

國際海洋資訊

International
Ocean Information

18

June 2022

雙月刊 | Bimonthly

海洋委員會赴帛琉參與第7屆「我們的海洋大會」
彰顯我國海洋貢獻，成果豐碩

Ocean Affairs Council Participates in the 7th "Our Ocean Conference" in Palau
Highlighting Taiwan's Marine Contributions and Bountiful Results

法國海洋資訊

France Ocean Information



海洋委員會
Ocean Affairs Council

發行



目錄 Contents

發行人語	推動21世紀成為海洋世紀 臺法攜手前進！	01
專題報導	海洋委員會赴帛琉參與第7屆「我們的海洋大會」 彰顯我國海洋貢獻，成果豐碩	02
國際議題	法國與海事挑戰國際政策主張	07
產業動態	法國與離岸風電業的發展：現狀	12
組織焦點	法國海洋部及其主要海洋政策	17
資訊新知	法國海洋開發研究院	22
法規制度	法國海洋自然公園（parc naturel marin français）	27
Letter of Publisher	Working Towards Making the 21st Century the Maritime Century: Taiwan and France Walking into the Future, Hand in Hand!	31
Special Report	Ocean Affairs Council Participates in the 7th "Our Ocean Conference" in Palau Highlighting Taiwan's Marine Contributions and Bountiful Results	32
International Issues	France and the International Agenda on Maritime Challenges	37
Industry Dynamics	France and the Development of the Offshore Wind Industry: State of Play	42
Organization Focus	The French Ministry of the Sea and its Major Maritime Policies	47
Latest News	The French Research institute for Exploitation of the Sea (Ifremer)	52
Regulatory Systems	French Marine Natural Park (parc naturel marin français)	57



推動21世紀 成為海洋世紀 臺法攜手前進！

主任委員：李仲威

第7屆「我們的海洋大會」（Our Ocean Conference, OOC）於今年（2022）4月13至14日舉辦，我國獲主辦國帛琉邀請，以正式政府職銜與會，本期「專題報導」專文介紹此次會議核心理念、我國參與層級提升以及會議綜合觀察，本次會議期間，我國透過主議程的參與及發表，周邊活動的舉辦，海洋承諾的遞交及青年代表的參與，與各國進行密切交流與互動，並向世界各國宣示我國推動海洋事務的決心及貢獻的意願。

我國與法國在海洋研究與技術等方面皆有悠久而密切的合作關係，法國身為歐盟重要成員國之一，在歐盟海洋事務決策方面扮演重要角色。本期重點報導法國的海洋政策與發展，特邀法國海洋事務秘書長辦公室（SGMer）介紹法國與其海事挑戰之國際議程，以及法國在離岸風電產業的發展。今年2月9日至11日，在法國倡議下舉辦的國際海洋高峰會「One Ocean Summit」，提出了保護海洋生態系和促進永續漁業、對抗塑膠污染、對抗氣候變遷的海洋解方、更新海洋治理等4項目標的「布雷斯特承諾」（Brest commitments）；而鑑於歐盟成員國的2050碳中和承諾、以及法國2019年通過的《氣候能源法》（Climate Energy Law），法國海洋事務秘書長辦公室也介紹了在碳中和方案中具備關鍵位置的離岸風電產業發展，包括船長、能源公司、電網營運公司RTE的重要角色，以及公民在離岸風電方面的參與及討論；法國海洋開發研究院（Ifremer）則介紹Ifremer在海洋觀測與監測技術、海洋研究船與水下系統協調能力的重點研究技術，以及廣泛的研究主題和臺法合作交流歷史。「法規制度」則介紹法國除劃設國家公園、Natura 2000、物種保護區、生態保護區、文化遺址、劃設濕地及與其他國家簽訂海域公約外，用以管理面積龐大專屬經濟區（EEZ）的海洋自然公園（PNM）法案。我國與法國合作關係密切，也期望未來在更多海洋事務上交流合作，攜手推動21世紀成為海洋的世紀！

圖說／法國海洋自然公園Mayotte
（位於印度洋）

圖片來源／<https://pixabay.com/photos/mayotte-dzaoudzi-archipelago-2232049/>



海洋委員會赴帛琉參與第7屆「我們的海洋大會」 彰顯我國海洋貢獻，成果豐碩

撰文／李子嘉（海洋委員會國際發展處科長）

蔡依庭（海洋委員會國際發展處科員）

關鍵字／我們的海洋大會、Our Ocean Palau、氣候變遷



圖1／與會各國領袖代表（Heads of Delegation）大合照

圖片來源／大會官方網站Official Photos

「我們的海洋大會」（Our Ocean Conference, OOC）係於2014年由時任美國國務卿 John Kerry（現為美國總統氣候特使；Special Presidential Envoy for Climate, SPEC）所提出之倡議，旨在喚起全球重視海洋對人類發展及環境永續的深刻影響，並號召全球公私部門採取實際行動，善盡保護海洋的責任。OOC與會者包含各國政府元首、部會首長、政商名流，NGOs團體、跨國企業等，透過此一年度性的聚會，進行海洋議題的經驗交流及分享，並凝聚世界各國及公民社會團體的共識。

OOC於2014年於美國華盛頓特區舉辦首屆會議以來，2015年至2019年陸續由智利、美國、歐盟、印尼、挪威舉辦，此次會議為第7屆，由帛琉擔任主辦國，美國為協辦國，主題設定為「Our Ocean, Our People, Our Prosperity」（我們的海洋、我們的人民、我們的繁榮），這也是OOC首次在小島嶼發展中國家（SIDS）舉辦。會議原訂於2020年8月舉辦，後因COVID-19疫情影響，歷經數次延期，最終定於2022年4月13日至14日舉辦。依據大會官方統計，本屆共有來自70餘國代表團的逾600位參與者及150個非國家行為體（non-state actors）參與。

過去由於國際外交及政治因素，我國均以非官方身分，核派學者專家參與；此次獲我友邦帛琉正式邀請，由蔡總統指派行政院環境保護署張子敬署長率外交部、海洋委員會（含海巡署、海洋保育署）、漁業署等機關，以及國際合作發展基金會相關人員，以正式政府職銜與會，相較以往，可謂已取得重大突破。

海洋委員會自2019年起即偕同相關部會著手籌備第7屆OOC與會事宜，籌備時間超過2年，此次指派政務副主任委員蔡清標博士、海洋保育署署長黃向文博士率專業幕僚參團與會。期間透過主議程的參與及發表，周邊活動的舉辦，海洋承諾的遞交及青年代表的參與，與各國進行密切交流與互動，並向世界各國宣示我國推動海洋事務的決心及貢獻的意願。

大會核心理念：「提出承諾、採取行動」

主辦國帛琉總統惠恕仁Surangel S. Whipp Jr.、美國總統氣候特使John Kerry及美國總統Joe Biden進行開幕致詞時均指出：海洋為人類生存所倚，其孕育生命、提供食物、工作機會及能源等，更具有調節氣候的重要功能，然而氣候與海洋的變遷衝擊環境，人類應自省、認清事實並面對問題，而後採取更積極、堅定並創新的行動來改變現狀。

上述的談話內容，即明白揭示了大會的核心理念「提出承諾、採取行動」，大會自創立以來，把全球所面臨的海洋議題，聚焦於6大行動領域（Areas of Action），分別為：

- 強化海洋保護區（Advancing Marine Protected Areas for Communities, Ecosystems, and Climate）。
- 解決海洋污染（Tackling Marine Pollution）。
- 正視海洋氣候危機（Confronting the Ocean-Climate Crisis or Towards an Ocean Solution for Climate Change）。
- 創造永續藍色經濟（Creating Sustainable Blue Economies）。
- 強化永續小規模漁業及水產養殖（Advancing Sustainable Small-Scale Fisheries and Aquaculture）。
- 實現海事安全（Achieving a Safe, Just and Secure Ocean）。

此6大行動領域涵括全球所關注的海洋議題領域，是以，大會的整體規劃包含議程設計、講者邀請、周邊活動等，均以此為架構進行；更重要的是，每屆大會均針對6大行動領域，向全球公私部門募集「承諾（Commitments）」，並請研提者逐年更新執行進度，使大會成為一個以「促進行動」為核心理念的倡議。自2014年至今，大會已募集到來自各國、實體、組織逾1,800項承諾，金額高達1,080億美元，並劃設了500萬平方英里的海洋保護區。單就本屆大會即募集到410則承諾，金額為163.5億美元。

我國高階官員以正式職銜與會，突破歷年限制

海洋委員會自2019年即啟動第7屆OOC參與相關準備作業，並設定此次參與的4大策略目標，包含「爭取提升層級、拓展國際空間」、「擇定優勢議題，強化實質參與」、「遴選優秀代表，參與青年活動」及「申辦周邊活動，擴大參與面向」。經偕同各部會共同推動，各項目標均順利達成，成果豐碩。

於「提升參與層級」部分，本次我國由行政院環境保護署張子敬署長率團，海洋委員會蔡清標政務副主任委員、外交部田中光政務次長、海洋保育署黃向文署長、國際合作發展基金會項恬毅秘書長等部會級高階官員參與，並納編漁業署、海巡署等專業幕僚組成20餘人之代表團，相較過往僅能由學者專家以私人身分參與，已大幅突破過往參與情形。

「強化實質參與」部分，海洋委員會此次統合相關涉海部會，針對6大行動領域共完成遞交14項承諾（Commitments），預算規模高達3.84億美元；此外，另邀請並促成宏碁（Acer）股份有限公司提出1項解決海洋污染之承諾，以響應大會呼籲公私協力之精神。

我國代表成員除全程參與主議程（Plenary）外，主辦方並邀請張署長及蔡政務副主任委員於大會第2天進行發表。張署長在「解決海洋污染」場次針對我國環保政策及成果進行說明，包含陸源垃圾管理、執行海岸廢棄物清理、源頭漁業廢棄漁網具管控、河川陸源垃圾攔除等一系列「向海致敬」政策，並展示我國廠商新光合成纖維股份有限公司利用帛琉海廢料製成的00C官方島衫，展現我國追求環境永續發展的決心；蔡政務副主任委員於「實現海事安全」場次代表我國提出該行動領域之承諾，包括推動執行「智慧航行安全服務與發展計畫」、加強海上救生救難能量、並打擊以毒品販運為主的跨境犯罪等，彰顯我國推動海事安全的努力及貢獻。由於大會議程僅有兩日，全球公私部門代表無不競相爭取於主議程曝光機會，本次主辦方給予我國兩名官方代表上臺發表機會，實為高規格之特殊禮遇，亦是對我國海洋貢獻的肯定。



圖2／海洋委員會蔡政務副主任委員於「實現海事安全」行動領域發表我國承諾

圖片來源／大會官方網站Official Photos

「參與青年活動」部分，培育青年積極投入海洋事務，為海洋委員會重點工作之一，由海洋委員會遴選並推薦的優秀青年代表－國立臺灣大學電機工程學系陳懷璞同學，自110個國家490位全球青年中脫穎而出，獲選為大會青年代表（Youth Delegate），成為我國首次參加00C的青年代表，與庫克群島、帛琉、馬爾地夫、巴拿馬等國青年代表交流，並與聯合國、美國NOAA及NASA等高階官員對話，為我海洋事務國際交流向下紮根。

「申辦周邊活動」部分，由於本屆大會係首次由小島嶼發展中國家主辦，為彰顯氣候變遷對海洋環境及沿海社群的嚴峻挑戰，以及海洋廢棄物污染導致的生態衝擊，我國此次共辦理4場周邊活動，包含2場靜態展覽以及2場周邊會議。靜態展覽部分，係由海洋委員會與國合會合作辦理，1場以「Taiwan Ocean Action Exhibit-Blue Ocean Green Future」為題，呈現臺灣於海洋廢棄物治理的成效，並獲大會主辦方核准為官方周邊活動，於帛琉國家體育館展出；另1場則以「小島嶼國家發展零排放零廢棄之循環經濟」（Toward Zero Emission and Zero Waste Future）為題，於帛琉老爺酒店舉辦展覽，並邀請帛方政要、貝里斯、聖文森、聖克里斯多福駐臺大使、美、日等國公私部門代表共約70餘位共襄盛舉；周邊會議部分，國合會與美國國際開發總署（USAID）及帛琉政府共同舉辦「小型島嶼國家氣候韌性及永續發展」會議，國合會亦與南島民族論壇合辦「以自然為本解決方案－南島民族觀點」，邀請我國專家學者包括海洋保育署黃向文署長、東華大學童春發榮譽教授等擔任與談人，分享我國觀點與建議。



圖3／海洋委員會蔡政務副主任委員與貴賓於周邊展覽前合影
圖片提供／海洋委員會國際發展處科長李子嘉

於大會主要活動以外，駐帛琉大使館安排代表團赴洛克群島（Rock Island）進行生態參訪及綠蠵龜放流活動。本次放流的綠蠵龜為帛琉海警局於2021年於洛克群島發現，經我駐帛琉技術團水產養殖計畫中心育成，於2022年4月成長至適合放流回海的體型，係我國協助帛琉推動海洋生態保育之貢獻。另為展現臺帛深厚邦誼，本會海巡署派遣「台南艦」與帛琉海巡船艦協同執行海上維安任務，並於2022年4月16日上午靠港舉行升旗典禮，場面莊嚴隆重，亦為臺帛兩國海巡合作寫下新的里程碑。

表1／我國於第7屆「我們的海洋大會」6大行動領域承諾概要

行動領域	承諾概要
強化海洋保護區	1. 推動《海洋保育法》立法，並已建立「臺灣海洋保護區整合平臺」 2. 推動「臺灣海域生態環境守護計畫」
解決海洋污染	1. 執行「向海致敬-海洋清潔維護計畫」並推動「海洋污染監測與應處」計畫 2. 推動刺網網具標示管理計畫 3. 減用一次性塑膠並使用消費後再生塑料（PCR）及流向海洋的廢塑料（OBP）
正視海洋氣候危機	1. 落實推動「國家氣候變遷調適行動方案」相關計畫 2. 發展「海氣耦合預報技術」
創造永續藍色經濟	1. 通過「海洋產業發展條例」，促進海洋產業升級 2. 優化商港設施及服務效能 3. 完成「海域遊憩活動一站式資訊服務平臺」
強化永續小規模漁業及水產養殖	1. 加強臺灣遠洋船隊的漁業管理並打擊非法、未報告及不受規範漁撈活動 2. 推動「友善釣魚行動方案」，成立「釣魚管理平臺」
實現海事安全	1. 實踐人道救援之普世價值，強化災防救難能量 2. 打擊海上跨境犯罪 3. 執行「我國智慧航安服務建置暨發展計畫」

資料來源／6大行動領域承諾內容由相關部會提供，本表由筆者摘錄彙整

會議綜合觀察

一、從小島嶼發展中國家（SIDS）的視角出發，強調海洋和氣候議題之連結

自聯合國政府間氣候變遷專門委員會（IPCC）於2019年發布之《氣候變遷下的海洋與冰凍圈特別報告》後，海洋於氣候變遷議題中之重要性愈受重視。此次大會「氣候變遷」行動領域之用語，亦特意將「海洋」元素加入並改寫為「Confronting the Ocean-Climate Crisis」。帛琉惠恕仁總統亦在致詞強調「島嶼國家處在面臨氣候及海洋雙重挑戰的最前線，藉由舉辦本屆大會，帛琉要向世界傳達

我們在這些挑戰前有多麼脆弱」。如何保護海洋使其恢復健康及韌性，發展以海洋為基礎的氣候解決方案（ocean-based climate solutions），成為貫穿本屆大會的核心概念。

二、重視以原住民族為首（indigenous-led）的海洋保育觀念

保護海洋除了需要跨國、跨政府、跨部門間的通力合作，跨族群及跨年齡層的參與也是本屆大會的亮點。除了開幕儀式上的傳統表演外，於正式議程邀請東加籍歌手Mia Kami現場演唱自創歌曲Rooted，希望能為太平洋及此地區的人民帶來希望並強調自古以來與海洋的連結。另大會安排「以原住民族為首的保育」專題講座，其他行動領域場次亦邀請具有原住民族血統的主持人及與談人，分享原住民族的智慧、歷史、文化等想法，可見原住民族與海洋的連結密不可分。

三、「提出承諾、採取行動」大會核心理念藏在細節裡

陸源垃圾是海洋污染的主要來源之一，小島嶼發展中國家嚴重受到海洋廢棄物的影響。主辦方在許多小地方帶頭落實大會的核心理念，包含大會不提供紙本資料、不販售紀念品、輕食及飲用水只能在補給小站領取，且均使用可回收材質，不使用塑膠製品。除了在大會之外，官方閉幕酒會同樣不提供任何塑膠餐具，選用樹葉及竹叉等天然素材供賓客取食，避免過多非必要的包裝，具體實踐減少使用一次性塑膠以達源頭減量的承諾。

結語

本次大會為近年我國極少數得以公平與合理待遇參與之國際多邊會議場域，充分彰顯了臺帛兩國長久以來的深厚邦誼，而在各部會把握機會、通力合作下，無論在外交、政治或海洋專業領域，均獲得豐碩成果；下一屆大會預計於2023年3月由巴拿馬主辦，巴拿馬也預告「透明」（transparency）將是下一屆大會的重要元素，並鼓勵參與者提出嶄新的承諾，支持透明漁業及海上運輸，以創新科技及科學數據打擊IUU漁撈行為、過度捕撈及海洋資源耗損等問題。海洋委員會未來將持續積極爭取平等參與國際會議之機會，推動多邊國際交流，厚植友我國家人脈，累積國際參與動能。

