command-control systems Environmental Impact Studies Environmental Impact Transport - Handling -				
Environmental Impact Studies mand-control systems connection Instrumentation - Monitoring Transport - Handling -				
Studies Monitoring Transport - Handling -		mand-control systems		
		Monitoring		

Activity:

• Integration of industrial equipment: automation, instrumentation - regulation, monitoring and control

MRE references:

- R & D for HYPERWIND project in partnership with EADS, AREVA, Meteodyn, Nantes University and the Ecole des Mines de Nantes.

Qualifications:

Acquired: EN ISO 9001 - MASE

Contact:

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MRE Contact:

FOLLUT Dominique d.follut@keops-group.com Tel. +33 (0) 228 23 25 55

LATECOERE SERVICES

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
	Surface treatment - Coating			

Activity:

- Industrial equipment integration: project management
- Tool-maker: molds, small tooling, large tooling, assembly line
- Engineering Design office: project management, structural materials calculations, manufacturing transformation processes, mechanics, tooling **Qualifications**:

Acquired: EN ISO 9001 - EN 14001

Contact:

LONGUET Patrick patrick.longuet@latecoere-services.com Tel. +33 (0) 562 18 81 31 5, rue Charles Lindbergh 44340 Bouguenais

MRE Contact:

LEMEUNIER Jean jean.lemeunier@latecoere-services.com Tel. +33 (0) 675 08 34 19

LE PRATIQUE

		200		
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
Socio-industrial studies	Mechanical and electrome- chanical components			
Resource measurements	Cast parts HVAC - Air conditioning -			
Wind - Wave - Current Measurements	pressurization Power electronics - Com- mand-control systems			
Environmental Impact Studies	Instrumentation - Monitoring		waste treatment	
	Hydraulics - Pneumatics			

Activity:

- Mechanical machining: very high precision machining
- Engineering Design office: mechanics, tooling
- Mounting Assembly: mechanics

Qualifications:

Currently being acquired: EN ISO 9001

Contact:

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MRE Contact:

SARAZIN Samuel s.sarazin@lepratique.fr Tel. +33 (0) 243 27 48 20

LEMER FONDERIE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
	Mechanical and electrome- chanical components	Onshore assembly at dock		
	Cast parts HVAC - Air conditioning -	Foundations		
			waste treatment	
	Hydraulics - Pneumatics			

Activity:

• Sheet metal work: foundry

• Mechanical machining: classical machining

MRE references:

- Lead casting (naval, offshore, underwater construction): ballast.
- Machining of lead ballast, ballast bulb, counterweights.

Qualifications:

Acquired: EN ISO 9001

Contact:

LECOLE Laurent I.lecole@fonderie-lemer.com Tel. +33 (0) 674 07 91 67 3, rue de l'Europe - 44470 Carquefou

MRE Contact:

LECOLE Laurent I.lecole@fonderie-lemer.com Tel. +33 (0) 674 07 91 67

LEROUX & LOTZ TECHNOLOGIES

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLIN
Preliminary - Contextual Studies	Composites Metal Construction			
	Surface treatment - Coating			
	Mechanical and electrome- chanical components			
			waste treatilient	

Activity:

- **Special machinery:** manufacturing transformation process
- Engineering Design office: structural materials calculations, manufacturing - transformation process, mechanics, tooling, energy
- **Mounting Assembly:** mechanics, mounting of complete assemblies

MRE references:

- Offshore and onshore handling equipment.
- Tooling for specific offshore installations.
- Subsea equipment.
- Test beds for offshore tidal power and wind turbine sectors.
- Heavy handling tooling for offshore wind turbines.

Qualifications:

- Acquired: EN ISO 9001
- Currently being acquired: MASE

Contact:

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MRE Contact:

DERVAUX Laurent laurent.dervaux@lerouxlotz.com Tel. +33 (0) 240 95 96 62

IGM

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
Geotechnical - Geophysical studies				
Socio-industrial studies				
Resource measurements				

Activity:

• **Engineering** - **Design office:** project management, project management support

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

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MRE Contact:

MICHEL Stéphane stephane.michel@lgm.fr Tel. +33 (0) 285 67 20 06

MAGI LEVAGE

1 1/101 22 1/102					
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction				
		connection Transport - Handling -		waste treatilient	
		Port services			

Activity:

• Manufacturing of lifting equipment: pneumatic, cradles, hoists, commissioning – tests

Qualifications:

Acquired: EN ISO 9001

Contact:

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MRE Contact:

BEUSCART Christophe cbeuscart@cbrlevage.fr Tel. +33 (0) 328 76 93 20

MECA COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT OPERATIONS / MAINTENANCE **RELATED STUDIES DISMANTLING AND LOGISTICS SERVICES** Composites Preliminary -Contextual Studies Quality control -Safety - Certification Geotechnical -Geophysical studies **Training** Mechanical and electrome-chanical components Socio-industrial studies Instrumentation -Monitoring

Activity:

- Engineering Design office: structural materials calculations, mechanics, R&D MRE references:
- Strong skills in composite materials including manufacturing process knowledge.

Hydraulics - Pneumatics

- Thorough knowledge of certification codes (DNV-GL and BV rules).
- SABELLA: blades.
- DCNS ocean thermal energy.
- Structure feasibility study SeaRev.
- Tooling studies for MRE components.

Qualifications:

Currently being acquired: EN ISO 9001 - EN 14001

Contact:

DURAND Samuel samuel.durand@calcul-meca.fr Tel. +33 (0) 251 83 96 45 20, rue de l'héronnière 44000 Nantes

MRE Contact:

DURAND Samuel samuel.durand@calcul-meca.fr Tel. +33 (0) 251 83 96 45

MECABOR						
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT			RELATED SERVICES	DISMANTLING	
Preliminary - Contextual Studies	Composites Metal Construction			Quality control - Safety - Certification		
	Instrumentation - Monitoring					
	Hydraulics - Pneumatics High and Low Voltage Electricity					

Activity:

• Mechanical machining: very high precision machining

MRE references:

specialized in hydraulic manifolds.

Qualifications:

Acquired: EN ISO 9001

Contact:

LONG Michel michel.long@mecabor.com Tel. +33 (0) 619 76 03 45 24, rue |oseph Cugnot - 85700 Pouzauges

MRE Contact:

LONG Michel michel.long@mecabor.com Tel. +33 (0) 619 76 03 45

MECALIA INGENIERIE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification
Geotechnical - Geophysical studies	Surface treatment - Coating		Human Resources - Training
	Mechanical and electrome- chanical components		
			Waste treatment

Activity:

• **Engineering - Design office:** structural - materials calculations, mechanics, tooling - relocation studies

Qualifications:

Currently being acquired: EN ISO 9001

Contact:

CHARRIER Jean-Claude jean-claude.charrier@mecalia.fr Tel. +33 (0) 251 80 73 12 ZI de la Croix Rouge - 1 bis, rue de l'Europe 44260 Malville

MRE Contact:

