Employment trends in all sectors related to the sea or using sea resources

France



European Commission DG Fisheries and Maritime Affairs

An exhaustive analysis of employment trends in all sectors related to sea or using sea resources

Country report - France

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1.0 Summary^I

The French maritime sectors had a value added of €16.4 billion in 2001 and provided a total of 415,541 jobs in 2001 and over 422,000 if the latest years of available statistics are taken into consideration. The sector has experienced high growth rates with value added increasing by 10.8% from 1999 to 2001. Employment grew by 5% during this time.

The maritime sector of France is marked by the predominance of coastal tourism. Recreational boating, shipbuilding, marine equipment, navy and seaports are also important players not only in the maritime 'cluster' but in the French economy as a whole – each employing 24,000-56,000 individuals.



Figure 1.1 Share (%) of employment in different maritime sectors, 2001

Although the predominance of coastal tourism is still substantial, it has levelled off slightly to the advantage of other industries. In terms of production, the offshore oil related industry has increased its value in the maritime economy. Shipbuilding and shipping also contributed to value added by 12 % and 10% respectively^{II}. In some sectors such as offshore, boatbuilding and the merchant fleet, the number of jobs has risen at the same rate as production. No significant drops have been seen in the sectors of the maritime economy – with the exception of shipbuilding. Shipping, marine equipment, offshore oil

^{II} l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer.

¹ This report excludes employment related to fishing. Most of the data comes from l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer.

and gas extraction, maritime works and coastal tourism have been able to create thousands of new jobs over the past decade.

	4007	4000	4000	2000	2004	2002	2002	2004	2005
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Shipbuilding	29,684	26,036	25,512	-	23,564	-	-	-	-
Marine equipment	18,900				25,000	-	-	22,000	30,000
Shipping	-	-	12,624	-	13,632	-	-	-	-
Seaports	-	-	-	-	27,259	-	-	-	-
Maritime services	-		-		11,041	-	-	-	-
Navy	-	-	-	-	55,293	-	-	-	-
Maritime works	2,956	-	3,356	3,835	3,564	-	-	-	-
Offshore oil and gas	17,000	19,000	17,500	17,000	24,000	25,200	25,600	-	-
Rec. boating	-	-	-	-	40,000	-	-	-	-
Coastal tourism	167,194	182,826	190,402	196,334	190,688	-	-	-	-
Marine aggregates	-	-	-	-	300	-	-	-	-
Offshore wind energy	-	-	-	-	-	1,200	-	-	-

Table 1.1 Employment in sea related sectors, 1997 -2005

Source: l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer and ECOTEC, 2006

Shipbuilding 2.0

The French shipbuilding sector experienced a favourable economic situation from 1996 to 2000 which was due to a phase of steady growth on their international markets. However, activity in the sector was slowed by a sluggish demand for large vessels in 2001 and 2002. No new orders for cruise-liners were recorded for shipyards for two years. The production output of shipyards went from 920,000 cgt in 2000 to 464,000 at the end of 2002.¹

However, small and medium sized shipyards are described as dynamic and specialising in niche markets. These recorded good results in 2002, due to orders for fishing vessels, service vessels, passenger boats or small military vessels. This sector has shown sustained and diversified activity overall.

Annual turnover of the French naval industries is 1, 9 billion euros, of which about two thirds is for export.^{II} Naval shipbuilding has an annual turnover of 1,350 million euros, of which 70% is for export. Naval ship repair generates a turnover of 200 million euros and equipment for naval shipbuilding adds a turnover of 300 million euros, of which about 50% is destined for the export market.

2.1 **Employment trends**

According to Ifremer the shipbuilding and repair sector employed 54,235 people in 2001.^{III} However, the marine equipment and boatbuilding sectors are included in these figures but are counted separately in this study. According to the definition adopted for this study, the shipbuilding sector in France created 23,500 jobs in 2001. In comparison to employment in 1997, the number of jobs in the sector declined from 29,700 to 23,600 (see table 2.1 below). The Ministry of Economy and Industry provides slightly different figures, registering 20,000 jobs. Naval shipbuilding employs 6,640 people, naval ship repair 2,000 people and equipment for naval shipbuilding 10,000 people.^{IV}

Sector	1997	1998	1999	2000	2001	2002				
Civilian Shipbuilding	6,092	5,297	6,032	5,984	6,260	-				
Merchant shipyards	795	758	626	714	695	-				

Table 2.1 Employment in shipbuilding and repair

^I Ibid.