參考資料

[1] Our Ocean Conference

<https://ourocean2022.pw/> (May 04, 2022)

[2] Global Fishing Watch: Torch Passed to Panama for Major Ocean Conference

<https://globalfishingwatch.org/news-views/torch-passed-to-panama-for-major-ocean-conference/> (May 04, 2022)

法國與海事挑戰國際政策主張

撰文／Denis Robin（法國海洋事務秘書長）

中文翻譯／萬象翻譯股份有限公司

關鍵字／一個海洋峰會、布雷斯特承諾

法國擁有全球第二大海域，伴隨而來的是其國際海事政策主張的獨特責任。其中一些議題會在未來幾年內變得更加重要。

海洋是食物、能源和原料的來源，旅遊、交通和貿易的媒介，可以為許多全球政策挑戰提供解決方案。然而，海洋並非取之不盡用之不竭，也會受到破壞。人類活動對陸地造成壓力，將危險的污染物（包括塑膠廢棄物）排入海洋，向大氣排碳，導致海洋暖化和酸化，進而破壞生物多樣性，或讓海平面上升，威脅全球的海岸。

海洋覆蓋地球表面的71%以上，對全球氣候系統至為關鍵。它每年吸收人類排放到大氣中的CO₂達25%以上，並提供50%地球上產生的氧氣。海洋也吸收90%以上的溫室氣體（GHG）排放熱量，防止我們呼吸的空氣變暖，並在氣候調節中發揮重要作用。

2021年世界海洋評估（WOAII）是聯合國海洋環境狀況（含社會經濟方面）全球報告和評估經常程序第二輪的主要成果。這份報告更新了第一次世界海洋評估的結果，提供來自300多名專家對於海洋環境狀況的科學資訊。此研究對於海洋提供生態系統的效益減少提出警告，聯合國秘書長表示：「海洋提供的效益越來越受到人類行為的破壞」，他將調查結果定調為必須警惕。此外，現今90%的世界貿易，也就是我們每天的消費物資，都是透過海洋運輸。因此，全球化造成對世界主要海上航線安全的強烈依賴，這些航線通過的海峽如果發生事件，可能會中斷交通。

這就是法國加強打擊海盜和恐怖主義等直接威脅的原因，而且以確保尊重船舶自由航行的原則為優先要務。為了領導和協調政府海事政策的發展，法國總理於1995年設立專職的海洋事務秘書長，其職責是提出行動和決策，並確保法國海事政策的實施，橫向與各部會在其職權範圍內商議海洋主題。

最近，在法國總統的倡議下，國際海洋峰會於2022年2月9日至11日在布雷斯特舉行。「一個海洋峰會」（One Ocean Summit）為海事國際議題提供強大的政治動力，特別是成功結束對海洋有影響的多邊談判，並為聯合國海洋會議（里斯本，2022年6月底）提供關注。因此法國表示，願意將世界在保護海洋方面的共同責任轉化為具體行動和承諾，以提高國際企圖心。峰會的目標確實是為提高國際社會對於減少人類對海洋壓力的承諾。

國際海洋峰會和即將舉行的2022年海洋保護多邊會議，為海洋國際議題帶來強大的政治動力：「2022我們的海洋大會」（帛琉，2022年4月13日至14日）、國家管轄範圍以外地區海洋生物多樣性（BBNJ）的第4輪談判（2022年3月）以及聯合國海洋會議（里斯本，2022年6月27日至7月1日）。

這次峰會是同類峰會中的第一次，與聯合國、世界銀行以及衆多公私部門和民間社會合作夥伴共同策劃，匯集了41個國家的民間社會和企業代表。（41國：德國、巴貝多、加拿大、中國、賽普勒斯、哥倫比亞、葛摩、剛果、韓國、哥斯大黎加、象牙海岸、克羅埃西亞、埃及、西班牙、美國、法國、加彭、迦納、希臘、印度、愛爾蘭、冰島、義大利、日本、馬達加斯加、馬爾他、摩洛哥、墨西哥、摩納哥、納米比亞、挪威、帛琉、巴拿馬、巴布亞紐幾內亞、葡萄牙、英國、塞內加爾、塞席爾、坦尚尼亞、東加、突尼西亞。）



圖片來源／Département vidéo de la Présidence de la République

高層級會議通過的「布雷斯特承諾」（Brest commitments）分為4個整體目標：一、保護海洋生態系統和促進永續捕撈；二、對抗污染，尤其是塑膠；三、海洋氣候變遷的解決方案；四、更新海洋治理。

保護海洋生態系統和促進永續捕撈

一、2030年前，新規劃的海洋保護區將達到海域的30%

規劃保護區是保護生物多樣性的重要支柱。在此架構下，30多個新國家加入了2021年1月在「一個地球峰會」上發起的自然與人類高企圖心聯盟，代表現在有84個國家共同致力於在2030年前保護全球30%的陸地和海洋。

此外，法國、義大利、西班牙和摩納哥承諾降低和限制船舶航速，以保護地中海的海洋生物多樣性，哥倫比亞宣布，預計在2022年年底保護其30%的專屬經濟區。法國表示，其海洋保護區已覆蓋領土的33%，尤其是法國南部和南極保護區的擴大。

二、結束過度捕撈，核實、控管和懲處非法、未報告及不受規範漁撈活動

非法、未報告及不受規範的漁撈（IUU）占全球漁獲量近五分之一，破壞了永續管理魚類資源的努力，通常伴隨著漁民的安全和工作條件高度惡化。14個參加「一個海洋峰會」的國家，承諾在幾個方面加強打擊非法捕魚：

- 6個國家承諾在2022年10月的最後期限之前，核准國際海事組織的《開普敦協定》，讓該協定生效並為漁船制定安全標準。
- 2個新國家將核准聯合國糧農組織港口國措施，以充分監測登陸港的捕魚活動。
- 根據2008年歐盟法規，歐盟的幾個成員國已承諾動員其國家海軍執行外部任務，以加強對非法捕魚的監督。

為了打擊非法捕魚，預計會有新的承諾：隨著2022年第12屆世界貿易組織（WTO）跨部門會議的召開，法國總統馬克宏（Emmanuel Macron）呼籲WTO在2022年禁止所有助長非法捕魚的補貼。這項不涉及過度捕撈的呼籲，加上關於生態系統保護和永續利用的SDG14具體目標6，將在里斯本海洋會議上進行評估，以禁止任何助長過度捕撈的補貼。

對抗塑膠污染

每年有900萬噸塑膠傾倒進海洋，其中80%來自海岸和河流。對抗污染是辯論的核心，因為它影響到整個海洋，對海洋生態系統和人類造成直接影響。納米比亞總統Hage Geingob代表身為這些污染主要受害者的發展中國家發言：「我們不生產塑膠，但後果我們首當其衝。」

為了因應塑膠污染的挑戰，各國呼籲通過一項具有法律效力的塑膠污染公約，該公約已經討論了幾個月，在格拉斯哥舉行的聯合國氣候變化綱要公約第26屆締約方大會（COP26）以及COP22《巴塞隆納公約》，強調了該公約的重要性。這些談判的啟動會在2月28日至3月2日於肯亞奈洛比舉行的第5屆聯合國環境大會（UNEA）上進行討論。馬克宏表示，這樣的倡議「會提供一個具有效力的國際架構，使這一承諾成為終結拋棄式塑膠的真正公約」。

在峰會上，歐洲復興開發銀行（EBRD）和歐洲投資銀行（EIB）宣布與法國、德國、義大利和西班牙的開發銀行聯手制定清潔海洋計畫，此計畫是致力於減少海洋塑膠污染的最大計畫。他們對打擊塑膠污染的財政貢獻預計會加倍，在2025年前達到40億歐元。

峰會也讓希臘、義大利、哥倫比亞、韓國、巴黎市和希臘中部海洋地區加入「全球對新塑膠經濟的承諾」：該倡議目標為加速轉型為循環經濟。印度和法國聯合發起了一項消除拋棄式塑膠污染的多邊倡議。

各種因應全球變化的解決方案

一、減少海運對環境的影響

在世界貿易的推動下，海運的強勁成長需要迅速有力減少其滋擾和相關損害。為實現這一目標，22家歐洲船舶所有人致力於新的綠色歐洲海運標籤，在8個領域採取非常具體的措施：水下噪音、污染空氣排放、溫室氣體排放、水生入侵物種、廢棄物管理、油污排放和船舶回收。

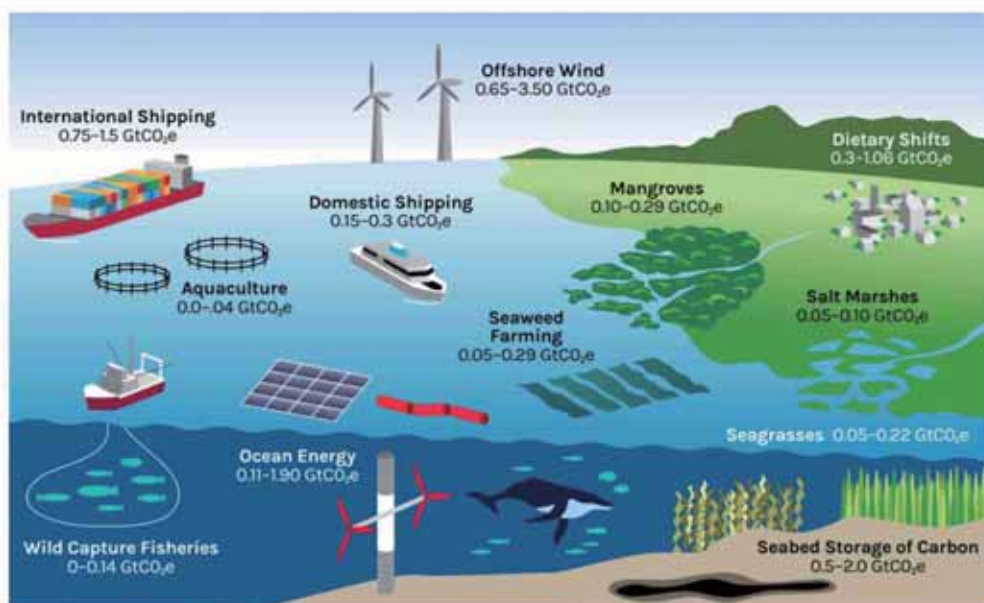
為了減少空氣污染，所有地中海國家和歐盟已承諾要求國際海事組織於2025年1月1日在整個地中海設立一個低硫排放區。法國、西班牙、義大利和摩納哥由於有大量鯨類動物，今年夏天也將要求國際海事組織建立高度脆弱海洋保護區，以限制航行速度，進而減少碰撞。

二、保護和恢復海洋生態系統

海洋在因應和適應氣候變遷方面發揮著決定性作用。一些海洋和沿海生態系統（鹽草地、水下草地或紅樹林）具有吸收和儲存大量碳的能力。

法國和哥倫比亞發起了一個國際藍碳聯盟，將匯集該領域的國家和多邊行為體，根據共同的嚴謹方法，提供資金幫助沿海生態系統的恢復。

在峰會期間，許多國家元首和商界代表強調海洋解決方案在有效因應和適應氣候變遷方面的潛力。雖然島國（斐濟、東加、帛琉）重申海平面上升和極端事件對其生活方式和文化的巨大影響，但已提出恢復和保護沿海生態系統，作為緩解和適應氣候變遷的必要措施。太平洋島國論壇秘書長Henry Puna回顧太平洋島國元首在2021年8月簽署的《面對氣候變遷相關海平面上升的海域保護宣言》架構內的主張。在這一高層級會議之前，Sea'ties論壇也作為「一個海洋峰會」的一部分舉行，匯集來自全球沿海城市的30多名市長和州長，從斯德哥爾摩到曼谷、雅加達和拉哥斯。在此之際，他們簽署了海洋關係宣言（Sea'ties Declaration），呼籲各國政府和國際社會強化緩解和適應措施，以限制海平面上升對沿海城市、領土及其社群的影響。



圖片來源/Pride Advertising Agency Ltd.

更新海洋治理

「一個海洋峰會」是一系列以海洋為中心的國際活動的起點，包括6月在里斯本舉行的聯合國海洋會議，以及秋季由埃及主辦的COP27。

在這一成就的基礎上，法國和哥斯大黎加提議在2024年共同舉辦下一屆聯合國海洋會議。

數位革命是建立海洋綜合模型的機會，涵蓋物理、化學、海洋生物和人類活動。在峰會期間宣布採用的海洋「數位孿生」應能為政策決策提供資訊並監測其影響，使海洋經濟能以尊重生態系統的方式發展，並促進與利害關係人和大眾的對話。

歐盟致力於開發數位海洋孿生，它將為歐洲藍色成長和全球治理匯集知識和測試行動方案。

聯合國教育科學及文化組織承諾，在2030年前繪製出至少80%的海床。

在3月於紐約舉行的國家管轄範圍以外地區海洋生物多樣性（BBNJ）保護與永續使用協議第4次跨政府會議之前，各國元首重申在年底前商議出運作協議的急迫性。有鑑於此，歐盟27個成員國和16個第三國宣布啟動「公海條約高企圖心聯盟」。



圖片來源／Pride Advertising Agency Ltd.

法國與離岸風電業的發展：現狀

撰文／Anne Légrégois（法國海洋事務秘書長辦公室計畫經理）

中文翻譯／萬象翻譯股份有限公司

關鍵字／離岸風電、氣候能源法

科學界一致認為有採取行動應對氣候變遷的急迫性，2021年秋天政府間氣候變遷專門委員會（IPCC）出版的最新報告[1]，提醒我們必須迅速減少溫室氣體排放，以限制氣候變遷可能的災難性影響。聯合國氣候變化綱要公約第26次締約方大會（UNFCCC-COP26 [2]）於2021年11月在蘇格蘭格拉斯哥舉辦，為未來十年帶來新的承諾和行動。擺脫化石燃料所需的轉型必須在短短3年內完成，並在2030年前大幅加速。

由於一國在全球排放量中所占的比例極小（法國約為1%），有些人可能會認為單一國家為履行氣候承諾所做的努力徒勞無功或微不足道。然而，與所有工業化國家一樣，法國人均排放量仍高於世界平均，在考慮進口的碳影響（「碳足跡」）時更是如此。

歐盟成員國（以及法國透過2019年《氣候能源法》）承諾在2050年前實現碳中和的一個重要因素是，歐洲的離岸風電裝置容量目前為12GW，根據歐盟的企圖心和預測，在2050年前必須增加到300GW，占能源總產量的20%，而目前這一比例為3%。在這300GW中，法國的潛力為49~57GW。法國正準備積極參與這一歐洲目標。

法國已經探討不同方案，以在2050年實現碳中和。這些選項具有一些共同特徵（能源用量更低、電力比例更高、使用再生能源），但在使用變化率及其按用途分布、工業發展、核電的未來以及氫的角色方面，也有著顯著差異。

2021年10月，法國電網業者Réseau de Transport d'Electricité（RTE）最終定案並發布題為「Energy Futures 2050」的分析報告[3]，以滿足記錄法國能源脫碳可用選項的需要。這份報告說明能源生產系統的技術演變，將相關成本量化，詳細說明最廣義的環境後果，並說明對生活方式的影響。

報告中已經詳細說明幾種情境，每種情境都為離岸風電提供重要或非常重要的位置。其實風能已視為脫碳的來源，透過允許能源組合多樣化發展，也是提高電力系統穩健性及彈性的一種方式。

現在正是一個轉折點，同時引導加速能源政策走向脫碳和連貫而有效的產業政策。

國內市場和法國參與者的肯定

10年來，法國一直支持離岸風電的發展。2011年、2013年和2016年共啟動了3個離岸風場招標，總預計裝置容量為3.6GW，分為7個專案（東部海峽-北海4個，北大西洋-西部海峽3個）。此外，

2016年也核准了4個浮動式風場。目前，針對商業風場發起的招標要求為2028年至2029年之間的裝置容量為2.5GW（海峽為1GW風場，南布列塔尼為250MW浮動式風場，地中海為兩個250MW浮動式風場，南大西洋為500MW至1GW風場）。

一、2022年制訂的新路線

2022年，法國制訂了一個明確而堅定的目標，在2050年前將離岸風電裝置容量達到40GW，代表其領海或專屬經濟區設立約50個風場。這個新路線是根據RTE的報告[3]制訂的，正如法國生態與團結轉型部部長在2021年10月的演講中所述，該計畫指示，將不計代價提升離岸風電的裝置速度，從每年1GW增加到2GW，以便在2050年前安裝和試俾2,000至4,000座離岸風機。

這就是離岸風電產業發展的兩個方向如何加速發展：一方面，在法國建立離岸風機生產能源的市場，另一方面，與該市場本身相關的產業（也呈出口導向）。這種部署及其必要的加速，為法國海事領域的每個參與者以及離岸風電相關的法國商品和服務出口國提供了機會。

二、有哪些離岸風電參與者，滿足哪些需求？

港口是真正的工業工具，是固定式和浮動式離岸風場部署及營運維護的動力。法國港口正準備增加表面積，專門用於建造和存放風機及其固定式或浮動式基座。這同時涉及土地面積（海埔新生地）和水域。法國正努力推動的必要投資和授權是個挑戰。對於陸上和浮動式風電，港口是一個關鍵的物流樞紐。