NEDERLANDT Christophe christophe.nederlandt@mecalia.fr Tel. +33 (0) 251 80 73 12

MECANIQUE DE PRECISION CUGANDAISE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Operations and maintenance		
Socio-industrial studies	Mechanical and electrome- chanical components	Support Vessels		
Resource measurements				
Wind - Wave - Current Measurements				
Environmental Impact Studies			Waste treatment	

Activity:

• **Mechanical machining:** very high precision machining, surface treatment **Qualifications:**

Currently being acquired: EN ISO 9001 - EN 14001

Contact:

QUELLIEN Jean-Pierre mpc.cugand@orange.fr Tel. +33 (0) 683 45 07 26 ZA Du Mortier Est 85610 Cugand

MRE Contact:

QUELLIEN Jean-pierre mpc.cugand@orange.fr Tel. +33 (0) 683 45 07 26

MOJO MARITIME FRANCE SAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels		
	Cast parts	Foundations			
Resource measurements		Offshore installations			
Wind - Wave - Current Measurements		Electrical connection			
	Instrumentation - Monitoring	Transport - Handling -			
	Hydraulics - Pneumatics	Port services			

Activity:

- Maritime services: charter, offshore cable laying, technical assistance, planning and project management
- **Engineering Design office:** project management, project management support, structural materials calculations, mechanics, energy

MRE references:

Mojo Maritime has carried out numerous installations for tidal and wave power technology developers, as well as offshore installations in the oil and offshore wind turbine sectors.

Services offered:

- Project planning and management.
- Heavy lifting operations.
- Underwater operations.
- Marine construction.
- QHSE management.

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

PARKINSON Richard info@mojomaritime.fr Tel. +33 (0) 240 99 00 41 1, rue Du Guesclin 44019 Nantes

MRE Contact:

MORANDEAU Maxime maxime.morandeau@mojomaritime.fr Tel. +33 (0) 648 43 14 32

MUEHLHAN

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		
	Composites Metal Construction		Quality control - Safety - Certification
	Surface treatment - Coating		
	Hydraulics - Pneumatics		

Activity:

• **Coating - Surface treatment:** surface treatments, paint on composite, technical coating - special coatings, anti-corrosion

MRE references:

- MUEHLHAN is the leader in coating on onshore and offshore wind turbine masts in Denmark and Europe.
- Coating: ALSTOM Haliade prototype jacket.
- Offshore electrical sub-station for DONG Energy.
- Girassol HVAC module for TOTAL / SAIPEM.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS - MASE

Contact:

GUIENNE Christian guienne@muehlhan.com Tel. +33 (0) 675 29 20 16 2, rue de la Forme Joubert 44600 Saint-Nazaire

MRE Contact:

GUIENNE Christian guienne@muehlhan.com Tel. +33 (0) 675 29 20 16

NANFOURMA

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	
	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	
		Onshore assembly at dock	Support Vessels	
	Power electronics - Com- mand-control systems			
	Instrumentation - Monitoring	Transport - Handling -		
	Hydraulics - Pneumatics High and Low	Port services		

Activity:

- Industrial equipment manufacturing: hydraulics
- Equipment maintenance: hydraulics
- Engineering Design office: hydraulics

expertise and ship check on hydraulic installations (onshore, on platform, on vessel)

MRE references:

- Official PARKER DENISON integrator and official PARKER "Condition Monitoring" dealer
- Intervention on very high pressure hydraulic generator used for the assembly of the ALSTOM Haliade 150.
- Hydraulic test bench for wave energy system (Client DCNS).
- Hydraulic generator for wave energy system (SIREHNA).

Contact:

MOUËZY Jean-Luc nanfourma@nanfourma.fr Tel. +33 (0) 240 63 09 49 ZAC de la Lorie - 22, rue Bobby Sands 44813 Saint-Herblain

MRE Contact:

CHUPIN Cédric cchupin@nanfourma.fr Tel. +33 (0) 786 52 31 36

NAULEAU

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
	Mechanical and electrome- chanical components			
			waste accument	

Activity:

- **Special machinery:** manufacturing transformation process
- **Production of industrial equipment:** mechanical welding, machining, laser cutting.
- Engineering Design office: project management, project management support, structural materials calculations, manufacturing transformation processes, mechanics, tooling

MRE references:

Production of ferry for STX.

Contact:

NAULEAU Bernard bernard.nauleau@nauleau.fr Tel. +33 (0) 251 41 83 89 Zone artisanale la Vrignais 85140 Chauché

MRE Contact:

NAULEAU Bernard bernard.nauleau@nauleau.fr Tel. +33 (0) 251 41 83 89

NATURAL POWER

			1000	DOMESTIC CONTROL OF	
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock		Insurance	
Resource measurements		Foundations Offshore installations		Bank - Financing	
Wind - Wave - Current Measurements	pressurization Power electronics - Com- mand-control systems	Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring			waste treatment	
	Hydraulics - Pneumatics High and Low Voltage Electricity	Transport - Handling - Port services			

Activity:

- Engineering Design office: project management assistance, energy, technical audits
- Maritime Services: technical assistance

MRE references:

- MRE France: Development Assistance, Expertise in wind energy (AO1-2).
- Technical Audits (wind, tidal energy).
- Ornithological expertise, impact studies.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS

Contact:

Thierry Ripoche thierryr@naturalpower.com Tel. +33 (0) 240 99 00 24 1, rue du Guesclin 44000 Nantes

MRE Contact:

Grégoire Durand gregoired@naturalpower.com Tel. +33 (0) 388 14 16 00

NAVALU

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
		Support Vessels		

Activity:

• Shipyard: aluminium, superstructures

MRE references:

Construction of a catamaran dedicated to the maintenance of offshore wind farms: 4 engines, 4 shaft lines, 100% French construction.

Contact:

MINGUET Bernard navalu@orange.fr Tel. +33 (0) 251 49 06 49 Port du Bec 85230 Bouin

MRE Contact:

DUJOUR Camille navalu@orange.fr Tel. +33 (0) 786 12 54 12

NEREIS ENVIRONNEMENT

			TOTAL STREET
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES
	Composites Metal Construction		Quality control - Safety - Certification
Current Measurements	mand-control systems		
Environmental Impact Studies	Instrumentation - Monitoring		
	Hydraulics - Pneumatics		

Activity:

• Engineering - Design office: project management support MRE references:

Studies of impact of bottom-mounted and floating wind farms on the fishery resource.

Contact:

HELLOCO Loïc I.helloco@nereisenvironnement.com Tel. +33 (0) 981 36 23 80 2, rue Robert Schuman 44400 Rezé

MRE Contact:

PERSOHN Cécile c.persohn@nereisenvironnement.com Tel. +33 (0) 981 36 23 80

OCEA S.A.

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
	Composites Metal Construction		Quality control - Safety - Certification	
		Support Vessels		
			mapic a calification	

Activity:

• Shipyard: aluminum, superstructures

MRE references:

- Today, OCEA S.A. is one of the pioneers in aluminum shipbuilding and a major industrial aluminum producer.
- OCEA S.A. offers a full and competitive range in shipbuilding with performance specifically tailored to vessel use.