^{II} www.industrie.gouv.fr/portail/secteurs/indnavales.html

Il l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer.

^{IV} www.industrie.gouv.fr/portail/secteurs/indnavales.html

Sector	1997	1998	1999	2000	2001	2002
Naval shipyards	20,333	17,515	16,332	-	14,787	14,002
Ship repair	2,464	2,466	2,522	2,150	1,822	-
Total	29,684	26,036	25,512	-	23,564	-

Source: l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer.

In terms of trends in employment by each sub-sector, naval shipbuilding has seen the strongest decline, especially between 1997 and 1998. The number of employees in merchant shipbuilding activities has increased slightly.



Figure 2.1 Trends in employment by sub-sector, 1997-2001

Some of the factors affecting employment in different sub-sectors of shipbuilding are discussed below:

- For naval shipbuilding 2001 was a poor year for orders as a result of cutbacks in military budgets. A strong recovery has been established in the wake of the military programming law for 2003-2008, up by 5.5 billion euros from previous budget (new series of frigates, SSN attack submarines, etc). This upturn has been felt since 2002 with turnover increasing by 44% to reach 1.7 billion euros (from 1.176 in 2001).¹ On April 30th 2003, DCN personnel accounted to 13,700 staff. However personnel cutbacks have been announced bringing the total labour force down to 12,300 by 2005.^{II}
- Merchant ship repair: Merchant ship repair is a small scale activity in France, but appears to be on the upturn after significant drops in turnover in 2000 and 2001.

¹ l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer. ^{II} Ibid.

2.2 Employment projections

The French naval shipbuilding industry is concerned over the sudden arrival of American firms in Europe. As a result the DCN is forming alliances with other merchant and European shipyards.

According to a recent study by Ocean Shipping Consultants Limited the average growth rate for demand for merchant ship repair will be 2.5% between 2006-2010 and 2% from 2011 to 2015.

3.0 Marine equipment

There were 22,000 equipment providers and sub-contractors in France, according to a report on the French maritime cluster published in 2004.¹ The annual turnover of the marine equipment sector was €2500 million euros.^{II}

According to Ifremer, employment in the marine equipment sector stood at 25,000 in 2001.^{III} Recent reports indicate that employment in this sector rose to 30,000 in 2005.

Table 3.1 Marine equipment related employment, 1997-2005

1997	2001	2004	2005
18,900	25,000	22,000	30,000
a 1777			

Source: Various sources

4.0 Shipping

The French fleet has decreased from 798 vessels in 1962 to 514 in 1975. Since 1995 it has remained stable between 205 and 210 ships. In 2004, the French fleet consisted of 207 ships representing 4,5 million GT and 6,2 million DWT. The shipping and coastal transport sector generated a turnover of \in 5,053 million in 2001 (turnover+ stocks + capitalised production costs) and a value added of \in 681 million.^{IV}

¹ l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime*. Ifremer. ^{II} Ibid.

^{IV} Ibid.

III Ibid.

4.1 **Employment trends**

French ship-owners employ just under 14,000 seafaring personnel and 7,000 land-based personnel.¹ Armateurs de France estimates that there were 10,000 sailors and 5,500 landbased personnel.^{II}

Between 1997 and 2001 the number of seafarers increased by over 1,200 (see table 4.1 below). However, the figures are substantially down from the sixties when there were over 43,000 seafarers in France.

Table 4.1 Employment in the shipping sector, 1997-2002									
Shipping	1997	1998	1999	2000	2001				
Transportation of goods, commercial shipping (this									
includes shipping and coastal transport)	11,422	11,494	11,574	12,272	12,632				
Ocean towage – Towage of ships and platforms			1,050	-	1,000				

Source: l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer.