船舶所有人是其他關鍵角色，他們面臨的挑戰，是能夠在招標過程早期就動用專業船隻的投資能力。如果能源和海洋空間規劃能提供盡可能遠的上游可見性和已知時程，那麼促進投資就更容易，這就是法國正在做的事。

法國船舶所有人已經在法國市場以外的離岸風電服務中，展開以下船舶所有人活動：人員往返變電站和風機，進行離岸安裝維護；輕型航海工具整備；鋪設電纜和光纖；電纜保護；維修工作；CTV（人員轉運船）的建造和供應。風場離海岸越遠，對於能夠容納船上人員的DSV（多用途船）和SOV（服務作業船）以及進行水下作業或檢查服務的ROV（遙控載具）需求就越大。船隊正變得更加環保，以符合風場本身的目的。浮動式風電為該產業帶來許多新的視角，使用比陸上風電「更輕裝」的船隊（也是一個比離岸風電業更早存在的船隊，Bourbon是油氣業歷史悠久的參與者，也是法國的重要參與者，在安裝浮動式風場方面處於領先地位：安裝錨和電纜、拖運，並已在葡萄牙和蘇格蘭完成幾個專案）。

風機與浮動裝置的整合可以在陸地、港口完成，現場運輸將比使用起重船調動更多的機動和支援船隻。現場配備風機的浮動裝置定位和錨定以及動力電纜的連接也將需要「更輕」的船隻。這些船隻將更加標準化（貨運協助、海上中間結構建造），並將更容易利用現有和經改造的法國船隊。在法國市場上，我們仍然需要開發專門用於研究活動和風機安裝區域進行資料蒐集的船隊，用於運輸要安裝

在港口或現場之組件的船隊，港口和海事服務是浮動式風電價值鏈的關鍵。最終，將需要一支專門用於升級改善然後拆除風場的船隊。

無論如何，預計在船舶數量方面會有大量動員，並會有大量的相關船舶和駁船建造。這可能是法國造船廠的發展機會，但需要全球造船業共同參與。關於後者，如果展望2030年和全球貨船船隊改朝換代的大背景，我們可以問問自己，供給能否滿足需求（中國船廠越來越致力於建造國內的船隊）。

能源公司也是成功的關鍵：務必要對產業不同部門的生態系統有深入的相互瞭解。工程公司和製造商也透過基座的鋪設和浮動、牽引、錨固、子組件的安裝、電纜放線、重型貨件的吊掛和安裝以及安裝的試俾動員起來。

法國電網業者RTE是離岸風電部署的關鍵參與者，負責將風場連接到電網，包括網路開發和不同園區的互連。再生能源的整合、電力市場的發展和區域合作的建立，需要網路設計和營運的深度調適。電力系統適切的法規制度對於這些變革的成功實施至為關鍵。RTE致力於國際市場的實體（RTE International）擁有專門協助主管機關（能源部、主管機關、電網業者）設計或開發電力部門法規制度以使其適應新條件的團隊。憑藉在歐洲和全球的豐富經驗，RTEi有能力找到適合每種情況的解決方案。

三、在地化：與臺灣的共同目標

在臺灣，經濟部能源局（BoE）回應產業意見，自初稿以來已多次修改在地化要求，但似乎仍是開發商面臨的主要問題。例如，這造成要求海洋工程和設計工程中的所有經濟活動都由當地進行。

在法國，以及更廣泛的歐洲，正展開同樣的工作，以鼓勵歐洲內的在地化，一方面降低這種脫碳能源的成本，並在歐洲領土創造盡可能多的就業機會，有利於該部門持續發展的結構。

確認法國離岸風電部門的存在：浮動式風電的機會

一、從陸上式到浮動式

在歐洲風電方面，德國、丹麥、荷蘭和英國積極的公共政策使非法國價值鏈在安裝活動中占據主導地位，這要歸功於離岸風電專門船隊和在北海的繁重工作中獲得的經驗。

然而，法國現在特別支持浮動式風電。國內市場依賴於它，一方面是為了提高當地居民的接受度，另一方面是在對於陸上式風電太深的地區安裝風場，尤其是在地中海地區，亦有相當工業出口機會。

法國離岸風電業（尤其是浮動式風電）提供工業解決方案並蒐集參考資料，無論是設計和工程供應商（如致力於開發多用途、多專案平臺，與氫氣生產相結合，以及與設備製造商制訂維護策略），專案開發商、建造商（包括但不限於以下公司：Chantier de l'Atlantique (CDA) 離岸平臺(OSS)基座和上部結構建造商、Nexans、CNB、chantier Allais MSI、Alumarine、Ocea、

Socarenam、Piriou、Navalu) 或船舶所有人(例如以下公司: Atlantique Maritime Services (AMS) Lamanage、VDC Offshore、Chambon、CERES、Jifmar Offshore Services、Finist'Mer、Louis Dreyfus Armateur Group、Prolarge、TSM集團)。他們得到了參與法國和國外專案之國際參與者的計畫支持。

目前為止，法國MRE部門擁有近5,000個直接工作機會，投資額達15億歐元，營業額達8.33億歐元。

二、法國加快脫碳能源發展的策略有利於浮動式風電

如同法國總統馬克宏在「一個海洋峰會」開幕前一天所宣布的，浮動式風電的發展將成為許多法國公司實現業務多樣化發展的機會，並將成為法國在2050年實現40GW離岸風電裝置容量目標的主要槓桿之一。2020年11月19日，歐盟執委會發布了其海洋再生能源長期策略。雖然目前歐洲成員國海岸的裝置容量只有12GW（其中絕大多數是風電），但提出的目標企圖心極強：在2030年前必須安裝60GW的海洋再生能源，在2050年前必須安裝300GW。由於深度和空間化方面的限制，此容量很大一部分將使用離岸浮動式風電技術。

浮動式風電仍處於商業前發展階段，但有幾個因素顯示，2020-2030年期間將出現重大發展：

- 預計生產成本的下降速度將快於陸上式風電，尤其是由於風機尺寸的快速成長以及參與者對技術的信心增強；
- 藉由去除海床深度的障礙，大面積開放離岸風電開發。作為法國2030計畫，尤其是「先進能源系統技術」加速策略的一部分，近10億歐元將用於在光電、浮動式風電、能源網路和加速再生能源工業化領域開發創新解決方案。

三、法國在部署浮動式風電方面有哪些優勢？

浮動式風電的強勁發展將引發一場工業化競賽，使許多法國公司有機會使其舊有活動多樣化發展，即石油和天然氣、海洋建設、開發商／能源公司。由於在法國2030計畫架構內資助4個試辦風場計畫以及預計於2022年和2023年核准首座商業浮動式風場，法國現在是商業浮動式風電發展最先進的國家之一。

然而，法國仍然需要利用這一定位，在本土發展大規模的浮動式風電產業。此產業的存在將使法國能夠依賴其自身重要的工程和生產能力，其中已經包括離岸風電的高價值部分：開發和研究、機艙和葉片（世界上最大的風機葉片是在法國建造的），以及變電站和電纜的電氣工程。目前全產業鏈共有460家企業，為產業進一步發展做好準備。

「先進能源系統技術」加速策略將使創新專案的融資和法國港口的發展實現。此策略目的為支援新一代浮動裝置的開發。這些新概念在風機、浮動支架、錨固和輸出電纜之間整合了高度的水-空氣動力耦合，是降低浮動式風電成本的主要方法，使其在2030年成為可行且具有競爭力的解決方案。

法國致力於浮動裝置的建造或組裝以及碼頭安裝風機方面，為法國浮動式風電產業的發展做出貢獻。這一發展應該使目前依賴化石燃料的某些港口能夠多樣化發展，並轉向再生能源。作為第一步，法國將資助編制可能進行浮動式風電活動之港口和土地的清單。在第二階段，法國將幫助資助改造港口基礎設施的專案，以提供浮動裝置工業生產和組裝能力、碼頭區風機的下水能力和安裝能力。也將支援用於裝配浮動裝置的工業場地和浮動裝置下部結構或子組件的工廠專案。

技術構建區塊的支援目的為加速降低成本。此策略可以支援開發更適合浮動式風機的更強力風機、開發無稀土發電機、輕型機艙和可回收葉片。還可以支援直流連接解決方案、浮動式變電站和動態高壓電纜的開發，並支援提高離岸風場（尤其是浮動式風場）接受度的專案。

沒有接受度就沒有離岸風電：公共辯論的經驗

比較當地沿海居民和安裝風場專用海域使用者的接受度問題是必要的。更重要的是，最初產生的當地就業機會有時會受到譴責，以及對美觀和海洋環境損害的譴責。相關區域的使用衝突也在預料之中，公共辯論不斷受到特別關注。

在法國，對於每個離岸風電專案，法國全國公共辯論委員會（CNDP）的任務是策劃大眾參與。自2018年以來，法國國家服務於可信賴社會的法律，即「ESSOC法」，由競標程序上游的國家提出。因此，大眾應儘早參與專案的定義，尤其是得知有關風場位置及其離岸連接的決策。

在這些辯論之後，法國地方公共辯論委員會（CPDP）製作一份報告及評估。國家提交一份報告回應，詳細說明從公共辯論中獲得的經驗教訓，並具體說明將提供的回覆。

2020年關於加速和簡化公共行動（ASAP）的法律，規定在數年內就在同一海岸線上開發多個離岸風電專案展開公共辯論的可能性。

從研究離岸風電專案接受度的方式，到跨能源規劃和海洋空間規劃以協調受影響地區使用的能力，公共主管機關和開發商每天都面臨成功和有效進行設計、建設和維護離岸風場專案的挑戰。

參考資料

- [1] IPCC Sixth Assessment Report (n.d.), Climate Change 2022: Mitigation of Climate Change.
<https://www.ipcc.ch/report/ar6/wg3/>
- [2] United Nations Framework Convention on Climate Change (n.d.), Conference of the Parties (COP).
<https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop>
- [3] RTE (Oct. 2021), FUTURS ÉNERGÉTIQUES 2050: Principaux résultats.
https://assets.rte-france.com/prod/public/2021-10/Futurs-Energetiques-2050-principaux-resultats_0.pdf

法國海洋部及其主要海洋政策

撰文／鄧佳樺（法國巴黎第十大學社會學博士、國立高雄科技大學秘書室公關中心專案經理）

丁國桓（國立高雄科技大學海洋事務與產業管理研究所助理教授）

關鍵字／海洋部、公共政策、永續發展

法國海洋部（Ministère de la Mer）成立於1981年密特朗總統（François Mitterrand）時代，爾後每任總理組閣時，歷經多次海洋事務權責調整，除了由不同等級之內閣成員擔任首長或代表，亦曾發生多次間隔數年無相關內閣的情況[1]。2017年5月15日法國總統馬克宏（Emmanuel Macron）任命菲力普（Édouard Philippe）為總理，前政府的交通海洋暨漁業國務秘書（Secrétaire d'État aux Transports, à la Mer et à la Pêche）維達利（Alain Vidalies）卸任後，便由生態與團結轉型部（Ministère de la Transition écologique et solidaire）來承擔海洋事務職責，直至馬克宏總統於2019年12月法國海洋經濟大會以及2020年6月14日的電視演說中，提及海洋策略的重要性[2]，海洋部才重新被納入新任總理卡斯特克斯（Jean Castex）的內閣名單中。2020年7月7日，出生於聖馬羅（Saint-Malo）海濱城市，時任3年海外事務部部長的潔哈汀女士（Annick Girardin）正式被任命為海洋部部長。儘管法國海洋部的權責經歷多變過程，但身為歐盟重要成員國之一的法國，其對歐盟海洋事務的決策扮演至關重要的角色。本文透過大量法文相關文獻，嘗試針對法國海洋部的職責、組成以及其主導重要之海洋政策進行介紹，期盼本文內容能提供國內對海洋事務感興趣者參卓。

嶄新的法國海洋部，職責是什麼？

法國現任海洋部部長為潔哈汀，於此之前僅有兩位海洋部長：勒潘塞克（Louis Le Pensec），任期為1981至1983和1988年，以及接替其職位的梅立克（Jacques Mellick）作為海洋委派部長（1988-1991年）[3]。前者因總理提議他成為隸屬交通部長下的國務秘書而於1983年辭職，在海洋部的回歸後，他強調一個能完整行使職權的部長，和隸屬於總理或受他部部長、國務秘書之管轄，有著本質上的差異。坎佩爾萊（Quimperlé）市長蓋爾涅（Michaël Quernez），同時也是布列塔尼碼頭協會主席兼漁業與遊憩聯合工會主席表示，海洋部長是一個橫向與跨部門的職位，海上活動與交通、生態、能源轉型、資源、領土規劃以及旅遊業有關，這正是需要一個海洋部長的意義所在。

正如潔哈汀上任宣言所述：「法國擁有超過1,100萬平方公里的海洋專屬經濟區，超過39萬個海洋工作職位，其生物多樣性占了全球生物多樣性的10%，因此接任海洋部長將面臨極大的挑戰」（圖1），外界也相當關注新部長如何帶領海洋部。基此，她首先提出重建海洋部的4個關鍵核心：培訓、成長、主權和團結，藉此推動21世紀成為海洋世紀的第一步[4]。海洋部任務明定為制定和實施全國和國際海洋領域不同面向的政策，其職掌涵蓋海事服務和國家海上行動、海洋和沿海領土、海洋文化和探勘、海員與專業、海運和海洋工業及水產品等[5]。



Annick Girardin
@AnnickGirardin

Avec fierté, j'ai accepté la mission du président de la République et du Premier ministre d'être ministre de la mer. Avec + de 11 millions de km² de domaine maritime en France, + de 391 000 emplois, 10% de la biodiversité mondiale, les défis à relever sont immenses.

上午2:06 · 2020年7月7日 · Twitter for Android

圖 1 / 法國海洋部部長潔哈汀女士推特發表的上任宣言
圖片來源 / <https://twitter.com/AnnickGirardin>

法國海洋部的組織架構

法國海洋部的組織架構包括中央行政部門、國家行政服務機構以及地方服務機關等3大部分。

一、中央行政部門 (Administration centrale)

海洋部的中央行政部門由總秘書處 (Secrétariat général)、海事總檢查處 (Inspection générale des affaires maritimes, IGAM)、以及海洋、漁業暨水產養殖事務處 (Direction des affaires maritimes, de la pêche et de l'aquaculture, DGAMPA) 所組成。值得一提的是，海洋、漁業暨水產養殖事務處在海洋部成立的一年半後 (2022年3月2日)，由原海事處 (Direction des affaires maritimes, DAM) 和原海洋漁業暨水產養殖處 (Direction des Pêches Maritimes et de l'Aquaculture, DPMA) 兩個中央主事海洋的處室合併成立，並且由海洋部、農業及食品部部長來共同管理[6]，法國政府在海洋永續發展的願景可見一斑。

海洋部長也參與法國海洋事務秘書長辦公室 (Secrétariat général de la mer, SGMer) 事務，生態與團結轉型部、農業及食品部、歐洲暨外交部的多位部長合作，並經總理委派擔任海洋部際委員會主席 (Comité interministériel de la mer, CIMer) 及出任國家海洋暨海岸委員會主席 (Conseil national de la mer et des littoraux, CNML)。

二、國家行政服務機構 (Services à compétence nationale)

- (一) 燈塔標誌軍備局 (Armement des phares et balises, APB)：由一支約20艘船的船隊執行任務，安裝和維護沿法國領土海岸設置的海上信號裝置，用以警示、標記航線和港口渠道，確保海上航行安全。
- (二) 國家海事安全與管理學院 (École nationale de la sécurité et de l'administration de la mer, ENSAM)：致力於培訓法國、歐洲和國際海洋領域專精管理之公務員，包括海事管理人員、海事檢查員和國家公共工程工程師[7]。

三、地方服務機關 (Services déconcentrés)

包括法國本土跨區海洋局和海外省海洋局 (DIRM dans l'Hexagone et DM en outre-mer)、各省領土與海洋局 (DDTM)、各船舶安全中心 (CSN)、各區海上監控與搜救協調中心 (CROSS) 以及控制與監測機制 (DCS)。

海洋部監管的公共機構

公共機構是海洋部政策的主要參與者並受其監督管理，包括國家高等海事學校 (École nationale supérieure maritime, ENSM) 與國家海軍榮譽機構 (Établissement national des invalides de la marine, ENIM)，即海員的社會保護組織。與法國生態轉型部共同監管的公共機構則有11個主要的海港：波爾多、敦刻爾克、瓜德羅普、圭亞那、勒阿弗爾、馬賽、馬提尼克、南特聖納澤爾、留尼汪、拉羅謝爾和魯昂，以及巴黎和斯特拉斯堡2個自治港口。另有法國海洋開發研究院 (Institut français de recherche pour l'exploitation de la mer, Ifremer) 由海洋部、生態轉型部、農業部以及高等教育研究暨創新部聯合監管。

海洋部也介入以下公共機構的治理：法國生物多樣性署 (Office français pour la biodiversité, OFB)、法國水道局 (Voies navigable de France, VNF)、法國沿海地區保護組織 (Conservatoire du littoral)、蔚藍海岸、瓜德羅普島與克羅斯港國家公園 (Parc national des Calanques, de Guadeloupe, de Port Cros)，以及瓜德羅普島和馬提尼克島沿海管理規劃處 (les agences des 50 pas géométriques de Guadeloupe et de Martinique)。