Qualifications:

Acquired: EN ISO 9001 Currently being acquired: EN 14001

Contact:

JOASSARD Roland commercial@ocea.fr Tel. +33 (0) 251 21 05 90 Quai de la Cabaude 85100 Les Sables d'Olonne

MRE Contact:

EPAUD Fabrice fepaud@ocea.fr Tel. +33 (0) 251 21 05 90

OYA VENDÉE HÉLICOPTÈRES

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance		
		Onshore assembly at dock			
Resource measurements	Cast parts HVAC - Air conditioning - pressurization	Foundations Offshore installations			
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems	Electrical connection			
		Transport - Handling -			
		Port services			

Activity:

• Logistics provider: air transport

MRE references:

Installation and removal of Lidar and aerial views.

Contact:

BOLTOUKHINE Nicolas nicolas.boltoukhine@oya-helico.com Tel. +33 (0) 607 72 13 05 5, rue Gabriel Guist'hau 85350 Port-Joinville-lle d'Yeu

MRE Contact:

GRESILLON-BERTRAND Antoine antoine.gresillon@oya-helico.com Tel. +33 (0) 677 06 06 16

PFCOT

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation		
		Onshore assembly at dock		
		Transport - Handling -		
		Port services		

Activity:

- **Sheet metal work:** medium and large boilermaking, stainless steel, precision sheet metalwork, thick sheet metal, structural steel, steel joinery
- Manufacturing of lifting equipment: cradles, commissioning tests, spreaders

Contact:

BLANDIN Matthieu info@pecot.fr Tel. +33 (0) 240 66 13 19 Bd des apprentis 44550 Montoir de Bretagne

MRE Contact:

BLANDIN Matthieu info@pecot.fr Tel. +33 (0) 240 66 13 19

PILGRIM TECHNOLOGY

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES
	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification
	Surface treatment - Coating	Operations and maintenance	Human Resources - Training
	mand-control systems Instrumentation -		
	Monitoring		

Activity:

- **Special machinery:** robotics
- Engineering Design office: specific development

MRE references:

We offer a drone to inspect wind turbine blades as an onshore and offshore maintenance decision-making tool.

Contact:

HAUTE Anne-Marie amh@pilgrim-technology.com Tel. +33 (0) 240 69 85 41 3B Résidence de la Chevalerie 44470 Thouaré-sur-Loire

MRE Contact:

HAUTE Anne-marie contact@pilgrim-technology.com Tel. +33 (0) 240 69 85 41

PRIMEGPS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance		
Socio-industrial studies	Mechanical and electrome- chanical components Cast parts	Onshore assembly at dock			
Resource measurements		Foundations Offshore installations			
	Power electronics - Com- mand-control systems	Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring	Transport - Handling -			

Activity:

• Maritime services : offshore cable laying

Contact:

HAMELIN Olivier olivier.hamelin@primegps.fr Tél. +33 (0) 240 57 37 20 Parc Maison Neuve - 6, rue Marcel Dassault 44980 Sainte-Luce sur Loire

Contact EMR:

HAMELIN Olivier olivier.hamelin@primegps.fr Tél. +33 (0) 240 57 37 20

PRINCIPIA SAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works			
Geotechnical - Geophysical studies		Drilling - Seabed preparation	Operations and maintenance		
	chanical components	Onshore assembly at dock	Support Vessels		
Resource measurements	Cast parts HVAC - Air conditioning - pressurization	Foundations Offshore installations			
Wind - Wave - Current Measurements Environmental Impact	Power electronics - Com- mand-control systems Instrumentation -	Electrical connection			
Studies	Monitoring Hydraulics - Pneumatics High and Low				

Activity:

• Engineering - Design office: project management support, structural - materials calculations, mechanics, naval architecture and MRE support vessel design, transport engineering and installation, digital simulation (structure, hydrodynamics, cfd, installation), development and sale of engineering software (deeplines wt, isymost/nso), foundation design, anchoring. references: DCNS, EDF EN, DONG, ALSTOM, SHL, ACCIONA, A2SEA, FRED OLSEN FOUNDATION, CT OFFSHORE.

Voltage Electricity

MRE references:

- Engineering, foundations for bottom-mounted wind turbines, offshore wind turbine floats.
- Ocean thermal energy, cable stability, service vessel.
- Development of an aero/hydro coupling software package.

Qualifications:

Acquired: EN ISO 9001

Contact:

VALLETEAU DE MOULLIAC Benoît benoit.demoulliac@principia.fr Tel. +33 (0) 442 98 11 80 1, rue de la Noë 44300 Nantes

MRE Contact:

LE BUHAN Philippe philippe.lebuhan@principia.fr Tel. +33 (0) 614 47 63 31

PSM

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation		
	Mechanical and electrome- chanical components	Onshore assembly at dock		
	Hydraulics - Pneumatics			
	High and Low Voltage Electricity			

Activity:

- **Mounting Assembly:** hydraulics, pneumatics, electrical electronic cabling, mechanics
- Integration of industrial equipment: LV HV equipment (boxes,...), hydraulics, electricity
- **Equipment maintenance**: electromechanics

MRE references:

As part of a group, we are involved in the installation of the HUB terminal at the SEM-REV site, to connect ocean thermal energy demonstrators.

Qualifications:

Currently being acquired: EN ISO 9001 - MASE

Contact:

LE MINTEC Véronique v.lepennedu@psm-assemblage.fr Tel. +33 (0) 240 11 61 94 15, rue Thomas Edison 44600 Saint-Nazaire

MRE Contact:

LE MINTEC Véronique v.lepennedu@psm-assemblage.fr Tel. +33 (0) 611 15 53 40

QUASAR CONCEPT

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
Geotechnical - Geophysical studies	Surface treatment - Coating			
Resource measurements	HVAC - Air conditioning - pressurization			
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems			
Environmental Impact Studies				
	Hydraulics - Pneumatics High and Low Voltage Electricity			

Activity:

- **Industrial equipment manufacturing:** automation, instrumentation regulation,
- power electronics, command-control systems
- Engineering Design office: tooling, energy, test and measurement bench

 MRE references:

Design and production of control equipment and UPS inverter tests.

Contact:

CURIEN Bruno bruno.curien@quasar-concept.fr Tel. +33 (0) 241 34 35 11 4, rue des frères Montgolfier 49240 Avrillé

MRE Contact:

CRAIPEAU Hervé herve.craipeau@quasar-concept.fr Tel. +33 (0) 241 34 35 11

QOS ENERGY

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMA
Preliminary - Contextual Studies	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Operations and maintenance		
		Support Vessels		
Resource measurements	HVAC - Air conditioning - pressurization			
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems			
	Instrumentation - Monitoring			
	Hydraulics - Pneumatics			

Activity:

- **Equipment maintenance:** real-time communication, electromechanics, energy monitoring
- **Engineering Design office:** project management assistance, energy, energy monitoring

Contact:

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MRE Contact:

BELLET Jean-Yves jybellet@qosenergy.com Tel. +33 (0) 251 89 46 00

ROLLIX

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating	Operations and maintenance		
	Mechanical and electrome- chanical components	Support Vessels		

Activity:

- **Mechanical machining:** large-dimension machining, large-dimension assembly, very high precision machining, surface treatment
- Engineering Design office: structural materials calculations, mechanics

MRE references:

World MRE leader for the design and supply of slewing rings.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS

Contact:

JACQUEMONT Éric info@rollix.com Tel. +33 (0) 251 45 94 94 Rue Saint-Éloi - 85530 La Bruffière

MRE Contact:

CHARRON Nicolas info@rollix.com Tel. +33 (0) 251 45 94 94

S2IB

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	ĺ
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	Human Resources - Training	
	Mechanical and electrome- chanical components	Onshore assembly at dock			
	Cast parts HVAC - Air conditioning -				
	pressurization				
Current Measurements	Power electronics - Com- mand-control systems	Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring				
	Hydraulics - Pneumatics	Transport - Handling - Port services			
	High and Low Voltage Electricity				

Activity:

• **Engineering - Design office:** project management, project management assistance, structural analysis - materials, energy

MRE references:

63kV substation works contractor for EDF EN wind farm. Reference at EDF EN.