12,624

An increase in demand has occurred in the last ten years at the same time as the sector has experienced a decline in employment globally. Trends in the sector include the automatisation of ships as well as the employment of foreign labour.^{III} Since 1998, French maritime commerce has seen a stabilisation of employment and even an increase.^{IV}

Passenger transport and harbour activities provide nearly two-thirds of jobs for sea going crew. The breakdown of employment in the sector is as follows: passenger transport 45%, regular lines 9%, Oil 8%, short sea shipping 3%, chartered 8%, 6% public services, 21% harbour activities.^V Officer unemployment is very low (4% in 2004).^{VI}

4.2 Skills and Training

Total

The demand for officers and qualified seafarers exceeds the supply, which causes recruitment problems. The problems faced by the sector are attracting young qualified recruits as well as keeping them.^{VII} Information also suggests that there is demand for

2002

960

13,632

6

¹ l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer.

^{II} Le transport maritime francais, Armateurs de France <u>www.armateursdefrance.org</u>

III Emploi et la formation maritimes au commerce, Ministere de l'equipement, January 2006

^{IV} Ibid.

^V l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer. ^{VI} Ibid.

VII Emploi et la formation maritimes au commerce, Ministere de l'equipement, January 2006

those graduating from maritime schools, with 95% of students from maritime schools being in employment (maritime or land-based) five years after completing their studies.¹

The lack of qualified officers and sailors has been argued to compromise safety on board vessels, as those recruited from third countries are often less qualified. This may also impact on the quality of recruits in land-based maritime firms that often need the skills of ex-seafarers.^{II}

The number of places on entrance exams to the four schools of merchant marines has increased steadily in the last 10 years (275 in 1999), it has now stabilised in the last years around 230. However, drop outs have increased. The deficit in officers was aggravated by the weakness in recruitment at the end of the 1980s. This situation gave rise to a training reform in 2002, with the aim of opening up the sector to a new pool of recruits, integrating young people, facilitating access to officers' certificates, encouraging diversity in career paths and developing mobility.^{III}

On-going education reform is based on 5 principles: the standardisation of validation (certification) of skills based on experience, the modularisation of teaching, restoring of the professional fields of study, the development of apprenticeships, and the creation of a professional baccalaureate. There is a possibility to gain accreditation from experience, which then reduces the time that more experienced people take to gain an officers' certificate (this has been in place since 2003). Teaching is modular and general, which permits the individualisation of career pathways, and a choice of careers between fishing, commerce and pleasure-boating.

As well as the academic stream (to which recruitment is via entrance examinations), there is also a professional stream, since 2003, from which students can access the same levels of command as from the academic route, (on deck or in engineering).

In 2005 two professional maritime baccalaureates were created, one for the deck and another for the engineering sector. This will improve the appeal of maritime training and open up the profession to new recruits. The Government Ministry responsible for the sea has also developed a brochure of 12,000 schools in France providing training for the seagoing professions.

III Ibid.

¹ Emploi et la formation maritimes au commerce, Ministere de l'equipement, January 2006

[&]quot; Ibid.

4.3 Transferability of skills

Seafaring skills are in demand in land-based maritime firms; traditionally ex-seafarers have their second career in companies active in the ports, vocational education institutes, insurance, banks, brokers and underwriters and in classification societies.¹

Passenger transport is the most important form of employment of sea going officers in France: 50% of French officers work on ferries. Often officers working on ferries also pursue a career in pilotage.

5.0 **Seaports**

There are three types of ports in France: autonomous ports (PA), ports of national interest (PIN) and decentralised ports. PAs (merchant harbours) are run by the State, and PINs (merchant fishing harbours) are under State authority but operation of facilities is generally contracted out to chambers of commerce and industry. Pleasure ports are also important in developing local tourism. The turnover of French ports was €5 billion."