法國海洋部主要之公共政策

表1／法國海洋部公共政策

面向	主要內容
一、海上國家行動與海事服務 (Action de l'Etat en mer, services maritimes)	海上救援與監控／海洋信號／海洋環境與漁業捕撈控制／海事行政管理的現代化改造
二、海事專業與海員 (Métiers et gens de mer)	海事專業、培訓和技能／海員之法律與健康權益／海員之社會保護
三、海洋遊憩、運動與休閒 (Palisance, sports et loisirs nautiques)	水域遊憩活動與遊艇之海洋休閒運動／遊憩碼頭
四、海洋遺產、探索與發現 (Patrimoine, exploration et découverte de la mer)	海洋知識
五、海洋、海岸帶與影響力 (Territoires maritimes, littoraux et rayonnement)	海洋、海岸策略與海事規劃／歐洲與國際海上行動／海岸地區
六、海洋環境、創新與污染防治 (Milieu marin, innovation et lutte contre les pollutions marines)	海洋保護區與知識／海洋再生能源與創新／海洋污染防治
七、藍色經濟 (Économie bleue)	海港／貿易商船／海軍、航海和技術創新產業／船舶安全與生態轉型／漁業與水產養殖

資料來源／<https://mer.gouv.fr/politiques-publiques>

法國海洋部的公共政策涵蓋以上7大方向，本文針對法國海洋環境、文化與經濟方面相關政策進行說明。

一、海洋遺產、探索與發現

- (一) 在認識海洋方面，由總理或委派海洋部長擔任主席的國家海洋暨海岸委員會（CNML）下設之「海洋、海事暨海岸研究委員會」（Comité pour la recherche marine, maritime et littorale），扮演重要諮詢角色，建立科學研究和地方管理單位間的交流機制。
- (二) 2021年1月10日文化部長芭切洛（Roselyne Bachelot-Narquin）和海洋部長潔哈汀任命瑪森（Henry Masson）作為布列塔尼（Bretagne）歷史古蹟區域管理人，任務是提高民衆對法國海洋遺產的認識和推廣，並進一步提出保護與發展策略[8]。其中，瑪森特別關注燈塔類的海洋遺產，與海事處共同提出管理指南與措施，激發國民對「法國海景」的興趣。2021年10月海洋部也出版法國本土與海外省的燈塔介紹手冊，內容詳述燈塔的歷史、獲列世界遺產的科爾杜昂（Cordouan）燈塔、現存燈塔的分布及大眾參觀資訊等[9]。
- (三) 法國海洋開發研究院2020年10月23日發表新型自主水下航行器Ulyx，可從下潛3,000公尺增加到6,000公尺；具多尺度調查特性，既可從遠處、也可以接近人眼的圖像分辨率進行仔細研究；配備儀器可蒐集更廣泛的參數。此一創新的科學設計，完善了法國海洋考察船的配置，對保護和恢復海洋環境有進一步助益[10]。

二、海洋環境、創新與海洋污染防治

- (一) 為保護海洋生物多樣性，法國的海洋政策將海域使用者、民選代表、專家等與海洋空間的管理結合在一起，形成連貫的海洋保護區網絡[11]。
- (二) 對於海洋再生能源與創新，法國從研究項目到技術商業部署皆予以支持，期盼2030年實現40%運用再生電力的目標。風力發電是其中最具潛力者，自2012年以來，已通過並陸續營運7個海上風電場，未來更預定在諾曼第、布列塔尼南部、地中海和南大西洋區域持續建置，提供多達15,000個直接與間接就業機會[12]。
- (三) 法國對海洋污染防治的各項努力包括簽署SAILS憲章（減少環境影響所制定之航運實踐指引）、Tony deBrum宣言（減少溫室氣體排放，期盼將升溫限制在+2°/+1.5°C）、陸際油污染計畫（POLMAR/Terre）（防止法國海岸帶油污染）以及對抗船舶空氣污染（減少燃料硫含量）等。另外，法國也簽署了國際海上運輸有毒有害物質損害責任及賠償公約[13]。

三、藍色經濟

藍色經濟是與海洋環境的開發、保護和再生有關的經濟學術語。法國海洋部的藍色經濟政策則特別著重海港能源再生、航海工業技術創新、船舶安全與生態轉型等方面。首先，海港活動包括裝卸、倉儲、建設以及運輸服務，因應商業模式影響，必須容納越來越大的船舶以及貿易商船的需求，發展再生能源的利用可使港口成為能源中心。其次，造船是一個漫長的過程，若遇經濟危機可能出現產能過剩問題，未來對船舶性能和能源效率的要求，也需要進行船隊更新或改造。最後，港口物流、海上

再生能源的利用可使港口成為能源中心。其次，造船是一個漫長的過程，若遇經濟危機可能出現產能過剩問題，未來對船舶性能和能源效率的要求，也需要進行船隊更新或改造。最後，港口物流、海上運輸、造船和修船等活動集群都加劇交通擁堵和污染，這些都是需要發展藍色經濟加以因應的挑戰[14]。

結語

過去法國海洋事務曾多次隸屬於總理或受生態、交通等部會管轄，因應海洋事務統合治理的必要性，直至2020年海洋部才再次回歸成立，提升至一級機關層級，並積極推動21世紀即海洋世紀的重要使命。為了更貼近海洋和沿海地區政策訂定與執行，法國海洋部其所屬組織皆與跨部會及地方管理單位緊密合作。法國海洋部的相關公共政策，尤其是本文所談及海洋遺產、海洋探索、海洋環境、科技創新與藍色經濟等方面，核心皆圍繞在海洋資源保護及永續發展議題。正如巴黎天主教大學布歇教授（Christian Buchet）所強調，沒有海洋我們將無法生存，保護海洋亦即保護我們的未來[15]。

參考資料

- [1] Assemblée nationale, Tous les gouvernements depuis 1958.
<https://reurl.cc/j1M7kZ> (Apr. 4, 2022)
- [2] Les Echos (July 7, 2020), Le grand retour du ministère de la mer.
<https://reurl.cc/e3vxOW> (Mar. 22, 2022)
- [3] Franceinfo (July 7, 2020), Ministère de la mer : "quelle sera sa politique pour que ce ne soit pas une coquille vide ?", Louis Le Pensec.
<https://reurl.cc/Er87om> (Mar. 22, 2022)
- [4] Ministère de la mer.
<https://mer.gouv.fr> (Mar. 22, 2022)
- [5] Ministère de la mer (Mar. 2, 2022), Missions et Organisation.
<https://mer.gouv.fr/missions-et-organisation> (Mar. 22, 2022)
- [6] Ministère de l'agriculture et de l'alimentation (Mar. 2, 2022), Création de la Direction générale des affaires maritimes, de la pêche et de l'aquaculture (DGAMPA).
<https://reurl.cc/2ZM0am> (Apr. 4, 2022)
- [7] Ministère de la transformation et de la fonction publiques (Oct. 20, 2021), Les écoles ministérielles - Ecologie.
<https://reurl.cc/q5zd7y> (Apr. 4, 2022)
- [8] Ministère de la mer (Oct. 1, 2021), Valoriser et faire connaître le patrimoine maritime français : Henry Masson est nommé par les ministres de la culture et de la mer.
<https://reurl.cc/2ZMg0m> (Apr. 9, 2022)
- [9] Ministère de la mer (2021), Les phares, patrimoine des côtes de France (Paris : Ministère de la mer), 2-24.
<https://reurl.cc/p1nyvQ> (Apr. 9, 2022)
- [10] Ministère de la mer (Oct. 22, 2020), Ulyx, le nouvel engin sous-marin de la flotte océanographique française, pour mieux connaître l'océan et les grands fonds.
<https://reurl.cc/b24RxE> (Apr. 9, 2022)
- [11] Ministère de la mer (Dec. 7, 2020), Le patrimoine marin et les aires marines protégées françaises.
<https://reurl.cc/8o4nLd> (Apr. 4, 2022)
- [12] Ministère de la mer (Mar. 8, 2021), Énergies marines renouvelables et innovation.
<https://reurl.cc/GxZrRd> (Apr. 4, 2022)
- [13] Ministère de la mer (Mar. 5, 2021), Lutte contre les pollutions marines.
<https://reurl.cc/1Zj4NY> (Apr. 4, 2022)
- [14] Ministère de la mer (Mar. 29, 2022), Sécurité et transition écologique des navires.
<https://reurl.cc/A7ngn3> (Apr. 10, 2022)
- [15] Institut Catholique de Paris (Oct. 1, 2021), Journée mondiale de la mer - Rencontre avec Christian Buchet.
<https://reurl.cc/NA1XXp> (Mar. 21, 2022)

法國海洋開發研究院

撰文／法國海洋開發研究院國際與歐洲事務部

中文翻譯／萬象翻譯股份有限公司

關鍵字／Ifremer、海洋科學研究、海洋觀測

法國海洋開發研究院（Ifremer）是綜合海洋科學研究的國家機構，創立於1984年，由兩個機構合併而成：法國海洋漁業技術研究院（Institut Scientifique et Technique des Pêches Maritimes, ISTPM）與法國國家海洋開發中心（Centre National pour l'Exploitation des Océans, CNEXO）。Ifremer的營運由法國高等教育研究暨創新部、生態與團結轉型部、農業及食品部以及海洋部共同監督。Ifremer擁有1,500名員工，年度預算約達2.3億歐元，設有5個研究中心及19個近岸研究站，遍布法國本土沿岸地區和法國海外領土（如位於法屬玻里尼西亞和新喀里多尼亞的太平洋中心）。

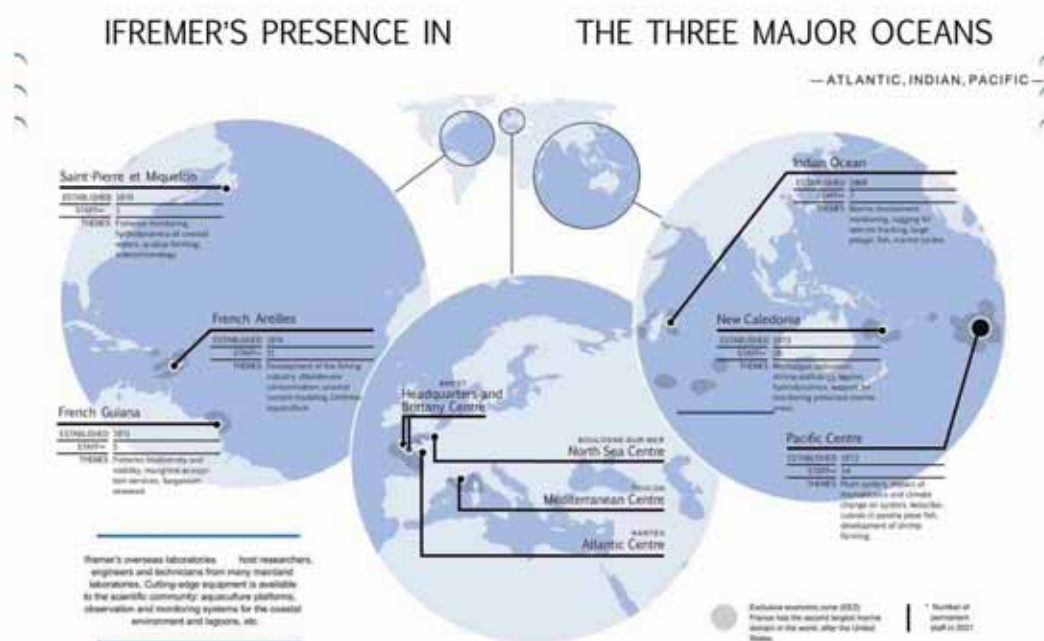


圖1／Ifremer遍布法國本土及海外的研究中心及近岸研究站

圖片提供／Ifremer

憑藉著其觀測與監測的技術，法國海洋開發研究院得以推進科學知識、精進專長及創新研究，來貢獻於保護和恢復海洋環境、永續運用海洋資源，管理及共享海洋資料、資訊及知識。Ifremer的海洋資料入口網站[1]彙整國內各研究主題資訊，同時可方便取得Ifremer管理或參與的其他歐洲及國際研究平臺。Ifremer的研究主題廣泛，從海岸延伸至深海領域，涵蓋研究海洋生態系統和生物多樣性、識別海洋資源的永續開發、瞭解海洋動力學，探索深海新領域。為此，Ifremer設計和建造海洋研究及監測基礎設施，開發工具以觀測、實施科學研究，並管理資料庫。

在海洋觀測方面，Ifremer設有國際Argo計畫的歐洲研究基礎設施聯盟總部Euro-Argo ERIC辦公室[2]，統整衛星傳輸的自動探測浮標設備收集的海水剖面特性；主導近岸研究基礎設施（ILICO [3]，

JERICO [4]) 以對近岸海洋系統變化進行整體評估。Ifremer共同領導隸屬於歐洲研究基礎設施聯盟 EMSO ERIC下的EMSO France，進行跨領域海床及水體觀測站研究[5]。如此統合性的領導地位，Ifremer能更進一步地促進歐洲國家及國際間海洋觀測的研究基礎設施與資料產品的相互使用與交流。

現今，能源轉型是推動永續發展及因應氣候變遷的關鍵主力，而離岸再生能源深具發展潛力。Ifremer是法國離岸再生能源轉型研究中心France Energies Marine [6]的會員之一，也是海洋卡諾機構Carnot MERS (Marine Engineering Research for Sustainable, Safe and Smart Seas) [7]的共同主持人。卡諾研究機構是由公立實驗室主導的關係網絡，目標為開發與滿足與業界合作的需求。而Carnot MERS則是第1個致力於海洋研究的研究機構，以締造永續、安全及智慧海洋環境的海洋工程研究為目標並支持企業發展海事活動[8][9]，其中包含離岸再生能源領域中的科技研究。為推動離岸工程發展，位於Ifremer的流體動力及機械研究基礎設施可測試離岸設備和固定、浮動或水下系統模型。這些包括研究流體動力的深水波或造波池、試驗聚合物及複合材料耐久性的測試平臺，或用於在加壓環境測試材料的高壓艙（模擬深海沉浸）。

Ifremer屬於國營公共工商機構，目的在於透過公私合作夥伴關係，提供公共政策諮詢和技術轉移服務。法國政府定期諮詢Ifremer以協助評估海洋資源和資源使用條件，例如歐盟水資源架構指令、海洋策略架構指令、共同漁業政策，或國家生物多樣性策略，以及其他動物健康或水產養殖政策議題等。由於海洋研究深具創新潛力，可帶來競爭優勢，促進企業成長，Ifremer不僅實現生產知識目標，更從研究中創造經濟價值，進而促進經濟發展，並轉化研究價值以推動社會經濟，例如水下系統、運行海洋學 (operational oceanography)、海洋生物技術、漁業科學、水產養殖、環境監測，以及能源與礦產資源。Ifremer目標為透過積極策略與公司、企業集團及中小企業共享「藍色成長」價值，打造創新環境。



圖2/Ifremer在深水試驗池中測試浮動式風機平臺
圖片提供/Ifremer/ O.Dugornay



圖3/AUV 6000 Ulyx從R/V Pourquoi Pas下水Ulyx可潛水至6,000公尺深，
自主完成長達48小時的任務
圖片提供/Ifremer, S. Lesbats (2022)

法國海洋研究船與水下系統的協調能力

法國海洋研究船隊（French Oceanography Fleet, FOF）[10][11]是Ifremer自2018年起重整營運的特定超大型研究基礎設施，涵蓋所有船隊資源，包括6艘深海探測船（長度從30公尺到120公尺不等）、5艘近岸船隻、7艘研究船、載人與自動半潛船及其他水下設備。每年平均進行40次深海巡航、50次近岸巡航，為政府執行科學觀測（海洋地球科學、物理與化學海洋學、海洋生物多樣性和古海洋學）、實施監測活動（水道測量、魚群資源、勘查專屬經濟海域（EEZ）、沿海環境或危害評估）等。自2018年的改組，FOF成為唯一接受來自法國高等教育、研究暨創新部的全部預算的組織。至於航次的挑選則由獨立的科學諮詢委員會根據計畫書的良窳評估審查。公海區域每年評估1次，而沿岸區域每年2次。FOF再根據審核結果與研究船的據點，安排船舶的巡航時程。

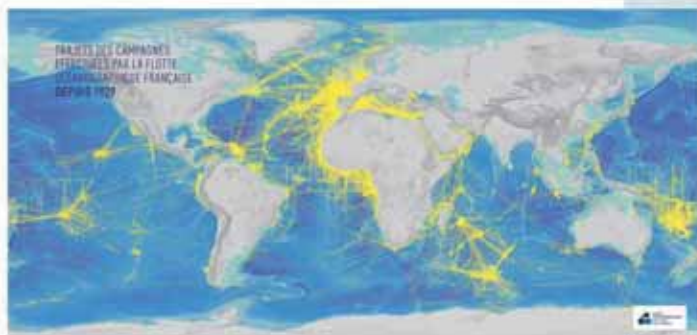


圖4／法國海洋研究船隊自1929年啟程後的航線路徑
圖片提供／Ifremer



圖5／R/V Marion Dufresne使用巨型鑽心取樣系統
圖片來源／I. Saumermilch, Institut polaire français

嚴重特殊傳染性肺炎（COVID-19）疫情期間，由於合作夥伴與船舶營運人的防疫計畫標準不同，導致出海任務面臨更多挑戰。例如，2019年在印度洋馬約特離島發現一座海底火山[12]，對生活在周圍島嶼的居民構成潛在威脅，必須定期進行海上調查。為了持續蒐集資料並利用多音束測深儀觀測，在2020年該團隊不得不尋求法國海軍及一家私營企業支援其原本安排的任務。尤其是後者，由於科學家無法登船，因此採改用遠端調查的方法，包括即時線上同步處理聲學資料，以即時指示私營企業後續步驟。