Qualifications:

Acquired: EN ISO 9001 - MASE

Contact:

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MRE Contact:

LEBREIL Dominique dominique.lebreil@s2ib44.com Tel. +33 (0) 633 89 63 77

SACMO

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
Geotechnical - Geophysical studies	Surface treatment - Coating			
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock		
Resource measurements	Cast parts HVAC - Air conditioning - pressurization			
		Transport - Handling -		
		Port services		

Activity:

- **Mechanical machining:** large-dimension machining, large-dimension assembly, very high precision machining
- Engineering Design office: project management, project management support, structural materials calculations, manufacturing transformation processes, mechanics, tooling
- **Sheet metal work:** large and medium-scale sheet metal work, stainless steel, plates, special steels

MRE references:

Qualifications:

Acquired: EN ISO 9001 Currently being acquired: EN 14001

Contact:

BAUDU Isabelle isabelle.baudu@sacmo.fr Tel. +33 (0) 240 38 38 28 ZA la Tour à Plomb 44220 Couëron

MRE Contact:

BEAULIEU Mathieu mathieu.beaulieu@sacmo.fr Tel. +33 (0) 240 38 38 28

SDEI OUEST

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
	Surface treatment - Coating			
	Mechanical and electrome- chanical components			
	Cast parts HVAC - Air conditioning - pressurization			
			waste a calment	
	Hydraulics - Pneumatics			

Activity:

• **Engineering - Design office:** project management, structural - materials calculations, mechanics

MRE references:

Supplier for Watt and Sea tidal power. Supplier Defontaine Rollix.

Qualifications:

Currently being acquired: EN ISO 9001

Contact:

FRADET Bruno bruno.fradet@sdeiouest.fr Tel. +33 (0) 684 33 99 05 ZI Appentière 49280 Mazières en Mauges

MRE Contact:

FETIVEAU Christian christian.fetiveau@sdeiouest.fr Tel. +33 (0) 646 49 38 22

SDI SERVICES

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANT
	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification	
	Surface treatment - Coating	Operations and maintenance		
	Mechanical and electrome- chanical components	Support Vessels		
	Cast parts HVAC - Air conditioning -			
			waste treatment	

Activity:

- **Coating Surface treatment:** surface treatment, composite painting, technical paints Special coatings, anti corrosion
- **Equipment maintenance:** electromechanics, burners
- **Engineering Design office:** prime contractor, project management assistance, manufacturing process transformation, energy

Contact:

HOCHART Pascal pascal.hochart@sdi-services.fr Tel. +33 (0) 618 73 31 30 ZI des Maltières – Route de Mézangers 53600 Evron

MRE Contact:

HOCHART Pascal pascal.hochart@sdi-services.fr Tel. +33 (0) 618 73 31 30

SFRS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLIN
	Composites Metal Construction		Quality control - Safety - Certification	
	Surface treatment - Coating			

Activity:

• **Sheet metal work:** stainless steel, fine sheet metal work, plates, special steels, steel structures, steel joinery

Contact:

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MRE Contact:

FONTENEAU Stéphane sebs44@wanadoo.fr Tel. +33 (0) 228 02 19 90

SEE GALLAS

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
			waste treatment	
	Hydraulics - Pneumatics			

Activity:

- **Sheet metal work:** large and medium-scale sheet metal work, metallic structures
- Equipment maintenance: small sheet metal work
- Industrial equipment manufacturing: conveyors

Contact:

RENAUDIN Philippe seegallas@wanadoo.fr Tel. +33 (0) 243 35 05 26 ZI de la Pocherie BP 63 72120 Saint Calais

MRE Contact:

RENAUDIN Philippe seegallas@wanadoo.fr Tel. +33 (0) 243 35 05 26

SERFO

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
			maste area ament	

Activity:

- Engineering Design office: project management support, energy
- **Industrial equipment integration:** automation, instrumentation regulation, command-control systems

MRE references:

Studies and production of a innovative floating wind turbine demonstrator SEREO (bi-rotor concept associated with a SPAR floating structure).

Contact:

HERSKOVITS André andre.herskovits@architecture-navale.net Tel. +33 (0) 142 72 32 33 9, rue Jeanne d'Arc - 44000 Nantes

MRE Contact:

LAFFITTE Olivier olivier.laffitte@sereo.fr Tel. +33 (0) 678 81 85 19

SHERPA ENGINEERING

		2000		
STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
Geotechnical - Geophysical studies	Surface treatment - Coating		Human Resources - Training	
	Mechanical and electrome- chanical components		Insurance	
	Cast parts HVAC - Air conditioning - pressurization			
	Power electronics - Com- mand-control systems			
	Instrumentation - Monitoring		maste treatment	
	Hydraulics - Pneumatics			

Activity:

 Engineering - Design office: mechanics, energy, hydraulics, energetics, thermal...

MRE references:

Sherpa Engineering is a supplier of innovative solutions in requirements, simulation, modeling, and multi-physics control systems management in automatic and automation.

Qualifications:

Acquired: EN ISO 9001

Contact:

YAZMAN Atilla a.yazman@sherpa-eng.com Tel. +33 (0) 147 82 08 23 2, rue Alfred Kastler 44307 Nantes

MRE Contact:

GROLLEAU Damien d.grolleau@sherpa-eng.com Tel. +33 (0) 679 22 47 58

SHIPELEC

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Monitoring - Safety		
	Surface treatment - Coating		Operations and maintenance		
	Mechanical and electrome- chanical components Cast parts		Support Vessels		
	Power electronics - Com- mand-control systems	Electrical connection			
Environmental Impact Studies	Instrumentation - Monitoring Hydraulics - Pneumatics	Transport - Handling -			
	High and Low Voltage Electricity				

Activity:

• Industrial equipment integration: automation, LV - HV equipment (boxes...), HVAC, command-control systems, electricity
Naval and industrial electricity
Motor winding and trade
Automation

Contact:

BERTAUD Olivier o.bertaud@shipelec.fr Tel. +33 (0) 240 66 20 66 7, rue René Cassin 44600 Saint-Nazaire

MRE Contact:

BERTAUD Marcel bertaud@shipelec.fr Tel. +33 (0) 240 66 20 66

SOGEBRAS

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			Quality control - Safety - Certification	
		Transport - Handling - Port services			

Activity:

• **Port logistics supplier:** exceptional transport, heavy and outsize packages, international logistics, handling, vessel consignment, maritime agency, storage, transit and customs.