Direct seaport related employment in France and in the overseas territories was 27,259 in 2001.^{III}

			2001 (total state			2002 (total State
Subsectors	ΡΑ	PIN	harbours)	PA	PIN	Harbours)
State services	1,419	2,100	3,519	1,353	2,076	3,429
Port organisation	5,608	1,725	7,333	5,591	1,796	7,387
Harbour professions ^{IV}	23,246	5,793	16,407	23,217	5,445	n.a
Including: Pilotage	566	182	748	552	182	734
Active stevedores	3,417	997	4,414	3,401	985	4,386
Boatage	713	213	926	717	249	966
Towage	367	367	734	381	379	760
Total direct harbour	30,273					
employment		9,618	27,259	30,161	9,317	n.a

Table 5.1 Direct harbour employment in 2001 (metropolitan France and overseas)

Source: French Marine Related Economic Data 2003, Ifremer

^{II} Le cluster maritime Francais, Le poids economique et social de la France maritime, 2004, Ifremer.

The figures differ from the Ifremer studies due to different classification of the seaport sector.

IV Excluding shipping.

^I Ibid.

6.0 Maritime services

Total employment in maritime services in France was 11,041 in 2001.¹ Maritime insurance and banking together employed 2,127, whilst research employed 2,874.¹¹ Employment both in the banking and insurance sectors remained constant between 1997 and 2000 - after which slight increases has been witnessed in the insurance sector.

Maritime services	1997	1998	1999	2000	2001	2002			
Research and development (marine research)	-	-	-	-	2,874	-			
Maritime and transport insurance (full time)	1054	1,043	1,092	1,090	1,227				
Banking	888	897	891	908	900	900			
State services	-	-	-	-	4,600	-			
Marine publications	-	-	-	-	440	-			
Ship supply	-	-	1,050	-	1,000	960			

Table 6.1 Employment in maritime services sector, 1997 - 2002

Source: l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer.

7.0 Maritime works

This chapter refers to employment related to maritime civil engineering, dredging and manufacturing, laying and maintenance of underwater cables.

The dredging industry provided 596 jobs in 2002^{III}. Employment generated by dredging activities declined by 11.8% between 1997 and 2002.

The sector of manufacturing, laying and maintenance of underwater submarine cables employed 1,507 persons in 2002. Employment in the sector has experienced quite sharp fluctuations, rising from 1,170 in 1997 to 2,168 in 2000 and again decreasing to 1,507 in 2002^{IV} . The overall increase in employment between 1997 and 2002 was 28.8%.

Maritime civil engineering is defined as constructing facilities, quays and piers of harbours, bridges, coastal protection and coastal and defence works for the army – both inland water as well as coastal civil engineering. Turnover of the sector (civil engineering) has shown constant growth since 1995, although there has been some stagnation since 1998. French enterprises in the civil engineering sector achieve a significant part of activity in exports.

^{III} l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime*. Ifremer. ^{IV} Ibid.

¹ l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime*. Ifremer. ¹¹ Ibid.

Turnover of activity outside France (including overseas territories) accounted for 83.3% of total turnover. Employment in the sector in 2001 was 1061 and it has remained relatively constant since 1997^I.

	1997	1998	1999	2000	2001	2002	Change 1997 - 2002
Dredging (dredging, hydrography, safety in ports)	676	650	662	627	587	596	-11.8%
Sub-marine cables (manufacturing, laying and maintenance of underwater cables)	1,170	-	1,597	2,168	1,916	1,507	28.8%
Maritime civil engineering	1,110	1,056	1,097	1,040	1,061	-	-
Total	2,956	-	3,356	3,835	3,564	-	-

Table 7.1 Employment in maritime works, 1997 - 2002

Source: French Maritime Related Economic data 2003, Ifremer

8.0 Offshore oil and gas extraction

The industry supplying the off-shore oil and gas sector is structurally orientated towards exports, because of a lack of national oil production. The French industry ranks 2nd to the American oil and gas related industries for exports. Companies in sector provide services and equipment for exploration and production, refining and petrochemicals and transporting gas.