在FOF船隊中，臺灣人最熟悉的應該就是研究船瑪麗安·杜帆妮號（R/V Marion Dufresne），此研究船曾參與著名的IMAGES計畫，包括1997年IPHIS MD106在西南太平洋進行古海洋環境研究的航次[13]。她最近一次來臺灣是執行2018年的EAGER（MD214）及HYDROSED（MD215）的研究航次，並曾停泊於基隆和高雄。航次目的是在海洋沉積記錄中尋找極端氣候事件——大地震、海嘯、火山爆發及強颱風的痕跡，重現熱帶西太平洋的古海洋變化情形。研究船瑪麗安·杜帆妮號擁有目前最佳的深海鑽心取樣技術，能夠取得長達70公尺的優質沉積物。EAGER巡航期間，團隊蒐集了32根沉積岩心，最長達到46公尺，以及14個交界面岩心樣本。法國及臺灣科學家利用這些沉積物記錄，確認過去的海嘯及火山爆發事件。而此任務更促使首次在臺灣海域鑽獲可燃冰的天然氣水合物。

臺法合作歷史悠久

Ifremer與臺灣研究人員長期維持合作關係，合作對象主要以大專院校、中央研究院為主，次要與中央地質調查所、台灣海洋科技研究中心以及家畜衛生試驗所。大部分的合作經由不同的臺法雙邊項目資助，包括法國教育中心與台灣科技部共同主導促進人才交流的臺法幽蘭計畫（PHC Orchid）、科技部與法國國家研究總署（ANR-MOST）的雙邊協議國際合作計畫，以及CNRS國際科研網絡（如國際科研實驗室「D3E從地球深處到極端氣候事件」），或是經由其他的研究生培訓計畫。Ifremer與臺灣的第一個合作主題可以追溯到1980年代西太平洋計畫的沖繩海槽弧後研究 [14]。此次合作除了培養許多博士生，同時也開發海底地震儀（MicroOBS）等儀器。此合作貢獻被享有盛譽的法蘭西自然科學院臺法科技獎肯定，並於2014年將其授予中央大學的許樹坤教授，以及其當時Ifremer博士班指導教授和後來的長期合作夥伴Jean-Claude Sibuet教授 [15]。



圖6／Ifremer與臺灣研究人員聯合發表的關鍵詞
資料來源／擷取自1987年至2018年間Web of Science的45條索引記錄

為海洋努力

海洋連結、聯繫與支持我們。因此，維持健康且生生不息的海洋環境，以滿足未來所需，十分重要。以科學方式觀測及衡量海洋對壓力的反應，才能夠找到永續發展目標的管理策略。Ifremer致力於提供我們想要的海洋所需的科學知識境。在聯合國海洋科學促進永續發展國際十年的願景下，Ifremer積極參與並負責幾項經核可的十年行動計畫。例如，一、籌劃「十年活動」One Ocean Science [16]，匯集全球合作夥伴，提高海洋科學的重要認知；二、與CNRS共同負責一項「十年貢獻海洋與氣候解決方案」，以資助研究計畫，以及三、籌劃「深海觀測網絡」（OneDeepOcean）十年計畫，目標為彙整國際觀測網路，促進知識整合，鼓勵技術創新，透過培訓發展能力建設。OneDeepOcean與其他深海的十年計畫[17]將一起合作，旨在共同努力採取變革措施，以揭示並守護海洋的最後一塊新領域。



圖7 / 這張照片拍攝於地中海科西嘉島離岸40公尺深處，顯示海洋的生物多樣性。為了反轉海洋健康衰退的惡性循環，進行管理之前必須觀測與瞭解狀況

圖片提供 / Ifremer/O.Dugornay (2021)

在全球意識到海洋在2030年永續發展議程中的核心角色，Ifremer憑藉豐富的專業知識、多項研究基礎設施與國際合作夥伴關係，持續履行使命，實現願景。海洋科學正經歷一場變革，海洋素養與公民科學知識有所提升，使得研究學界與社會更加密切連結，為海洋凝聚彼此。以兩項Ifremer的公民科學計畫為例，Deep Sea Spy[18]召集社會大眾來幫忙註解深海生物影像，另一個Phenomer則是請公民監測浮游植物引致海水變色的現象[19]。為了推動海洋環境改革，除了由其專家擔任多個歐洲及國際組織的工作小組以提供政策建議之外，Ifremer也在各種國際活動中展開積極行動，例如2021年格拉斯哥的聯合國氣候變化綱要公約第26屆締約方大會（COP26）、2022年布雷斯特海洋峰會、2022年里斯本的聯合國海洋會議。

詳細資訊請參見 <https://wwz.ifremer.fr/> @Ifremer_fr

參考資料

- [1] <http://en.data.ifremer.fr/>
- [2] Euro-Argo, <https://www.euro-argo.eu/>
- [3] ILICO, <https://www.ir-ilico.fr/en>
- [4] JERICO, <https://www.jerico-ri.eu/>
- [5] EMSO France, <https://www.emso-fr.org/EMSO-France>
- [6] 法國海洋能源 <https://www.france-energies-marines.org/en/>
- [7] MER, <https://camot-mers.com/>
- [8] <http://theorem-infrastructure.org/>
- [9] <http://www.mariner-g-i.eu/>
- [10] https://wwz.ifremer.fr/flotte_en/
- [11] <https://www.youtube.com/c/IfremerTV/videos>
- [12] Feuillet, et al. (2021). Birth of a large volcanic edifice offshore Mayotte via lithosphere-scare dyke intrusion. Nature Geoscience, 14: 787-795.
- [13] <https://campagnes.flotteoceanographique.fr/campagnes/97200010/>
- [14] Sibuet et al (1987). Back arc extension in the Okinawa Trough, Journal of Geophysical Research, 92, 14041-14063.
- [15] <https://www.academie-sciences.fr/en/Laureats/laureats-2014-du-prix-de-la-fondation-scientifique-franco-taiwanaise-shu-kun-hsu-et-jean-claude-sibuet.html>
- [16] <https://oneoceanscience.com/>
- [17] <https://en.unesco.org/news/decade-actions-explore-deep>
- [18] <https://www.deepseaspy.com/en>
- [19] <https://www.phenomer.org/>

法國海洋自然公園

(parc naturel marin français)

撰文／葉如萍（國立成功大學都市計劃學系助理教授）

關鍵字／專屬經濟區

法國專屬經濟區（EEZ）的面積在世界數一數二，超過1,000萬平方公里（維基百科將法國EEZ海域面積列為世界第1，但法國生態部網站自認第2[1]）。從1992年在里約的地球高峰會（Earth Summit）中提出保護與復育生物多樣性（Biodiversity）為達到發展永續的重要手段開始、歐洲議會2000年10月23日2000/60/CE指令（Directive）[2]發布的水文政策第一次拓展到海岸及海洋、到2002年在約翰尼斯堡的永續發展世界高峰會（World Summit on Sustainable Development）中各國認可生物多樣的重要性並承諾發展海域保護網絡，法國一直在構思更完善的海域保護工具。2010年在名古屋的聯合國氣候變化綱要公約（United Nations Framework Convention on Climate Change, UNFCCC）第10屆締約方大會（Conference of the Parties, COP10）中各國雖曾承諾到2050年將海域的10%劃設為保護區，但隨著氣候變遷的威脅加劇，《全球海洋公約》（Global Ocean Treaty）的倡議於2022年3月7-18日於紐約進行政府間協商，目標在2030年前至少保護30%海洋，雖然最後未達成共識，但30×30（指在2030年前，有30%的海洋受到保護）的願景仍獲得多數國家的支持，預計於5月提交修正草案，8月再提會[3]。

法國保護海域的工具已不少，如劃設國家公園、Natura 2000、物種保護區，另有依聯合國教育科學及文化組織（UNESCO）所劃設的生態保護區、文化遺址，及依濕地公約劃設的濕地，還有與其他國家簽訂的海域公約，如1985年在西印度洋海域幾個東非國家的Nairobi公約、1986年加勒比海的Carthagène公約、1995年地中海的Barcelone公約、及1998年東北大西洋的OSPAR公約。但面對海陸交界的複雜性，尚缺乏一個在200海浬（EEZ）範圍內可同時管理海岸與海洋的有效工具，2004年時任環境部部長的Serge LEPELTIER提出海洋自然公園（PNM）的概念，於2006年4月14日立法通過，呼應了UNESCO在2006年召開的第1屆海洋空間規劃（MSP）大會中對海洋進行規劃與管理的建議。PNM的主要任務有三：一、認識場域；二、保護生態系統；三、與海洋相關活動的永續發展。PNM被認為是法國所有海域保護措施中最精細的一個。而這個新工具也協助法國保護30%海洋的目標提前在2022年達到（海域受保護面積於2022年達到33%，歷年分別是2006年0.3%、2009年0.8%、2013年3.8%、2014年16.3%、2019年23.5%、2022年33%[1]）。

關於海洋保護區之劃設，法國設定8個條件[4]：一、保育物種、遺產或需持續保育的物種與棲地（稀有、受威脅物種）；二、非保育物種，但屬特定保育目標（開發的魚種、數量豐富且是當地生態鏈中的重要物種）；三、關鍵生態功能（產卵、苗圃、育幼、生產力、休息、食物、遷徙等）；四、

海洋水域狀況良好；五、可持續使用資源；六、可持續發展活動；七、海洋文化遺產；八、具社會、經濟、科學、教育之附加價值。PNM須滿足全部8個條件。

PNM的劃設非常重視利害關係人，包括海域各種使用業者與居民、民選代表、科學研究人員等，通常需要2-3年的時間以達成共識，再立法宣告成立，計畫內容應包括至少3項：一、綜合考量生態與使用後而劃定的範圍；二、發展定位，為後續所有行動的指引；三、管理委員會之組成，為海洋公園的管理機構，成員應包括各類海域使用者。

立法後即開始積極籌設，初期目標為劃設10個PNM，但Golfe Normand-Breton因地方反對最後宣告終止，Glorieuses則於2021年6月8日廢止改設國家自然生態保護區[5]，故目前有8個海洋自然公園。

表1／法國海洋自然國家公園設立日期、面積與管理委員會人數

	Iroise	Mayotte	Golfe de Lion	Glorieuses	Estuaires Picards et de la Mer d'Opale	Bassin d'Arcachon	Estuaire de la Gironde et de la mer des Pertuis	Cap Corse et de l'Agriate	Martinique
設立日期	2007. 9.28	2010. 1.18	2011. 10.11	2012. 2.22	2012. 12.11	2014. 6.5	2015. 4.15	2016. 7.15	2017. 5.5
面積 (km ²)	3,500	68,800	4,010	43,500	2,300	435	6,500	6,830	48,900
委員人數	49	41	60	20	60	56	70	48	53

資料來源／各海洋自然公園。大西洋3個：Iroise [6]、Bassin d'Arcachon [7]、Estuaire de la Gironde et de la mer des Pertuis [8]；地中海2個：Golfe du Lion [9]、Cap Corse et Agriate [10]；英吉利／北海：Estuaires picardset de la mer d'Opale [11]；印度洋：Mayotte [12]；加勒比海：Martinique [13]

PNM的上級機關為生態部下的海洋保護署（Agence des Aires Marines Protégées, AAMP）。由AAMP負責提供財務、技術、及人力的支援。公園成立後之管理，由管理委員會負責，委員會的職責在依循公園成立時所設定的發展定位，設定準則，制定未來15年的跨部門管理計畫，其內容應包括可衡量海洋健康與管理績效的各項具體指標。基此，委員會成員包括AAMP的人員，如第1個成立的Iroise海洋自然公園，就有約20個包括技術、駐地、行政的AAMP成員。

委員會的主要任務在監督、溝通、與激發在地居民對海洋的保護意識，成員雖無執法權力，但可以透過如釣魚、環境保護、文化資產等已存在的各項法規的執法機關去執行政策。委員會對範圍內的所有活動均有審議權，會對海域產生重大衝擊的活動，委員會可以否決並要求相關機關接手處理。如Glorieuses的管理委員會曾在2015年6月17日全員通過反對石油公司提出的海底鑽探計畫。

PNM的管理範疇包括：一、自然資源；二、海陸介面；三、海水品質；四、產業活動，如漁業、觀光業、航運業；五、文化資產；六、環境教育；七、治理[15]。如果單從地方的角度去執行海域管理，可能無法回應海域議題的複雜性，PNM的管理透過AAMP，有助於將地理空間擴大到國際層級，如Golfe du Lion的範圍鄰接西班牙海域、Golfe normand-breton與英國領海鄰接、Mayotte臨接印度洋西南海域、Estuaires Picards et de la Mer d'Opale與歐盟計畫中英吉利及北海的合作有關、Martinique則須考量加勒比海的複雜狀況。

以下簡介第1個成立的Iroise海洋自然公園。Iroise位法國本土西北的大西洋海域。1988年曾被UNESCO的MAB (Man and Biosphere) 計畫指定為保護區；歐盟的NATURA 2000在此範圍便有5處。

表2/Iroise海洋自然公園的重要歷程

時間	事件
1989年	劃設生態保護區
1995年	海域跨部會委員會通過籌設國家公園
1996年	海軍派員主持國家公園劃設研究計畫
2000年	國家公園草案計畫徵求民衆與地方民代意見
2001年	法國第一總理簽署同意劃設國家公園
2002年	推動諮詢計畫
2004年	Iroise地區不適合劃為國家公園
2005年	國家自然公園計畫啟動
2006年4月14日	國家自然公園公告
2006年11月20日起	為期一個月的公開徵求意見
2007年9月28日	正式設立Iroise國家自然公園
2007年12月19日	召開第一次管理委員會並推選主席
2008年9月23日	管理中心在Conquet廣播站舊址設立
2009年12月2日	在Tristan島成立南管理站
2010年9月29日	管理委員會通過管理計畫，11月25日由AAMP認可
2014年	保育成果獲得IUCN肯定
2018年7月	Finistère與Maritime de l'Atlantique兩位省長（préfet）提案擴大範圍
2019年2月起	為保護海鳥棲地，將幾個小島納入公園範圍的提案討論開始
2020年7月起	公開徵求意見（陸域擴大1,129公頃、海域擴大1,008公頃）

資料來源/[16]

此處以海浪與風為主要地景，各式專業或休閒活動眾多，擁有豐富的文化地景，同時居民的在地意識非常強烈：這是他們的海！2007年公告成立PNM後，持續有地方的抗爭行動，首先是Iroise島嶼與海濱促進會（ADVILI）要求廢止計畫，國會以該促進會組織不具代表性與不具正當性駁回；此外Ouessant島的地方議會亦提出相同訴求，其理由：一、公眾諮詢程序不完整；二、民意反對；三、設立PNM是個錯誤。國會分別予以駁回：一、無明確證據；二、環境相關法規並未禁止政府通過有反對意見的提案；三、各項證據均支持此地的生態與海洋具多樣性具特殊性。

Iroise管理委員會的49位成員包括：11位民意代表（區域及地方政府）、12位民間組織代表（漁會、農會、商會……）、8位海洋使用組織代表（海釣協會、潛水協會、航海協會……）、2位環保組織代表、9位海洋專家學者、1位Armorique區域自然公園代表、6位中央政府代表。

法國生物多樣署在最新出版的2020年紀要[17]中，重申法國PNM的5個主要任務：一、生物多樣性；二、科學調查與分析；三、國家政策的具體實踐；四、保護區的管理與復育；五、推廣環境教育。全部PNM在2020年共計審查72個案件，5件駁回，其中1件在Iroise；技術部門共提供165件專業意見、補助90個計畫，總金額963,835歐元（約新臺幣34百萬元），其中環境監測占比達15~20%。

參考資料

- [1] Ministère de la Transition écologique (Feb. 16, 2022). Le patrimoine marin et les aires marines protégées françaises. <https://www.ecologie.gouv.fr/patrimoine-marin-et-aires-marines-protgees-francaises> (Mar. 13, 2022)
- [2] EUR-Lex (2000). Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32000L0060> (Mar. 18, 2022)
- [3] United Nations (n.d.). Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (General Assembly resolution 72/249). <https://www.un.org/bnjl/> (Mar. 25, 2022)
- [4] Ministère de la Transition écologique (2015). Stratégie nationale de création et de gestion des aires marines protégées, 10. <https://www.ecologie.gouv.fr/sites/default/files/Strat%C3%A9gie%20nationale%20de%20cr%C3%A9ation%20et%20de%20gestion%20des%20aires%20marines%20prot%C3%A9g%C3%A9es.%20Synth%C3%A8se.pdf> (Mar. 13, 2022)
- [5] Office français de la biodiversité (Jun. 14, 2021). Création de la réserve naturelle nationale de l'archipel des Glorieuses. <https://www.ofb.gouv.fr/actualites/creation-de-la-reserve-naturelle-nationale-de-larchipel-des-glorieuses> (Mar. 19, 2022)
- [6] Parc naturel marin Iroise. <https://parc-marin-iroise.fr/> (Mar. 18, 2022)
- [7] Parc naturel marin Bassin d'Arcachon. <https://parc-marin-bassin-arcachon.fr/> (Mar. 18, 2022)
- [8] Parc naturel marin Estuaire de la Gironde et de la mer des Pertuis. <https://parc-marin-gironde-pertuis.fr/> (Mar. 18, 2022)
- [9] Parc naturel marin Golfe du Lion. <https://parc-marin-golfe-lion.fr/> (Mar. 18, 2022)
- [10] Parc naturel marin Cap Corse et Agiate. <https://parc-marin-cap-corse-agiate.fr/> (Mar. 18, 2022)
- [11] Parc naturel marin Estuaires picardset de la mer d'Opale. <https://www.parc-marin-epmo.fr/> (Mar. 18, 2022)
- [12] Parc naturel marin Mayotte. <https://www.parc-marin-mayotte.fr/> (Mar. 18, 2022)
- [13] Parc naturel marin Martinique. <https://www.parc-marin-martinique.fr/> (Mar. 18, 2022)
- [14] Office français de la biodiversité (October, 2021). L'année 2020 dans les parcs naturels marins, 30. <https://www.ofb.gouv.fr/documentation/lannee-2020-dans-les-parcs-naturels-marins>
- [15] Office français de la biodiversité (n.d.). Les parcs naturels marins et le sanctuaire de mammifères marins Agoa. <https://www.ofb.gouv.fr/les-parcs-naturels-marins-et-le-sanctuaire-de-mammiferes-marins-agoa> (Mar. 11, 2022)
- [16] Parc naturel marin Iroise (n.d.). Qui sommes-nous. <https://parc-marin-iroise.fr/editorial/qui-sommes-nous> (Mar. 18, 2022)
- [17] Office français de la biodiversité (October, 2021). L'année 2020 dans les parcs naturels marins, 21-27. <https://www.ofb.gouv.fr/documentation/lannee-2020-dans-les-parcs-naturels-marins> (Apr. 4, 2022)



Working Towards Making the 21st Century the Maritime Century: Taiwan and France Walking into the Future, Hand in Hand!