MRE references:

Port operations for the ALSTOM Haliade project (Saint-Nazaire-Le Carnet-44).

Qualifications:

Acquired: EN ISO 9001

Contact:

KUHN Arnaud a.kuhn@sogebras.fr Tel. +33 (0) 240 65 38 76 3, rue de l'lle Chupin 44340 Bouguenais

MRE Contact:

FELTGEN Johann j.feltgen@sogebras.fr Tel. +33 (0) 240 90 41 42

SP

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		
	Composites Metal Construction		Quality control - Safety - Certification
	Surface treatment - Coating		
	Hydraulics - Pneumatics		

Activity:

• **Coating - Surface treatment:** surface treatments, paint on composite, technical coating - special coatings, non-destructive testing, anti-corrosion, waterproofing

Qualifications:

Acquired: EN ISO 9001

Contact:

MONTFORT Patrick patrick.montfort@spi-groupe.com Tel. +33 (0) 680 89 50 71 3, Rue de L'Europe - ZI de la Croix Rouge 44260 Malville

MRE Contact:

GAUTRON Alain alain.gautron@spi-groupe.com Tel. +33 (0) 661 38 45 54

STX FRANCE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance		
Socio-industrial studies	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels		
	Cast parts HVAC - Air conditioning -	Foundations			
	pressurization Power electronics - Command-control systems	Offshore installations Electrical			
Environmental Impact Studies	Instrumentation - Monitoring	connection Transport - Handling -		Waste treatment	
	Hydraulics - Pneumatics	Port services			
	High and Low Voltage Electricity				

Activity:

- Industrial equipment manufacturing: automation, instrumentation-regulations, low and high-voltage equipment, HVAC, power electronics, instrumentation and control, hydraulics, fire prevention and fighting, electricity, project management
- Integration of industrial equipment: automation, instrumentationregulation, low and high-voltage equipment, HVAC, power electronics, instrumentation and control, hydraulics, fire prevention and fighting, electricity, project management
- Small industrial metal work Pipe work: pipes
- **Coating Surface treatment:** surface treatment, composite painting, special coatings, technical paints, non destructive testing
- Shipyard: aluminium, medium and large boiler works, superstructures
- **Mounting Assembly:** hydraulics, pneumatics, electric-electronic wiring, mechanics

MRE references:

- Onshore jacket for Haliade offshore wind turbine (Alstom).
- Offshore electrical station for Westermost Rough, UK. Topside, jacket and piles.
- Barge of installation for tidal turbines.

Qualifications:

Acquired: ISO 9001 - OHSAS 18001 - MASE

Contact:

CASTAING Laurent marine.energy@stxeurope.com Tél. +33 (0) 251 10 91 00 Avenue Bourdelle 44613 Saint-Nazaire Cedex

MRE Contact:

TAVERNIER Benoît benoit.tavernier@stxeurope.com Tél. +33 (0) 251 10 91 00

STX FRANCE SOLUTIONS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	OPERATIONS / MAINTENANCE	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Monitoring - Safety	
Geotechnical - Geophysical studies	Surface treatment - Coating	Drilling - Seabed preparation	Operations and maintenance	
	Mechanical and electrome- chanical components	Onshore assembly at dock	Support Vessels	
	Cast parts HVAC - Air conditioning -	Foundations		
	pressurization	Offshore installations		
	Power electronics - Com- mand-control systems	Electrical connection		
	Instrumentation - Monitoring	Transport - Handling -		
	Hydraulics - Pneumatics	Port services		

Activity:

- Shipyard: aluminum, large and medium-scale sheet metal work, superstructures
- **Sheet metal work:** large and medium-scale sheet metal work, fine sheet metal work, plates, special steels, metallic structure, steel joinery
- **Engineering Design office:** structural materials calculations, manufacturing transformation processes, mechanics, tooling, energy

MRE references:

- -Design and fabrication of a wave turbine prototype.
- -Design and fabrication of technical modules for a power plant.
- -Design of complex installations for offshore wind farms.
- -Development of offshore foundations.
- -Development of a standard of offshore electrical substation.

Qualifications:

Acquired: EN ISO 9001 - EN 14001 - OHSAS

Contact:

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MRE Contact:

TAVERNIER Benoît benoit.tavernier@stxeurope.com Tél. +33 (0) 251 10 91 00

TECHNI INDUSTRIE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction			
Geotechnical - Geophysical studies	Surface treatment - Coating			
		Foundations		
		Offshore installations		
			waste acutificiti	

Activity:

- Sheet metal work: medium and large-scale sheet metal work, plates
- **Mechanical machining:** large-dimension machining, large-dimension assembly, surface treatment
- Industrial equipment manufacturing: manufacturer of rail bogies MRE references:

Capacity to produce series of complex mechanically welded products. Manufacturer of the HELIPAD structure for the ALSTOM WIND company.

Qualifications:

Acquired: EN ISO 3834 - EN ISO 9001

Contact:

LELASSEUX Frédéric direction.generale@techni-industrie.fr Tel. +33 (0) 243 59 23 82 ZI Chambrouillère 53960 Bonchamps-lès-Laval

MRE Contact:

THIMON Éric eric.thimon@techni-industrie.fr Tel. +33 (0) 243 59 23 82

TE-DEUTSCH

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
	Surface treatment - Coating			
	Mechanical and electrome- chanical components			
			waste treatment	
	Hydraulics - Pneumatics			
	High and Low Voltage Electricity			

Activity:

• Industrial equipment manufacturing: electrical and optical connectors **Qualifications:**

Acquired: EN ISO 9001 - EN 14001 - OHSAS

Contact:

MEREDIT Andy ameredit@te.com Tel. +33 (0) 243 61 45 45 Rue du Champ du Verger - ZAC du Monne CS30009 - 72705 Allonnes

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MRE Contact:

LOPEZ Frédéric flopez@te.com Tel. +33 (0) 689 86 18 74

VALEMO COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT INSTALLATION AND LOGISTICS OPERATIONS / MAINTENANCE RELATED SERVICES **STUDIES** Composites Quality control -Safety - Certification Human Resources -Training Mechanical and electromechanical components Resource measurements Wind - Wave -Current Measurements Power electronics - Command-control systems Instrumentation -Monitoring

Activity:

• Equipment maintenance: embedded computer, braking system, real-time communication, electromechanics, monitoring and operations

Hydraulics - Pneumatics High and Low Voltage Electricity

MRE references:

0&M on mast for offshore measurements at Fécamp. Technical assistance on the SEM-REV test site. Contribution to Call for Interest on pilot tidal power farms.