French companies supplying the oil industry experienced sustained growth from 1994-1998, consolidating their position worldwide in this period. There was a drop in 1999 but this was soon followed by a strong upswing in 2000. Following the 2001 terrorist attacks, the sector underwent a slight decrease in investments.

In relation to gas industry only, service providers reacted strongly to market fluctuations in the industry and were hard hit by a fall in orders in1999, but experienced a strong recovery in 2000 and 2001. In 2002 there was a 3% decrease in turnover, with a 3% increase predicted in 2003. Equipment manufacturers and engineering firms, which are generally less prone to such fluctuations, saw their sales decline by 3% between 2001-2002. A growth rate of 1.3% is predicted for 2003.

8.1 Employment trends

After a drop in 1999 and stagnation in 2000, the labour force in the oil and gas industry rose by 12% in 2001 and by 5% in 2002, reaching 61,000 people (25,000 of whom work in the offshore sector). The Cluster Maritime Francais report indicates that employment related to offshore oil and gas extraction grew by 50.6% between 1997 and 2003 - from 17,000 to 25,600 employees.¹

Table 8.1 Employment in offshore oil and gas extraction, 1997 - 2003

1997	1998	1999	2000	2001	2002	2003	Change
17,000	19,000	17,500	17,000	24,000	25,200	25,600	50.6%
<u> </u>				1 0000 11			

Source: French Maritime Related Economic data 2003, Ifremer

9.0 Recreational boating

The pleasure boating industry has steadily developed over the past few decades, with constant increases in boat registrations. The turnover of 'pleasure' ports in 2004 was around \in 162 million euros.^{II} In total, if the sale and construction of pleasure boats is included, the sector has a turnover of \in 2, 8 billion.^{III} The production of boats has an annual turnover of \in 1 billion, rising to \in 1, 5 billion if equipment suppliers are included.^{IV}

9.1 Employment trends

Total employment in the water sport industry was 40,000 on 31st August 2001. (Figures are not available for previous or subsequent years.) Of this, 9,441 was employment in boat building and repair.^V The number of jobs directly related to boatbuilding has been reported to have nearly doubled over the past decade.

A document from the Ministry of Equipment, Transport and Tourism states that direct employment was 2,500 (including those who work seasonally) in 2004 and 40,000 in indirect employment in the whole nautical sector, of which 16,000 were directly linked to activities in ports (approximately 10 employed per 100 places in ports).^{VI}

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¹ Le cluster maritime francais, Ifremer, 2004

^{II} Navigation de plaisance, Tourisme de A a Z, Direction du Tourisme, www.equipement.gouv.fr

III Ibid.

^{IV} Navigation de plaisance, Tourisme de A a Z, Direction du Tourisme, www.equipement.gouv.fr

^V l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer.

^{VI} Navigation de plaisance, Tourisme de A a Z, Direction du Tourisme, www.equipement.gouv.fr

Coastal tourism is the largest sector in the maritime and coastal economy in terms of turnover, added value and employment. The seaside accounts for 26.7% of total tourist consumption on non business stays for both domestic and inbound tourists.¹ Coastal accommodation accounts for 40% of the offer of all tourist accommodation.^{II} Coastal tourism accounts for 26.3% of the €27.9 billion of tourist spending in France^{III} - overtaken only by city tourism.

The economic environment for France's tourism industry was difficult in 2002. Between 1990 and 2000 an average growth rate of 43% was recorded for international tourism, a drop of 0.5% was recorded in 2001 and a weak rise of 3.1% in 2002. ^{IV}

Coastal tourism is a seasonal activity for 2-4 months of the year, depending on whether one looks at Southern or Northern France. The coast is the top ranking tourist destination, accounting for 35 % of total nights and the seaside accounts for 26.7% of total tourist consumption on non-business stays for both domestic and international tourists.^V

10.1 Employment trends

France is the only EU country where coastal tourism employment has been studied in detail and the coastal tourism employment in France covers accommodation, catering, cafes, travel agencies, tourist information centres, and tour operators. Total employment in this sector in 2001 was 190,688 – nearly 24,000 jobs more than in 1997 (a growth of 14%).