Translated by Linguitronics

Minister of the Ocean Affairs Council: Chung-Wei Lee

The 7th "Our Ocean Conference" (OOC) was held from April 13 to 14 this year (2022). This issue's "Special Report" introduces the event, to which Taiwan was invited by the host country, Palau, to participate with official government titles. It also introduces the core concept of the conference, the promotion of Taiwan's participation, and a comprehensive reflection on the conference. Taiwan has intimately communicated and interacted with various countries through the participation and presentation in the plenary sessions, holding side activities, submission of marine commitments, and participation of youth representatives. It has also declared to all countries in the world Taiwan's determination to promote maritime affairs and its willingness to contribute.

Taiwan and France have a long-standing and close cooperative relationship in marine research and technology. As one of the important member states of the EU, France plays an important role in the decision-making of EU marine affairs. This issue focuses on reporting on France's maritime policy and development. The Secretariat General of the Sea (*Secrétariat général de la mer*, SGMer) has been invited to introduce France and its international agenda related to maritime challenges, as well as France's development in the offshore wind power industry. From February 9th to 11th of this year, the international "One Ocean Summit" held under the initiative of France advocated solutions for protecting the marine ecosystem, promoting sustainable fishing, combating plastic pollution, and ameliorating global change, as well as the 4 goals of the "Brest Commitments for the Ocean", such as updating of ocean governance. In view of the commitments of EU member states for carbon neutrality by 2050 and the Climate Energy Law passed by France in 2019, the SGMer also introduced the development of the offshore wind power industry which itself occupies a key position in the carbon neutrality plan, including important roles for captains, energy companies, grid operators RTE, and citizen participation and discussions in offshore wind power projects; the French Research Institute for Exploitation of the Sea (IFREMER), introduced the key research technologies in ocean observation and monitoring, marine research vessels and underwater system coordination, as well as a vast swath of research topics and a history of cooperation and exchanges between Taiwan and France. "Regulatory Systems" will introduce how France, in addition to setting up national parks, Natura 2000, species reserves, ecological reserves, cultural heritage sites, wetlands, and signing maritime conventions with other countries, has used these to manage the law of Les Parcs Naturels Marins (PNM) across its massive exclusive economic zone (EEZ). Taiwan and France have a long-standing and close cooperative relationship in marine research and underwater cultural assets. Thus, we also hope to engage in more exchanges and cooperation in marine affairs in the future, and work together to realizing the 21st century as the "maritime century"!

Ocean Affairs Council Participates in the 7th "Our Ocean Conference" in Palau Highlighting Taiwan's Marine Contributions and Bountiful Results

Zih-Jia Li (Section Chief, Department of International Development, Ocean Affairs Council)

I-Ting Tsai (Officer, Department of International Development, Ocean Affairs Council)

Keywords: Our Ocean Conference, Our Ocean Palau, Climate change



Figure 1/ Group photo of the Heads of Delegations of participating countries
Source/ Official photo section on the official website of the conference

The "Our Ocean Conference" (OOC) is an initiative originally proposed by then US Secretary of State John Kerry (now special presidential envoy for climate, SPEC) in 2014 to rouse global attention to the ocean, which has a profound impact on human development and environmental sustainability. OOC calls on the global public and private sectors to take practical actions to fulfill their responsibility to protect the ocean. OOC participants include heads of governments, ministers, political and business celebrities, NGOs, and multinational corporations. Through this annual gathering, the participants exchange and share their experiences on ocean issues and build consensus among countries and civil society groups from around the world.

Beginning with the first OOC held in Washington, DC, USA, in 2014, the conference has been held by Chile, the United States, the European Union, Indonesia, and Norway from 2015 to 2019. This year's conference is the 7th and was organized by the host country, Palau, and the United States, the co-host country. Its theme for the year is "Our Ocean, Our People, Our Prosperity", and it is the first time being held by a Small Island Developing State. According to official statistics compiled by the OOC, more than 600 participants and 150 non-state actors of more than 70 countries' delegations participated in the 2022 conference.

The conference was originally scheduled for August 2020, but was postponed several times due to the COVID-19 pandemic; finally, it was set for April 13-14, 2022. In the past, due to international diplomatic and political factors, Taiwan sent scholars and experts to participate in a non-official capacity; this time,

however, it was officially invited by its diplomatic ally Palau. Taiwan President Ing-Wen Tsai appointed Tzi-Chin Chang, Minister of the Environmental Protection Administration, to lead relevant personnel of the Ministry of Foreign Affairs, Ocean Affairs Council (including the Coast Guard Administration and the Ocean Conservation Administration), and Fisheries Agency, as well as the International Cooperation and Development Fund (ICDF), to attend the meeting with their official government titles. Compared with the past, this is arguably a significant breakthrough.

The Ocean Affairs Council, together with relevant government agencies, started to prepare for the 7th OOC as early as 2019, more than two years before the conference. This time, Deputy Minister Dr. Ching-Piao Tsai of the Ocean Affairs Council and Director-General Dr. Julia Hsiang-Wen Huang of the Ocean Conservation Administration led professional staff to participate in the meeting. During the period, through participation and presentation of the plenary, the holding of side events, the submission of marine commitments, and the participation of young representative, there were intimate exchanges and interactions with various countries. Taiwan's determination and willingness to contribute to the promotion of marine affairs were thus declared to countries around the world.

The core concept of the OOC: "Make commitments, take action"

In their opening remarks, Palau President Surangel S. Whipps Jr., US special presidential envoy for climate John Kerry, and US President Joe Biden all pointed out: The survival of human beings depends on the oceans. It nourishes life, provides food, job opportunities, and energy. It also fulfills the important function of regulating the climate, and changes in climate and oceans impact the environment. Thus, it's time for humans to introspect, accept reality, face problems, and take more aggressive, determined, and innovative actions to change the situation.

This conversation clearly revealed the core concept of the conference: "make commitments, take action." Since its inception, the conference has focused on the world's ocean issues in six areas of action, namely:

- I. Advancing Marine Protected Areas for Communities, Ecosystems, and Climate.
- II. Tackling Marine Pollution.
- III. Confronting the Ocean-Climate Crisis or Towards an Ocean Solution for Climate Change.
- IV. Creating Sustainable Blue Economies.
- V. Advancing Sustainable Small-Scale Fisheries and Aquaculture.
- VI. Achieving a Safe, Just and Secure Ocean.

These six areas of action cover marine issues of global concern. Overall planning of the conference, including agenda design, speaker invitations, and side events are all carried out based on this framework; more importantly, each conference will hold a meeting for the six major areas of action to obtain "commitments" from the global public and private sectors; participants are also asked to provide updates on yearly implementation progress, making the conference an initiative with "promoting action" as its core concept. Since 2014, the conference has obtained more than 1,800 commitments from countries, entities, and organizations, altogether amounting to US\$108 billion and designating five million square miles of marine protected areas (MPAs). This conference alone garnered 410 commitments, amounting to US\$16.35 billion.

High-ranking officials from Taiwan attended the meeting with their official titles, breaking through long-running restrictions

Since 2019, the Ocean Affairs Council has started preparations for participating in the 7th OOC. It set four strategic goals, including "strive to raise the level of participation and expand into the international

space," "select advantageous topics and enhance substantial participation," "select outstanding representatives and participate in youth activities," and "apply for side events to expand participation." Through joint promotion of various ministries and associations, all goals have been achieved with fruitful results.

For the purpose of "raising the level of participation," the Taiwan delegation was led by Tzi-Chin Chang, Minister of the Environmental Protection Administration Ching-Piao Tsai, Deputy Minister of the Ocean Affairs Council; Chung-Kwang Tien, Deputy Minister of Foreign Affairs; Julia Hsiang-Wen Huang, Minister of the Ocean Conservation Administration; Timothy T. Y. Hsiang, Secretary General of the International Cooperation and Development Fund (ICDF); and other senior officials at the ministerial level. Also, professional staff from the Fisheries Agency and the Coast Guard Administration formed a delegation of more than 20 people. In the past, only scholars and experts could participate in their personal capacity, so this change has significantly broken through the previously restricted situation.

For "enhancing substantial participation," the Ocean Affairs Council, integrating various ocean-related ministries, submitted 14 commitments in six major areas of action, with a budget of US\$384 million; also, Acer made a commitment to tackle marine pollution in response to the conference's call for public-private collaboration.

In addition to the Taiwanese delegates participating in the entire plenary, the organizers also invited Minister Chang and Deputy Minister Tsai to make presentations on the second day of the conference. Minister Chang described Taiwan's environmental protection policies and achievements in the session on "tackling marine pollution", including the management of land-based waste, implementation of a series of "Salute to the Seas" policies such as coastal waste cleanup, abandoned fishing gear control, and river and land-source waste rejection. Minister Chang also displayed the OOC official island formal made by Taiwanese manufacturer Shinkong Synthetic Fibers Corporation using marine debris from Palau, showing Taiwan's determination to pursue the sustainable development of the environment. Deputy Minister Tsai proposed commitments on behalf of Taiwan in the session on "achieving a safe, just and secure ocean", including promoting implementation of the "Maritime Center and the Smart Navigation Safety System," enhancing maritime search and rescue capabilities, and combating cross-border criminals such as drug smuggling, thereby demonstrating Taiwan's efforts and contributions to promoting a safe and secure ocean. Since the agenda is only two days long, representatives from public and private sectors around the world are all competing for exposure at the plenary. The organizer gave two official representatives of Taiwan the opportunity to speak on the stage at the plenary, a high-level courtesy and an affirmation of Taiwan's contribution to the ocean.

As for "participating in youth activities," cultivating youth to participate in marine affairs actively is one of the key tasks of the Ocean Affairs Council. The outstanding youth representative selected and recommended by the Ocean Affairs Council—Huai-Pu Chen from the Department of Electrical Engineering of National Taiwan University, stood out among the 490 global candidates from 110 countries and was selected as Youth Delegate of the conference, becoming the first youth representative in Taiwan to participate in the OOC. As a delegate, Chen communicated with youth representatives from the Cook Islands, Palau, the Maldives, Panama and other countries, and engaged in dialogues with senior officials from the United Nations, US NOAA, and NASA, thereby setting a foundation for Taiwan's international exchange on ocean affairs.

In "applying for side events," since this conference is the first time being hosted by a Small Island Developing State, in order to highlight the severe challenges of climate change to the marine environment



Figure 2/ Deputy Minister Tsai of the Ocean Affairs Council expresses Taiwan's commitment to "Achieving a Safe, Just and Secure Ocean" area of action

Source/ Official photo section on the official website of the conference

and coastal communities as well as the ecological impact caused by marine debris and pollution, Taiwan held a total of four side events, including two static exhibitions and two side meetings. One of the static exhibitions was co-organized by the Ocean Affairs Council and the ICDF, and was titled "Taiwan Ocean Action Exhibit-Blue Ocean Green Future," which presented Taiwan's effectiveness in marine debris management. It was approved by the organizers of the conference as an official side event and exhibited at the Palau National Gym; in order to expand the promotion of Taiwan's blue economy concept, the second static exhibition was held at the Palau Royal Resort under the theme of "Toward Zero Emission and Zero Waste Future," and invited about 70 dignitaries from Palau, ambassadors to Taiwan for Belize, St. Vincent, and St. Kitts and Nevis, and representatives from the public and private sectors of the United States, Japan, and other countries. As part of the side meetings, the ICDF, the United States Agency for International Development (USAID), and the Palau government jointly organized the side meeting on "Climate Resilience and Sustainable Development in Small Island Developing States". In addition, the ICDF and the Austronesian Forum jointly organized the "Nature-Based Solutions - Austronesian Ethnic Perspectives", to which were invited Taiwanese experts and scholars, including Director-General Huang of the Ocean Conservation Administration and Dr. Chun-Fa Tung, Honorary Professor of the College of Indigenous Studies, National Dong Hwa University, as panelists to share Taiwan's opinions and suggestions.

In addition to the main activities of the conference, the Embassy of the Republic of China (Taiwan) in the Republic of Palau arranged for a delegation to visit the Rock Island for ecological visits and green sea turtle release activities. The green sea turtles released this time were discovered by the Palau Coast Guard in the Rock Island in 2021. After being nurtured by the Aquaculture Project Center of Taiwan's Technical Mission in Palau, they were of a size appropriate to release back to the sea in April 2022. The act shows Taiwan's contribution to Palau's marine ecological conservation. Moreover, in order to show the unwavering friendship between Taiwan and Palau, the Coast Guard Administration dispatched the vessel "Tainan (CG126)" to conduct a joint patrol mission with Palauan counterparts. A solemn and grand flag-raising ceremony held at the port on the morning of April 16, 2022 symbolized a milestone in the collaboration on joint patrols between Taiwan and Palau.

Overall Observation of the conference

I. Emphasizes the issues of the ocean-climate nexus from the perspective of a Small Island Developing State (SIDS)

Since the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate was approved in 2019, the importance of the ocean in the issue of climate change has been given more attention

increasingly. The terminology of the "Climate Change" action field of this conference also deliberately added the "ocean" element, to rewrite it as "Confronting the Ocean-Climate Crisis". President Surangel Whipps, Jr. of Palau also delivered a speech, emphasizing that island countries are at the forefront of the dual challenge of climate and ocean. By hosting this conference, Palau conveys a message to the world about how vulnerable it is to these challenges. Protecting the ocean to restore its health and resilience and developing ocean-based climate solutions have become the core conceptual through-lines of the OOC.

II. Weighs the concept of indigenous-led marine conservation

In addition to the need for cross-border, cross-government, and cross-departmental cooperation to protect the ocean, this conference also highlights cross-ethnic and cross-age group participation. In addition to the traditional performance at the conference's opening ceremony, Tongan singer/songwriter Mia Kami was invited to sing her song "Rooted" live in the plenary, to bring hope to the people of the Pacific and this region and emphasizing ancient connections with the ocean. The conference also arranged a special Indigenous-led Conservation. Other areas of action invited moderators and participants with indigenous ancestry to share the wisdom, history, culture, and other aspects of the indigenous peoples, thus showing inexorable connections between the indigenous peoples and the ocean.

III. The core concept of the conference "Make commitments, take action" is in the details

Land-based waste is one of the main sources of marine pollution, and Small Island Developing States are heavily affected by marine waste. The organizer took the lead in implementing the core concepts of the conference in many small places, including the conference not providing paper materials, not selling souvenirs, light food, or drinking water, which can only be collected at the supply station, and entirely using recyclable materials instead of plastic products. Not only at the conference, but also at the official closing reception, no plastic tableware was provided; instead, it used natural materials such as leaves and bamboo forks for guests to use for eating, thus avoiding excessive unnecessary packaging and implementing the commitment to reduce the use of disposable plastics to achieve source reduction.

Conclusion

This conference is one of the very few multilateral international conference venues in which Taiwan was able to participate with fair and reasonable treatment in recent years. It fully demonstrates the long-standing and substantial friendship between Taiwan and Palau. With various government agencies seizing the opportunity and working together, abundant results have been achieved in diplomacy, politics, and maritime expert fields; the next conference is tentatively set to be hosted by Panama in March 2023; Panama also announced that "transparency" will be an important element of the next conference, and encourages participants to make new commitments to support transparent fisheries and maritime transport, use innovative technology and scientific data to combat IUU fishing practices, overfishing, and marine resource depletion. In the future, the Ocean Affairs Council will continue to strive for equal opportunities to participate in international arenas actively, promote multilateral international exchange, deepen people-to-people ties with like-minded countries, and drive momentum for more international participation.