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

PREVOST Frédéric frederic.prevost@valemo.fr Tel. +33 (0) 557 12 11 90 1, rue Eugène Varlin 44100 Nantes

MRE Contact:

BLANDIN Matthieu matthieu.blandin@valorem-energie.com Tel. +33 (0) 608 91 80 20

VALEOL SAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works	Quality control - Safety - Certification	
		Drilling - Seabed preparation		
		Onshore assembly at dock		
	Power electronics - Com- mand-control systems			
	Instrumentation - Monitoring	Transport - Handling -		
		Port services		

Activity:

• Logistics provider: facility management

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

GRACIA Serge serge.gracia@valeol.fr Tel. +33 (0) 228 03 90 00 1, rue Eugène Varlin 44100 Nantes

MRE Contact:

BLANDIN Matthieu matthieu.blandin@valorem-energie.com Tel. +33 (0) 608 91 80 20

VALOREM

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STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT			RELATED SERVICES	DISMANTLING	
	Composites Metal Construction			Quality control - Safety - Certification		
Resource measurements	HVAC - Air conditioning - pressurization					
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems					
Environmental Impact Studies	Instrumentation - Monitoring					
	Hydraulics - Pneumatics High and Low Voltage Electricity					

Activity:

• Engineering - Design office: project management support, energy, electrical engineering

MRE references:

Electrical technical assistance on the SEM-REV test site. Contribution to Call for Interest on pilot tidal power farms.

Qualifications:

Acquired: EN ISO 9001 - EN 14001

Contact:

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MRE Contact:

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VALREA SAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	INSTALLATION AND LOGISTICS		DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Infrastructures - civil works		
		Drilling - Seabed preparation		
		Offshore installations		
		Electrical connection		
		Transport - Handling -		
	High and Low Voltage Electricity			

Activity:

• **Engineering - Design office:** prime contractor, project management assistance, energy

MRE references:

SEENEOH project electrical engineering (partner).

Contact:

CAUSSE Jean-François jean-francois.causse@valrea.fr Tel. +33 (0) 556 49 42 65 1, rue Eugène Varlin 44100 Nantes

MRE Contact:

BLANDIN Matthieu matthieu.blandin@valorem-energie.com Tel. +33 (0) 608 91 80 20

VPS VISSERIE PRODUIT SERVICE

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT		RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction		Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating			
	Mechanical and electrome- chanical components			
	Cast parts HVAC - Air conditioning - pressurization			
			waste treatment	

Activity:

- Tool-maker: small tools
- Small industrial metal work Pipe work: sanitation, cold

Contact:

NAULLEAU Thierry t.naulleau@visserie-vps.com Tel. +33 (0) 678 99 22 91 18, rue de la Camamine 85150 La Mothe-Achard

MRE Contact:

NAULLEAU Thierry t.naulleau@visserie-vps.com Tel. +33 (0) 251 05 71 36

WPD OFFSHORE FRANCE SAS

STUDIES	COMPONENTS AND SUB-ASSEMBLIES FOR MRE EQUIPMENT	OPERATIONS / MAINTENANCE	RELATED SERVICES	DISMANTLING
Preliminary - Contextual Studies	Composites Metal Construction	Monitoring - Safety	Quality control - Safety - Certification	
Geotechnical - Geophysical studies	Surface treatment - Coating	Operations and maintenance	Human Resources - Training	
Socio-industrial studies	Mechanical and electrome- chanical components Cast parts		Insurance	
Resource measurements			Bank - Financing	
Wind - Wave - Current Measurements	Power electronics - Com- mand-control systems		Waste treatment	
Environmental Impact Studies	Instrumentation - Monitoring			
	Hydraulics - Pneumatics High and Low			

Activity:

• Engineering - Design office: energy, project management for the development, construction and operation of offshore wind farms

MRE references:

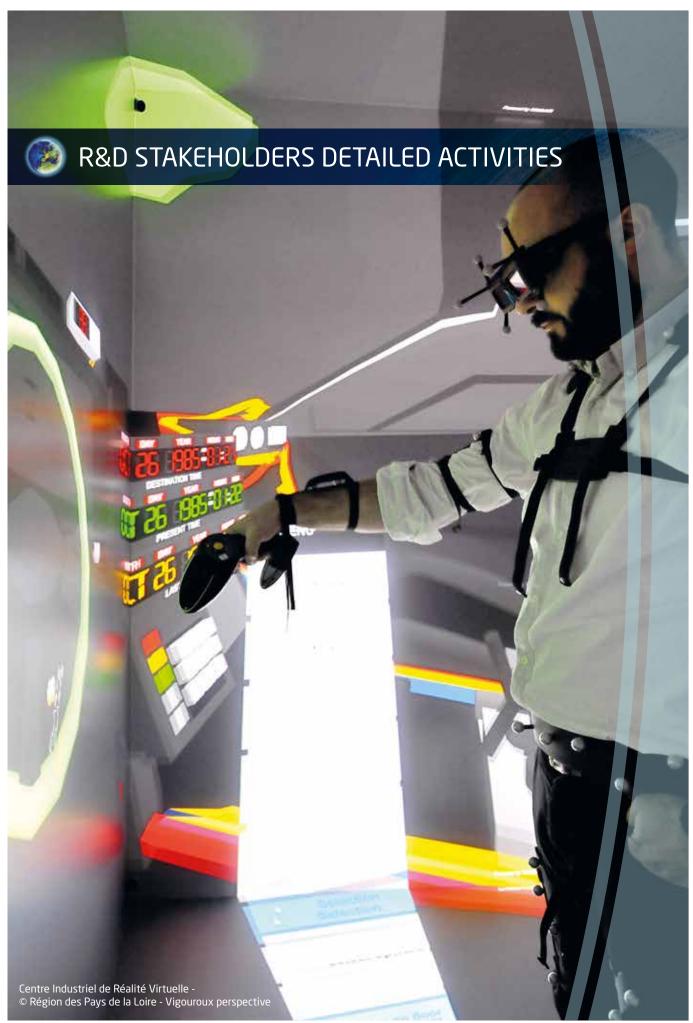
- Winner of the tender n°2011/S 126-208873 for the installation of offshore wind turbines on the Fécamp and Courseulles-sur-Mer sites, in partnership with EDF EN and Dong Energy.
- Construction of the first offshore wind farm in Germany (Baltic1). 2 farms under construction (576 MW) and 3 under contract finalization (1,110 MW).
- 4 other projects authorized (2,100 MW) 6,400 MW in offshore development including 2,500 MW in France.

Contact:

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MRE Contact:

WARLOP Pierre p.warlop@wpd-offshore.fr Tel. +33 (0) 611 60 55 92





The main MRE stakeholders for research and innovation in the Pays de la Loire

WEST ATLANTIC MARINE ENERGY CENTER

A collective regional strategy for research, training and innovation

After considerable collective discussions at the initiative of the Pays de la Loire Region to boost the regional marine renewable energy sector and enhance its visibility, a common strategy was defined by research, training and innovation stakeholders. Based on industrialists' needs, this strategy determines the objectives in the medium term:

- Take leadership in bottom-mounted wind turbines, particularly in extreme conditions, and accelerate the transition from fixed to floating structures.
- **Take a lead in less mature MRE technologies,** such as tidal power, ocean thermal energy and wave energy.

The clearly stated ambition is **to better structure and make** more attractive the offer of professionals in the sector, at the regional and international level.