¹ l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer.

- ^{II} Tourisme Littoral, Tourisme de A a Z, www.equipement.gouv.fr
- III Tourisme Littoral, Tourisme de a a z, www.equipement.gouv.fr

^V l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime*. Ifremer.

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Exhaustive analysis of employment trends in all sectors related to sea or using sea resources

^{IV} Tourisme Littoral, Tourisme de a a z, www.equipement.gouv.fr



Figure 10.1 Employment in coastal tourism sector, 1997-2001

Source: l'Institut Français de la Mer (2003) Cluster maritime francais, poids economique et social de la france maritime. Ifremer.

More than three-fourths of jobs (77%) in the tourism industry are in accommodation and catering. The rest are mainly in cafes, travel agencies, tourist information centres, facilitation and thalassotherapy (sea beauty treatments etc.).¹

Tourism employment in the French overseas territories (Guadeloupe, Martinique, French Guyana, Reunion, New Caledonia, French Polynesia, Mayotte and Saint-martin-et-Miquelon) in 2000 was 49,929.

10.2 **Employment projections**

According to the Tourism Satellite Accounting, travel and tourism industry employment in France is expected to grow from 1.39million to 1.76million between 2006 and 2016 – a growth of 365,900 jobs is expected. As a result employment in coastal tourism sector is also expected to continue its trend of growth.

10.3 Skills and training

The tourism sector in France is characterised by a high turnover of staff. Turnover in the sector is more than 30%, which means that a third of employees leave the sector every year.^{III} This makes it necessary for the sector to recruit 30,000 people annually.^{IV}

^{IV} Ibid,

¹ l'Institut Français de la Mer (2003) *Cluster maritime français, poids economique et social de la france maritime*. Ifremer. ^{II} Ibid.

Rapport sur les diplomes et les formation aux metiers du tourisme, Secretaire d'etat au tourisme, 2003

The following three problems are raised with recruitment and training in the tourism sector in general: the sectors' professions are not valued, nor are they attractive to newcomers, the level of those recruited is low, there is a lack coherence in training in the sector and career and pay opportunities are limited.¹ Other problems in the sector are the lack of a sufficient link between training and employment. Ongoing vocational training opportunities are also lacking in small enterprises where most of those employed in the sector work.

The issues raised about training and qualifications in the sector are a large number of different qualifications, lack of coherence in qualifications as well as a lack of training which addresses the needs of tourism professionals (who consequently are reported to not be interested in many post-A-level tourism qualifications). Inadequacies in the state of language training are specifically pointed out. It is highlighted that the sector should be made more attractive by qualifications (specifically raising the level of qualifications), better accreditation of skills and better pay.

11.0 Marine aggregates

Marine aggregate production in France makes up a little less than 3% of national production of building materials. The total turnover was €25 million in 2001 and the value added was €10 million.^{II} Marine aggregate extraction is seen as an advantage as it is increasingly difficult to access deposits in alluvial aggregates. More applications are being made for extract permits in the Channel region.

Total employment for the sector in 2001 was 300.^{III} For siliceous materials direct employment is estimated to be 200 seamen and 100 on-shore staff (admin, sales and technical duties). Ship-owners who mine calcareous materials work in four companies, which employ about 100 seamen. ^{IV}

12.0 Coastal wind energy

By the end of 2003, wind generators set up on the coast provided about half of all French wind power production.^V However, in spite of significant growth from 2000 onwards, the

^{II} l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer. ^{III} Ibid.

^{IV} l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer.

^V Ibid.

¹ Rapport sur les diplomes et les formation aux metiers du tourisme, Secretaire d'etat au tourisme, 2003

French wind farm facilities continue to lag behind those of European neighbours. The total labour force for wind turbines on coast was 1,200 in 2002.¹

13.0 Navy

In 2004 the French Navy employed 54,656 individuals.^{II}

^I Ibid.

^{II} l'Institut Français de la Mer (2003) *Cluster maritime francais, poids economique et social de la france maritime.* Ifremer.

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