References

- [1] Our Ocean Conference
<https://ourocean2022.pw/> (May 04, 2022)
- [2] Global Fishing Watch: Torch Passed to Panama for Major Ocean Conference
<https://globalfishingwatch.org/news-views/torch-passed-to-panama-for-major-ocean-conference/> (May 04, 2022)

France and the International Agenda on Maritime Challenges

Denis Robin (Secretary General for the Sea)

Keywords: One Ocean Summit, Brest commitments

France has the second maritime domain in the world, which comes along with unique responsibilities regarding its international maritime agenda. Some of them will grow of major importance in the coming years.

The seas and oceans are a source of food, energy and raw materials, a medium for tourism, transportation and trade, and can provide solutions to many global policy challenges. However, the oceans are neither inexhaustible nor immune to damage. Human activity creates pressures on land, brings dangerous pollutants into the ocean, including plastic waste, releases carbon into the atmosphere that leads to warming and acidification of the oceans contributing to the destruction of biodiversity, or sea level rise that threatens the world's coasts.

The ocean, which covers more than 71% of our planet's surface, is of major importance to the global climate system. It absorbs more than 25% of the CO₂ emitted by humans into the atmosphere every year and provides 50% of the oxygen produced on Earth. It also absorbs more than 90% of the heat from greenhouse gas (GHG) emissions, thereby limiting the warming of the air we breathe and playing an essential part in climate regulation.

The 2021 World Ocean Assessment (WOA II) is the major output of the second cycle of the United Nations Regular Process for Global Reporting and Assessment of the States of the Marine Environment, including Socioeconomic Aspects. This report updates the first World Ocean Assessment, providing scientific information from over 300 experts on the state of the marine environment. The study raises alarm on the decrease of the benefits brought by the ocean to the ecosystem: *"the benefits provided by the ocean are increasingly undermined by human actions"*, said the UN Secretary-General, who qualified the findings as alarming. Moreover, today, 90% of world trade, i.e. what we consume on a daily basis, transits through the sea. Globalisation has thus led to a strong dependence on the security of the world's main maritime routes, which pass through straits where traffic can be interrupted.

This is why France is increasing its fight against direct threats, such as piracy and terrorism, but also and above all ensures that the principle of free movement of ships is respected. In order to lead and coordinate the development of the Government's maritime policy, the French Prime Minister created in 1995 a dedicated General Secretary for the Sea, whose role is to propose actions and decisions and to ensure the implementation of the French maritime policy, transversally with the different Ministers having Seas and Oceans subject in their portfolio.

Recently, on the initiative of the President of the Republic, an International Ocean Summit was held in Brest from 9 to 11 February 2022. The "One Ocean Summit" gave a strong political impetus to the international agenda of maritime issues, in particular to bring to a successful conclusion the multilateral negotiations that have an impact on the ocean and to feed the UN Ocean conference (Lisbon, end of June 2022). France has thus shown its willingness to translate the world's shared responsibility in terms of protection of the ocean into concrete actions and commitments in order to raise the international level of ambition. The goal of the summit indeed was to increase the level of commitment of the international community to reduce human pressures on the ocean.

The international agenda and the upcoming multilateral meetings on the protection of the ocean in 2022 represented an opportunity to bring a strong political impetus to the international agenda on maritime issues: Our Ocean Conference 2022 (Palau, 13-14 April 2022), 4th round of negotiations of BBNJ (March 2022), United Nations Ocean Conference (27 June-1 July 2022, Lisbon).

This summit was the first of its kind, prepared in cooperation with the UN and the World Bank, as well as with numerous public, private and civil society partners. It brought together 41 states, representatives of civil society and businesses.

*41 states: Germany, Barbados, Canada, China, Cyprus, Colombia, Comoros, Congo, Republic of Korea, Costa Rica, Ivory Coast, Croatia, Egypt, Spain, United States, France, Gabon, Ghana, Greece, India, Ireland, Iceland, Italy, Japan, Madagascar, Malta, Morocco, Mexico, Monaco, Namibia, Norway, Palau, Panama, Papua New Guinea, Portugal, United Kingdom, Senegal, Seychelles, Tanzania, Tonga, Tunisia.



Source/ Département
vidéo de la
Présidence
de la République

The "Brest commitments" which were adopted during the high-level segment are divided into four general objectives: I. the protection of marine ecosystems and the promotion of sustainable fishing; II. the fight against pollution, in particular plastic; III. an ocean of solutions to climate change; IV. the renewal of ocean governance.

The protection of marine ecosystems and the promotion of sustainable fishing

I. New Marine Protected Areas to reach 30% of marine protected areas by 2030

The creation of protected areas is an essential pillar of the preservation of biodiversity. In this framework, more than 30 new countries joined the High Ambition Coalition for Nature and People which was launched at the One Planet Summit in January 2021, which means that 84 countries now share the goal of protecting 30% of the world's land and seas by 2030.

Moreover, France, Italy, Spain and Monaco committed to reduce and limit speed of ships to protect marine biodiversity in the Mediterranean Sea, and Colombia announced its intention to protect 30% of its EEZ at the end of the current year. France has claimed to have reached 33% of marine protected areas on its territory – thanks in particular to the extension of the French Southern and Antarctic Reserve.

II. End overfishing and verify, control and punish illegal, unreported and unregulated fishing

Illegal, unreported or unregulated fishing accounts for almost a fifth of the world's catch, and undermines efforts to manage fish stocks sustainably. It often comes along with very degraded safety and working conditions for fishermen. 14 countries participating in the One Ocean Summit committed to strengthening the fight against illegal fishing on several fronts:

- 6 countries have committed to ratify the International Maritime Organization's Cape Town Agreement before the October 2022 deadline, which will finally be able to come into force and set safety standards for fishing vessels.
- 2 new countries will ratify the FAO Port State Measures Agreement, which allows for better monitoring of fishing activities at landing ports.
- Several Member States of the European Union have committed to mobilize their State Navy on external missions to strengthen surveillance of illegal fishing, in accordance with the 2008 EU Regulation.

New commitments are expected in order to fight against illegal fishing: as the 12th World Trade Organization (WTO) Interdepartmental Conference takes place in 2022, Emmanuel Macron called on the WTO to ban all subsidies contributing to illegal fishing in 2022. A call that therefore does not concern overfishing while target 6 of SDG 14 on the conservation and sustainable exploitation of ecosystems, which will be assessed at the Lisbon conference on the ocean, aims to prohibit any subsidy contributing to overfishing.

The fight against plastic pollution

9 million tons of plastic are dumped into the ocean each year, 80% of which comes from the coasts and rivers. The fight against pollution was at the heart of the debate, as it affects the entire ocean, has direct consequences for marine ecosystems and human populations. Hage Geingob, President of Namibia, spoke on behalf of the developing countries, which are the main victims of these pollutions: *"We do not produce plastic and yet we are the first to suffer the consequences."*

In order to face the challenge of plastic pollution, the States have called for the adoption of a legally binding treaty on plastic pollution, which has been under discussion for several months, and whose importance was reinforced at the COP26 for Climate in Glasgow and COP22 of the Barcelona Convention. The launch of these negotiations will be discussed at the 5th United Nations Environment Assembly (UNEA), which will take place from 28 February to 2 March in Nairobi. Such an initiative *"will provide a binding international framework to make this commitment a real treaty for the end of single-use plastic"*, according to Emmanuel Macron.

At the Summit, the European Bank for Reconstruction and Development (EBRD), and the European Investment Bank (EIB) have announced to join forces with the French, German, Italian and Spanish development banks to develop the Clean Ocean initiative. This initiative is the largest one dedicated to reducing plastic pollution at sea. Their financial contribution to the fight against plastic pollution should be doubled and reach a total of €4 billion by 2025.

The Summit also allowed Greece, Italy, Colombia, Republic of Korea, the City of Paris and the Central Greece Maritime Region to join the "global commitment to a new plastics economy": the initiative aims at accelerating the transition to a circular economy. India and France jointly launched a multilateral initiative on the elimination of single-use plastic pollution.

An ocean of solutions to fight global change

I. Decrease the environmental impact of maritime transport

The strong growth of maritime transport, driven by world trade, requires a rapid and strong reduction of its nuisances and correlated damages. In this aim, 22 European ship-owners committed to the new Green Marine Europe label, applying very concrete measures in eight areas: underwater noise, polluting air emissions, greenhouse gas emissions, aquatic invasive species, waste management, oily discharges and ship recycling.

In order to reduce air pollution, all Mediterranean countries, and the European Union, have pledged to ask the IMO to create a low sulphur emissions area throughout the Mediterranean on 1 January 2025. France, Spain, Italy and Monaco will also ask the IMO this summer for the creation of a Particularly Vulnerable Maritime Zone in view of the strong presence of cetaceans, in order to limit the speed of navigation and thus reduce collisions.

II. Protect and restore marine ecosystems

The ocean plays a decisive role in the fight against and adaptation to climate change. Some marine and coastal ecosystems (salt meadows, underwater meadows or mangroves) have the capacity to absorb and store large amounts of carbon.

France and Colombia have launched an international blue carbon coalition, which will bring together national and multilateral actors in this field to help finance the restoration of coastal ecosystems, based on shared common and rigorous methodologies.

Many heads of state and business representatives have highlighted the potential of ocean-based solutions to effectively combat and adapt to climate change during the Summit. While the island States (Fiji, Tonga, Palau) have recalled the dramatic consequences of sea-level rise and extreme events on their lifestyles and cultures, the restoration and conservation of coastal ecosystems have been put forward as necessary measures for mitigation and adaptation to climate change. Henry Puna, Secretary General of the Pacific Islands Forum, recalled the claim from the Pacific Islands Heads of State in the framework of the "Declaration on the Preservation of Maritime Areas in the Face of Rising Sea Levels Linked to Climate Change" signed in August 2021. Ahead of this high-level segment, the Sea'ties Forum was also held as part of the One Ocean Summit, bringing together more than 30 mayors and governors from coastal cities around the world – from Stockholm to Bangkok, Jakarta and Lagos. On this occasion, they signed the Sea'ties Declaration calling on national governments and the international community to intensify mitigation and adaptation measures in order to limit the impacts of sea-level rise on coastal cities, the territories and their communities.

The renewal of ocean governance

The One Ocean Summit is the starting point for a series of international events to which the ocean will be central, including the United Nations Ocean Conference in Lisbon in June, but also the COP27 hosted by Egypt in the fall.

Building on this achievement, France and Costa Rica have proposed to organize together in 2024 the next United Nations conference on the Ocean.

The digital revolution is an opportunity to build an integrated model of the ocean, covering physics, chemistry, marine life and human activities. A "digital twin" of the ocean, whose implementation was

announced during the Summit, should be able to inform policy decisions and monitor their effects, enable the marine economy to develop in a way that respects ecosystems and foster dialogue with stakeholders and the public.

The European Union is committed to develop this digital ocean twin that will bring together knowledge and test action scenarios for European blue growth and global governance.

UNESCO is committed to mapping at least 80% of the seabed by 2030.

Ahead of the fourth intergovernmental session on an agreement for the conservation and sustainable use of marine biodiversity beyond national jurisdictions (BBNJ) that was held in March in New York, the Heads of State recalled the urgency of finding an operational agreement by the end of the year. With this in mind, the 27 Member States of the European Union as well as 16 third states have announced the launch of the "High Ambition Coalition for a High Seas Treaty".

France and the Development of the Offshore Wind Industry: State of Play

Anne Legrégeois (Maritime Economy Project Manager, SGMer)

Keywords: offshore wind industry, Climate Energy Law

While scientists are converging on the urgency to act against climate change, the recent report of the Intergovernmental Panel on Climate Change (IPCC) [1], published last fall, reminded us of the importance of reducing greenhouse gas emissions very quickly to limit the potentially catastrophic effects of climate change. The COP26 (26th Conference of the Parties of the United Nations Framework Convention on Climate Change - UNFCCC [2]) organized in November 2021 in Glasgow, Scotland, led to new commitments and actions for the coming decade. Indeed, the transformation needed to move away from fossil fuels must be completed in just three decades and accelerate substantially by 2030.

Some might consider the efforts to be made by a single country to meet its climate commitments to be futile or negligible, given its share of global emissions (about 1% for France). However, in France, as in all industrialized countries, per capita emissions remain above the world average, even more so when the carbon impact of imports is taken into account ("carbon footprint").

An important factor in achieving carbon neutrality by 2050, to which the Member States of the European Union (and France through the 2019 Climate Energy Law) have committed themselves, the installed offshore wind power capacity in Europe is currently 12 GW and must increase to 300 GW by 2050 according to the ambitions and projections of the European Union, representing 20% of total energy production, compared to 3% today. Of this 300 GW, France has a potential of 49 to 57 GW. France is preparing to take an active part in this European objective.

In France, different options have been studied to achieve carbon neutrality in 2050. These options have some common features (lower energy consumption, higher share of electricity, use of renewable energies) but also significant differences in terms of the rate of change in consumption and its distribution by use, the development of industry, the future of nuclear power, and the role of hydrogen.

Last October, the French electricity grid operator, Réseau de Transport d'Electricité (RTE) finalized and published its analysis entitled "Energy Futures 2050" [3] in response to the need to document the options available for energy decarbonization in France. It describes the technical evolution of the energy production system, quantifying the associated costs, detailing the environmental consequences in the broadest sense and explaining the implications for lifestyle.

Several scenarios have been elaborated, each one giving an important or even very important place to offshore wind energy. Indeed, wind power has been perceived as a source of decarbonization but also as a way to improve the robustness of the electrical system and its resilience, by allowing the diversification of the energy mix.

A turning point is being taken to lead simultaneously an accelerated energy policy towards decarbonization and a coherent and efficient industrial policy.

The affirmation of the domestic market and French players

France has been supporting the development of offshore wind energy for 10 years. Three competitive bidding processes for offshore wind farms were launched in 2011, 2013 and 2016. They total 3.6 GW of planned installed capacity, and are divided into seven projects (4 on the Eastern

Channel - North Sea and 3 on the North Atlantic - Western Channel). In addition, four floating wind farms were awarded in 2016. Currently, the calls for tender launched for commercial wind farms represent 2.5 GW for an installed capacity between 2028 and 2029 (1 GW in Channel, 250MW floating in South Brittany, twice 250MW floating in the Mediterranean and 500 to 1GW in the South Atlantic).

I. The new course set in 2022

In 2022, France has set a clear and determined goal of 40 GW of installed offshore wind power by 2050, representing about fifty wind farms in its territorial sea or exclusive economic zone. This new course was set following the report of RTE [3] which, as recalled by the French Minister of Ecological Transition and Solidarity during its presentation in October 2021, directed in any case to double the pace of offshore wind power from 1 to 2 GW per year, in order to have installed and commissioned between 2,000 to 4,000 offshore wind turbines by 2050.

This is how the two vectors of the offshore wind industry development have been accelerated: on the one hand, the creation of the French market for the production of energy from offshore wind turbines, and on the other hand, the industry associated with this market itself (which is also oriented towards export). This deployment and its necessary acceleration constitute an opportunity for each of the actors of the French maritime sector, but also for the countries of export of French goods and services associated with offshore wind energy.

II. Which offshore wind actors, for which needs?

Ports are real industrial tools and are the vector for the deployment of fixed and floating offshore wind farms and their operations and maintenance. French ports are preparing to increase the surface areas dedicated to the construction and storage of wind turbines and their fixed or floating foundations. This involves both the land area (polders) and the water area. A challenge is woven around the necessary investments and authorizations that France is working to facilitate. For both land-based and floating wind energy, the port is a logistics hub with a crucial role.

The shipowners are other key actors. They face the challenge to be able to mobilize investment capacity in specialized vessels very early in the bidding process. This investment capacity is all the easier to stimulate if energy and maritime spatial planning provides visibility and a known timetable as far upstream as possible, which is what France is doing.

The following ship-owning activities are already being carried out by French shipowners in the service of offshore wind energy beyond the French market: transfer of personnel to and from electrical substations and to wind turbines for their maintenance installed at sea; arming of light nautical means; laying of power and optical cables; protection of cables; maintenance work; construction and supply of CTVs (Crew Transfer Vessels). The further the wind farms are from the coast, the greater the need for a large number of them, DSVs (Multipurpose Vessels) and SOVs (Service Operation Vessels) with the capacity to accommodate personnel on board, along with ROV (Remotely Operated Vehicles) services for underwater operations or inspections. The fleet is becoming greener, to be consistent with the purpose of the wind farms themselves. Floating wind power brings a lot of new perspectives to the sector, by using a fleet that is "lighter" than the one used for land-based wind power (which is also a fleet that is pre-existing wind offshore industry. Bourbon, a historical player in the Oil & Gas industry, is a key French player, due to its leading position in the installation of floating wind farms: installation of anchors and cables, towing, with several projects already completed [Portugal and Scotland]).

The integration of the turbines to the float can be done on land, in port, and the transport on site will mobilize more maneuvering and support vessels than imposing lifting vessels. The positioning and anchoring of floats equipped with their turbines, on site and the connection of dynamic cables will also require "lighter" vessels. These vessels will be more standardized (freight assistance, intermediate constructions at sea) and will make it easier to capitalize on pre-existing and adapted French fleets. On

the French market, we still need to develop the fleet dedicated to research campaigns and data collection on areas dedicated to the installation of wind turbines, the fleet for transporting components to be mounted in the port or on site, port and maritime services that are key to the value chain for floating wind. Eventually, a fleet of vessels dedicated to repowering and then dismantling the fields will be required.