A road map (2015-2020) defines the way forward, the means and the actions to implement, with each stakeholder (higher education establishments, research organizations, several local authorities, economic and industrial actors, competitiveness clusters...) committing in their area of expertise.

This approach is carried by the École Centrale de Nantes with the University of Nantes, the EMC2 cluster, the IRT Jules Verne, the CARENE, Nantes Métropole and the Pays de la Loire Region.

Contact:

BACLET Philippe contact@weamec.fr Tel. +33 (0) 240 37 15 96

EMC2

EMC2 ecosystem is the **national leader to advanced manufacturing tor marine structures:**

- **Standard setters in the industry** (specifiers and SMEs, including Bénéteau, DCNS, STX, Alstom, HydrOcean, Multiplast...)
- Excellent training and research in the fields of hydrodynamics, materials and mechanics at engineering schools like Art et Métiers Paritech Angers, Ecole Centrale de Nantes, Ecole des Mines de Nantes, Institut des Matériaux de Nantes...
- Research Institute (IRT Jules Verne) and technological platform (Technocampus Ocean)
- A collaborative innovation process: nearly €180 million invested over the past ten years in R&D projects related to advanced manufacturing technologies for ship building and marine structures

Contact:

PÉAN Sophie sophie.pean@pole-emc2.fr Tel. +33 (0) 228 44 34 07 Chemin du Chaffault, 44340 Bouguenais

IRT JULES VERNE

The Jules Verne Technological Research Institute is the only one in France that develops **advanced manufacturing technologies tor**

shipbuilding and marine structures industries using a multi-industry approach. Its research programme focuses more particulary on

the to/lowing aspects:

- Modeling and simulation and fluid-structures interactions
- Advanced manufacturing processes and assembly (robotized welding)
- Enhanced the performance (durability, corrosion, lighter structures)

35 % of the budget of research is dedicated to shipbuilding and marine structures industries

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TECHNOCAMPUS OCEAN

Technocampus Ocean, **new technological platform dedicated to marine structures and metallic materials,** will be operational in July 2015:

- \bullet Offer pooled resources (including equipment, personal and related services at a 17 000 m^{z} site
- Co-locate companies and academics research teams (DCNS, HydrOcean, Ecole Centrale de Nantes, ...)
- Encourage interdisciplinary approach, collaborative R&D and technology transter
- Cover activities from basic research to pre-industrialization in the field of manufacturing tor shipbuilding and MRE

Contact:

LE FLOCH Hélène h.lefloch@technocampus.fr

TECHOCAMPUS SMART FACTORY

Technocampus Smart Factory with its **industrial center for virtual reality (CIRV)**, **dedicated to the industry digitalization**, helps shipbuilding and marine industries to appropriate digital tools. It

- Develops virtual reality applications in all stages of the industrial value chain (from design to production)
- Offers shared technological equipment at the cutting edge ("5-sided CAVE", 2 collaborative "CAD-Walls", virtual reality helmets)
- Provides customized service solutions

Contact:

LEVIONNOIS Sophie s.levionnois@technocampus.fr

JULES VERNE MANUFACTURING VALLEY

The Jules Verne Manufacturing Valley is the **expert ecosystem for French manufacturing**, exerting its influence from Nantes and the Pays de la Loire region.

It centralizes industrial skills and key academics, it develops collaborative intelligence, it associates innovation with growth, it is leading to the industry of tomorrow.

Contact:

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S2E2

The competitiveness cluster for the management of electrical and thermal energy

S2E2 contributes to the emergence of **new technological solutions and new products and services in the area of energy efficiency, renewable energy and smart grids.**

It aims to promote the competitiveness of its companies in the Centre-Val de Loire, Pays de la Loire and Limousin regions, by encouraging collaboration between companies and laboratories in the form of technological innovation projects, whose benefits are growth drivers for these companies in their markets.

One of S2E2's 5 strategic areas of activity is MREs: energy production, connection of MRE to the electricity grid, production forecasts, intelligent energy management, storage. By associating transversal skills, the cluster facilitates the integration of MRE in the overall energy mix.

Contact:

Rachel Guilloteau rachel.guilloteau-s2e2-ext@st.com www.s2e2.fr

POLE MER BRETAGNE ATLANTIQUE

Develop the maritime economy and employment through innovation

The action of the Mer Bretagne Atlantique competitiveness cluster is based on the virtues of working in networks, with collaboration between companies and research centers to develop innovative collaborative projects in 6 strategic business activities: maritime safety and security, boats and sailing, marine energy and mineral resources, marine biological resources, coastal environment and development, port infrastructures and maritime transport.

Since its creation in 2005, the Cluster has labeled 214 innovative projects (December 2014) representing an **overall R&D budget of nearly €720 M** and leads the dynamic of a network of nearly 350 members. As a support structure, it promotes the creation of collaborative projects, accompanies project carriers in the search for partnerships and financing and promotes innovative products and services from labeled projects and their access to markets.

Contact:

Frédéric RAVILLY frederic.ravilly@polemer-ba.com www.pole-mer-bretagne-atlantique.com/fr

ÉCOLE CENTRALE DE NANTES

For more than 20 years, Centrale Nantes has resolutely turned towards marine renewable energy, in areas such as **ocean engineering**, **naval architecture and construction**, **the harnessing of energy from the oceans** (wind, waves, current), **structural calculations**, **geotechnics**, **composite materials**, **robotics** (drones), **command-control systems**... via the LHEEA, GeM and IRCCyN laboratories.

Centrale Nantes researchers are able to address these issues by implementing digital and experimental approaches in a complementary way. This translates by the implementation of exceptional experimental means, such as the oceanic basins, unique in Europe, **the SEM-REV offshore test site**, and the use of powerful calculation means. Centrale Nantes researchers address these thematic topics from upstream development up to the transfer to industrial actors, as part of suitable partnerships.

Contact:

Bertrand Alessandrini bertrand.alessandrini@ec-nantes.fr www.ec-nantes.fr

CEA TECH

CEA Tech, the CEA's (French Atomic Energy and Alternative Energy Commission) technological research cluster, brings together **4,500 engineer-researchers dedicated to innovation in support of industry.** It develops and disseminates key generic technologies for all types of companies and industrial sectors. In the area of MRE, CEA Tech works, in particular, on:

- Innovative energy storage systems based, notably, on a high power and large volume test capability.
- NDT using robotized X tomography treating large-dimension and largethickness parts.
- Support for cobotic type gestures, for the production of large structures.
- Instrumentation for the monitoring and characterization of large structure aging.
- Analysis and vectorization of massive quantities of data for monitoring systems.

Contact:

Rémi DE BETTIGNIES remi.de-bettignies@cea.fr http://www.cea-tech.fr/cea-tech

ENSM

ENSM's research topics are: energy production, environmental protection and safety and security.

The establishment is a partner for collaborative projects within these themes. Thus, the ENSM is well positioned to reach the common aims of most of the major engineering schools in the area of research:

- Address the current major societal challenges such as energy, mobility, information and the environment.
- Propose strategic visions to the socio-economic partners. Research work will be carried out in close collaboration with local authorities via bilateral or collaborative partnerships.
- Establish research collaborations that offer numerous possibilities nationally and internationally with mobility offers for students such as internships or academic exchanges.

Contact:

Yann VACHIAS yann.vachias@supmaritime.fr http://www.supmaritime.fr/les-sites-ensm/nantes.html

CSTB

An independent public body supporting innovation in the the building sector, the Centre Scientifique et Technique du Bâtiment (Center for Scientific and Technical Building Studies) (CSTB) carries out **four key activities - research, expertise, assessment, dissemination of knowledge** – that allow it to meet the sustainable development objectives for construction projects, buildings and their integration in neighborhoods and cities.

Amongst its equipment, the **Jules Verne climatic wind tunnel** allows full-size testing of the behavior of buildings and construction elements, as well as that of vehicles and transport materials. This more than 5 000 m² facility is **capable of recreating all climatic conditions and thus offer a wide range of studies, in particular for the MRE sector.**

Contact:

Philippe DELPECH philippe.delpech@cstb.fr www.cstb.fr/nantes

CETIM

Mechanical innovation

At the crossroads of research and industry, CETIM, "Carnot" labelled Technological Institute, is the French mechanics expertise centre. Mechanics R & D Tool for nearly 6,500 companies (800 in Pays-de-la-Loire), there are 700 people, including more than 2/3 engineers and technicians, for \in 113 million in revenue. The centre multiplies its activities with a network of scientific and technical partners.

CETIM ensures a strong presence close to its national customers, its industrial response capabilities extend worldwide, particularly in Francophone regions.

R & D Partner of major specialized players, CETIM has a comprehensive and multidisciplinary offer to transform and to implement scientific knowledge in applications supporting industry.

MRE Contact:

HERVÉ Stéphanie stéphanie.herve@cetim.fr Tél. +33 (0) 240 37 36 71

IFSTTAR

IFSTTAR is a public research institute which produces, distributes and promotes knowledge and new technologies in the fields of transport, infrastructure, natural hazards and the city.

Marketable skills in the field of MRE:

- The selection and development of environmental materials (including innovative materials)
- Knowledge of degradation modes
- The selection of sustainability indicators
- The selection and development of methods for determining indicators (destructive or not)
- The breakdown in terms of monitoring and maintenance (SHM)

MAST (Materials and Structures) department: seabed concretes (constitution and sustainability indicators), metallic materials and structures (fatigue and corrosion, including cables), cables, composites, bonding.

GERS Department (Geotechnics Environment Natural Hazards and Earth Sciences): Soil Mechanics, soil-structure interaction, erosion, sedimentation, geophysical, NDT.

COSYS Department: monitoring, detection, fault location, sensor networks, databases, dedicated web-related applications, instrumented composites.

AME Department: environmental acoustics (digital models and experimental identification).

Remarkable facilities: geotechnical centrifuge, cable fatigue bench, semianechoic chamber, mixing plant, and more

Projects in the field of MRE:

- Fondeol2: degradation modes of the foundations of metal Jacket wind turbines, SHM
- Surffeol: monitoring of offshore wind turbine foundations
- Oceagen: qualification of floating wind turbine anchor cables
- Everest: instrumented composite blades

Main activities:

Research - Expertise - Tests - Technology Certification - Innovation Transfer

MRE Contact:

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Communication Contact:

Emma GANTIER emma.gantier@ifsttar.fr Tel. +33 (0) 240 84 59 07

PÔLE ACHATS SUPPLY CHAIN ATLANTIQUE PASCA

The Atlantique Purchasing Supply Chain (PASCA) cluster **brings together and puts into contact economic, academic, and institutional actors around Purchasing and Logistics issues.** Its main aim is to develop the competitiveness of companies in the territory by mobilizing the lever of innovation.

Following this perspective, the PASCA - with the main stakeholders of the MRE sector - has undertaken actions both on the **management of connected production processes** (shared production sites, pooling of human resources) and on **flow management** (transport, Logistics Hub simulation) leading it to offer innovative, successful and sustainable organizational models. Thus, it actively participates in the emergence of a durable MRE sector in the Pays de la Loire.

Contact:

François JAN francois.jan@pasca.fr www.pasca.fr

SEM-REV

SEM-REV is the 1st European multi-technology offshore test site operated by Centrale Nantes. It was developed for the testing, in real high sea conditions, of marine energy recuperation systems: wave energy, floating offshore wind turbines, mixture of both technologies...

The only site of its kind in France to obtain all the authorizations, and the only one in Europe to be connected to the electrical grid, it is a **turnkey tool for all industrialists in the MRE sector.**

SEM-REV is an essential complement to the means at the Centrale School of Nantes, and in particular the CNRS-labeled Laboratory of Hydrodynamics, Energy and Atmospheric Environment (LHEEA), to assist technology developers in all design stages, from the initial idea to the industrial prototype stage.

Contact:

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NANTES UNIVERSITY

The R&D partner for the MRE sector

A major cluster for higher education and research in the Great West,

the University of Nantes has made transdisciplinarity the central axis of its project, and considers that the next scientific revolutions will only be possible by merging knowledge, skills and expertise.

In the MRE area, biologists, physicians, economists, geographers and lawyers (a total of 120 researchers) currently collaborate on research and innovation projects. There are numerous areas of expertise, from pure technological research to human and social sciences:

- durability of materials,
- instrumentation of structures,
- reliability of wind turbine foundations,
- bio-colonization,
- energy storage and transportation,
- economic assessment of MRE,
- marine space planning,
- legal regime for dismantling,
- social acceptability and use conflicts,
- ...

11 research laboratories (out of 63 in the University), and 5 expertise cells (CAPACITES, promotion sector for the University) are directly mobilized for research and innovation in support of MRE:

- **GeM** (Research Institute in civil and mechanical engineering): aging and monitoring of materials
- **IREENA** (Nantes Atlantique Research Institute for Electrical Energy): energy and networks
- LTN (Nantes Thermokinetics Laboratory): ocean thermal energy
- **IRCCyN** (Nantes Research Institute for Communications and Cybernetics) : process robotization
- CDMO (Center for Maritime and Ocean Law): legal and conflict expertise
- **LEMNA** (Nantes Atlantique Laboratory for economics and management) : maritime economy and storage
- MMS (Sea, Molecules, Health): biological and bio-colonization impacts
- **LETG** (Coast, Environment, Remote Detection, Geomatics): management of maritime spaces
- **LPGN** (Nantes Laboratory of Planetology and Geodynamics) : sediment transport, observations
- IMN (Jean Rouxel Institute of Materials): storage and sensors
- IHT (Institute of Man and Technology)
- **GEPEA** (Laboratory for Process Engineering Environment Agro-food) : biomass
- **Cellule Mer (Sea Cell)** (Measurements, Expertises and Recommendations in the area)
- **IXEAD** (Expertise cell in port and offshore engineering)
- ITIS (Expertise cell in surface treatment of materials)
- IRÉALITÉ (To communicate with immediacy!)
- **ERIMAT** (Team of Industrial Relations for Materials)

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L'Agence régionale - Pays de la Loire Territoires d'Innovation works on behalf of the Pays de la Loire region, to structure and promote the regional MRE sector.

Nantes Saint-Nazaire

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VENDÉE

EXPANSION