A strong mobilization in terms of number of vessels is anticipated in any case. A large volume of ships and barges construction will be associated with this. This could be a development opportunity for French shipyards, but will require the world's shipbuilding industry to step in. With regard to the latter, and if we look ahead to 2030 and the context of renewal of the world fleet of cargo ships, we can ask ourselves whether the supply will be able to meet the demand (Chinese shipyards are increasingly dedicated to the construction of the domestic fleet).

Energy companies are also a key to success: a deep and mutual knowledge of the ecosystems of the different sectors of the industry is essential. Engineering firms and manufacturers are also mobilized through the laying and floating of foundations, towing, anchoring, installation of sub-assemblies, unwinding of cables, lifting and installation of heavy packages, and commissioning of the installation.

RTE, the French electricity grid operator, is a key player in the deployment of offshore wind energy and is responsible for connecting the wind farms to the electricity grid, including the development of the network and interconnection of the different park. The integration of renewable energies, the development of electricity markets and the establishment of regional cooperation require in-depth adaptation of network design and operation. An adequate regulatory framework for the electricity system is essential for these changes to take place successfully. RTE's entity dedicated to international market (RTE International) has teams dedicated to the assistance of authorities (Ministries of Energy, regulators, network operators) to design or develop the regulatory framework for the electricity sector in order to adapt it to new conditions. With extensive experience both in Europe and worldwide, RTEi has the ability to find solutions adapted to each context.

III. Local content: a shared objective with Taiwan

In Taiwan, the Taiwan Bureau of Energy (BoE), in response to industry feedback, has modified local content requirements several times since the first draft, but it appears they remain a major issue for developers. This results, for example, in the requirement that all economic activities in marine engineering and design engineering be local.

In France, and more broadly in Europe, the same work is being carried out to encourage local content on a European scale in order to lower the costs of this decarbonized energy on the one hand, and to create as many jobs as possible on the European territory, for the benefit of the structuring of this sector, which remains emerging.

Confirmation of the existence of French offshore wind energy sector: the opportunity of floating wind energy

I. From land-based to floating

In the European context, and with regard to wind power, the proactive public policies of Germany, Denmark, the Netherlands and the United Kingdom have enabled non-French value chains to structure a dominant position in installation activities thanks to fleets of ships specially equipped for offshore wind power and to experience acquired in heavy work in the North Sea.

However, France is now particularly supportive of floating wind power. The domestic market depends on it, with the objective of improving the acceptability of local populations on the one hand, and the installation of wind farms in areas too deep for land-based wind power on the other, particularly in the Mediterranean. Industrial export opportunities have also been identified.

French offshore wind energy players, particularly floating wind energy, offer industrial solutions and are gathering references, whether they are design and engineering providers (Dedicated for instance to the development of multi-use, multi-project platforms, coupling with hydrogen production, and the development of maintenance strategy with equipment manufacturers.), project developers, builders (Including [but not limited to] the following companies: Chantier de l'Atlantique [CDA] builder of offshore platforms [OSS] for foundations and topside, Nexans, CNB, chantier Allais MSI, Alumarine, Ocea, Socarenam, Piriou, Navalu.) or shipowners (We can mention for example the following companies: Atlantique Maritime Services [AMS] Lamanage, VDC Offshore, Chambon, CERES, JifmarOffshore Services, Finist'Mer, Louis Dreyfus Armateur Group, Prolarge, TSM group.). They are supported by the initiatives of international players involved in projects in France and abroad.

To date, the French MRE sector represents nearly 5,000 direct jobs with €1.5 billion in investments for a turnover of €833 million.

II. The French strategy to accelerate decarbonized energy in favor of floating wind power

The development of floating wind energy will be an opportunity for many French companies to diversify their activities and will be one of the major levers to reach the French objective of 40 GW of installed offshore wind power capacity in 2050, as announced by French President Emmanuel Macron on the day before the opening of the One Ocean Summit. On November 19, 2020, the European Commission released its long-term strategy for marine renewable energy. While there is currently only 12 GW of installed capacity on the coasts of European Member States (the vast majority of which is wind power), the objectives put forward are ambitious: 60 GW of marine renewable energy must be installed by 2030 and 300 GW by 2050. Due to constraints in terms of depth and spatialization, a significant part of this capacity to be installed will be with offshore wind floating technologies.

Floating wind energy is still at a pre-commercial stage of development, but several factors point to a major boom in the period 2020-2030:

- a decline in production costs that is expected to be faster than that which has occurred for land-based wind, particularly due to rapid growth in turbine size and greater confidence in the technologies among players;
- the opening of large areas for offshore wind energy development by removing the obstacle of the depth of the sea bed. As part of France 2030 and in particular the "Advanced energy systems technologies" acceleration strategy, nearly €1 billion will be devoted to the emergence of innovative solutions in the field of photovoltaics, floating wind power, energy networks and accelerating the industrialization of renewable energies.

III. What are the advantages of France in the deployment of floating wind energy?

This strong development of floating wind energy will lead to a race for industrialization giving many French companies the opportunity to diversify their historical activities, i.e. Oil & Gas, marine construction, developers/energy companies. Thanks to the four pilot farm projects financed within the framework of France 2030 and the awarding of the first commercial floating wind farms scheduled for 2022 and 2023, France is now one of the most advanced countries in the development of commercial floating wind energy.

However, it remains for France to take advantage of this positioning to develop a large-scale floating wind industry on our own territory. The presence of the industry would enable France to rely on its own significant engineering and production capacities that already include highly valued segments of offshore wind energy: development and studies, nacelles and blades (the world's largest wind turbine blade in the world was built in France), and electrical engineering for substations and cables. Currently, there are 460 companies positioned along the entire production chain, ready to grow the industry further.

The "Advanced Energy Systems Technologies" acceleration strategy will enable the financing of innovative projects and the development of French ports. The strategy is designed to support the development of new generation floats. These new concepts, integrating a high degree of hydro-aerodynamic coupling between the wind turbine, its floating support, its anchoring and its export cable, are major levers to reduce the costs of floating wind energy making it a viable and competitive solution by 2030.

The State is committed to contributing to the development of a French floating wind industry in terms of construction or assembly of floats and installation of turbines at the dock. This development should enable certain ports, currently dependent on fossil fuels, to diversify and turn to renewable energies. The State will finance, in a first step, the elaboration of an inventory of the ports and lands likely to host floating wind energy activities. In a second phase, the State will help finance projects to modify port infrastructures in order to accommodate industrial production and assembly capacities for floats, launching capacities and installation capacities for turbines at the quayside. Projects for industrial sites for the assembly of floats and factories for substructures or sub-components of floats will also be supported.

The support of technological building blocks aims at accelerating the reduction of costs. The strategy could support the development of more powerful turbines better suited to floating wind turbines, the development of rare earth-free generators, lightweight nacelles and recyclable blades. It can also support the development of direct current connection solutions, floating substations and dynamic high voltage electrical cables. Projects that improve the acceptability of offshore wind farms, especially floating ones, can be supported.

No offshore wind energy without acceptability: the experience of the public debate

It is also necessary to put in comparison the question of the acceptability by the local coastal populations and the users of the maritime spaces dedicated to the installation of the wind farms. It is all the more important initially, the weakness of the generated local employment is sometimes decried, as well as the denouncement of damage to aesthetics and the marine environment. Conflicts of uses on the concerned zones are also anticipated, and particular attention is constantly paid to the public debate.

In France, for each offshore wind project, the French National Commission for Public Debate (CNDP) is tasked with organizing public participation. Since 2018, the French law for a State at the service of a trustworthy society, known as the "ESSOC law", the referral is made by the State upstream of the competitive bidding procedure. The public is thus involved as early as possible in the definition of projects, particularly to inform the decision on the location of the wind farm and its offshore connection.

After these debates, the French local commissions for public debate (CPDPs) produced a report and the CNDP drew up an assessment. In response, the State has submitted a report detailing the lessons it has learned from the public debate and specifying the responses it will provide.

The law on the acceleration and simplification of public action (ASAP) of 2020 provides for the possibility of public debates on the development of several offshore wind projects on the same coastline over period of several years.

From the modalities to work on the acceptability of offshore wind projects to the ability to cross energy planning and maritime spatial planning to reconcile uses in the impacted areas, it remains a daily challenge for public authorities and developers to successfully and efficiently carry out their design, construction and maintenance projects of offshore wind farms.

References

- [1] IPCC Sixth Assessment Report (n.d.), Climate Change 2022: Mitigation of Climate Change.
<https://www.ipcc.ch/report/ar6/wg3/>
- [2] United Nations Framework Convention on Climate Change (n.d.), Conference of the Parties (COP).
<https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop>
- [3] RTE (Oct. 2021), FUTURS ÉNERGÉTIQUES 2050: Principaux résultats.
https://assets.rte-france.com/prod/public/2021-10/Futurs-Energetiques-2050-principaux-resultats_0.pdf

The French Ministry of the Sea and its Major Maritime Policies

Chia-Hua Tsou (Ph.D in sociology from the University Paris Nanterre, Public Relations Center of the Secretariat Office, National Kaohsiung University of Science and Technology)

Kuo-Huan Ting (Institute of Marine Affairs and Business Management, National Kaohsiung University of Science and Technology)

Translated by Linguitronics

Keywords: Ministry of the Sea, public policy, sustainable development

The French Ministry of the Sea (Ministère de la Mer) was established in 1981 in the era of French President François Mitterrand. Since then, when each prime minister formed a cabinet, the powers and responsibilities of the ministry were adjusted. Aside from the fact that cabinet members of different levels were appointed as the minister or a representative of the ministry, there have also been many cases where there were no such cabinet members for several years [1]. On May 15, 2017 French President Emmanuel Macron appointed Édouard Philippe as Prime Minister. Ever since Alain Vidalies, the former Secretary of State for Transport, Oceans and Fisheries (Secrétaire d'État aux Transports, à la Mer et à la Pêche), left office, the Ministry of Ecological Transition and Solidarity (Ministère de la Transition écologique et solidaire) assumed responsibility for ocean affairs until President Macron stressed the importance of maritime strategy [2] at the French Ocean Economy Summit in December 2019 and in a televised speech on June 14, 2020, when the Ministry of the Sea was reinstated into the cabinet of the new Prime Minister Jean Castex. Born in the seaside city of Saint-Malo, Ms. Annick Girardin, the then 3-year Minister of the Overseas, was officially appointed as the Minister of the Sea on July 7, 2020. Although the powers and responsibilities of the Ministry of the Sea have undergone many changes, as one of the important EU member states, France plays a vital role in the decision-making of EU maritime affairs. This article attempts to introduce the responsibilities, composition, and important maritime policies of the Ministry of the Sea by reviewing much of the relevant literature in French, in hopes that the content of this article can provide reference for those interested in maritime affairs in Taiwan.

What are the responsibilities of the new French Ministry of the Sea?

The current Minister of the Sea is Annick Girardin, and there were only two Ministers before her: Louis Le Pensec, who served from 1981 to 1983 and 1988, and his successor, Jacques Mellick, appointed as the Minister Delegate in charge of the Sea (1988-1991) [3]. The former resigned in 1983 because the then Prime Minister proposed that he become the Secretary of State for Transport. After the return of the Ministry of the Sea, he emphasized that there were fundamental differences between a minister who could fully exercise his functions and powers and a minister who is a subordinate of the Prime Minister or is under the jurisdiction of other ministers and secretaries of state. The mayor of Quimperlé, Michaël Quernez, who is also the president of the Bretagne Docks Association and the president of the United Fisheries and Recreation Union, said that the Minister of the Sea is a lateral and cross-departmental position that has to deal with maritime activities and transport, ecology, energy transition, resources, territorial planning, and tourism affairs. This is why the country needed a Minister of the Sea.

As Annick Girardin stated in her inauguration manifesto: "France has a maritime exclusive economic zone of more than 11 million square kilometers, with more than 391,000 marine jobs, and its biodiversity accounts for 10% of global biodiversity. Therefore, taking over as the Minister of the Sea will be a great challenge for me" (see P.18). The public is also quite concerned about how the new minister will lead the Ministry of the Sea. Thereupon, she began by proposing four key factors for the reforming of the Ministry of the Sea: Training, Growth, Sovereignty and Solidarity, as the first step toward making the 21st century the "maritime century" [4]. The duty of the Ministry of the Sea is to formulate and implement national and international policies in different aspects of the maritime domain. Its responsibilities cover maritime services and national maritime operations, ocean and coastal territories, marine culture and exploration, seafarers and professions, sea shipping and marine industries, and aquatic products [5].

Organizational Structure of the Ministry of the Sea

The organizational structure of the Ministry of the Sea includes three major parts: the central administration, state administration services, and local services.

I. Central Administration (Administration centrale)

The central administration of the Ministry of the Sea consists of the General Secretariat (Secrétariat général), the General Inspectorate of Maritime Affairs (Inspection générale des affaires maritimes, IGAM), and the Directorate of Maritime, Fisheries, and Aquaculture (Direction des affaires maritimes, de la pêche et de l'aquaculture, DGAMPA). It is worth mentioning that 18 months after the establishment of the Ministry of the Sea (March 2 2022), the Directorate of Maritime, Fisheries, and Aquaculture was established by the merger of the former Department of Maritime Affairs (Direction des affaires maritimes, DAM) and the former Department of Marine Fisheries and Aquaculture (Direction des Pêches Maritimes et de l'Aquaculture, DPMA); it is jointly managed by the Minister of the Sea, the Minister of Agriculture and Food [6]. From this, the French government's vision for maritime sustainable development is evident.

The Minister of the Sea also participates in the affairs of the General Secretariat (Secrétariat général de la mer, SGMer), cooperates with the Minister of Ecological Transition and Solidarity, the Minister of Agriculture and Food, and Minister of European and Foreign Affairs, and is appointed by the Prime Minister as the Chairman of the Inter-ministerial Committee for the Sea (Comité interministériel) de la mer, CIMer and the chairman of the National Council of the Sea and Coast (Conseil national de la mer et des littoraux, CNML).

II. State Administration Services (Services à compétence nationale)

- i. Armament Bureau of Lighthouses and Signals (Armement des phares et balises, APB): Led by a fleet of about 20 ships, the APB carries out the tasks of installing and maintaining marine signaling devices along the coast of France for the purpose of warning and marking routes and port canals to ensure marine navigation safety.
- ii. National School of Safety and Administration of the Sea (École nationale de la sécurité et de l'administration de la mer, ENSAM): Committed to the training of French, European, and international civil servants specializing in the management of maritime affairs, including maritime administrators, maritime inspectors and national public work engineers [7].

III. Local Services (Services déconcentrés)

Including the Directorate of Interregional Maritime of France and the Directorate of Overseas Maritime

(DIRM dans l'Hexagone et DM en outre-mer), the Departmental Directorate of Territories and the Sea (DDTM), ship safety centers (CSN), maritime monitoring and search & rescue coordination centers (CROSS), and control and monitoring mechanisms (DCS).

Public Bodies Regulated by the Ministry of the Sea

Public institutions are the main policy actors of and are overseen by the Ministry of the Sea. Social seafarer protection organizations include the National Supreme School of Maritime (École nationale supérieure maritime, ENSM) and the National Naval Veteran Association (Établissement national des invalides de la marine, ENIM). There are 11 major seaports under the joint supervision of the Ministry of the Sea and the Ministry of Ecological Transition and Solidarity: Bordeaux, Dunkirk, Guadeloupe, Guyana, Le Havre, Marseille, Martinique, Nantes-Saint-Nazaire, Reunion Island, La Rochelle, and Rouen, and 2 autonomous ports in Paris and Strasbourg. In addition, the National Institute for Ocean Science (Institut français de recherche pour l'exploitation de la mer, IFREMER) is jointly supervised by the Ministry of the Sea, the Ministry of Ecological Transition and Solidarity, the Ministry of Agriculture and Food, and the Ministry of Higher Education, Research and Innovation.

The Ministry of the Sea is also involved in the governance of the following public bodies: The Directorate of Biodiversity of France (Office français pour la biodiversité, OFB), the Waterways Navigation Authority of France (Voies navigable de France, VNF), the Conservatory of the Littoral (Conservatoire du littoral), Cote d'Azur, Guadeloupe and Port Cros National Parks (Parc national des Calanques, de Guadeloupe, de Port Cros), and the Coastal Management Planning Unit of Guadeloupe and Martinique (les agences des 50 pas géométriques de Guadeloupe et de Martinique).

The main public policies of the Ministry of the Sea

The public policy of the Ministry of the Sea covers the seven major categories listed above. This article describes the relevant policies of the French marine environment, culture, and economy.

Table 1/ Public Policy of the Ministry of the Sea

Aspect	Main Content
I. Maritime state operations and maritime services (Action de l'Etat en mer, services maritimes)	<ul style="list-style-type: none"> • Maritime rescue and monitoring • Signaling for ocean routes • Management of marine environment and fisheries • Modernization of maritime administration
II. Maritime professions and seafarers (Métiers et gens de mer)	<ul style="list-style-type: none"> • Maritime professions, training and skills • Legal and health rights of seafarers • Social protection for seafarers
III. Marine recreation, sports and recreation (Palisance, sports et loisirs nautiques)	<ul style="list-style-type: none"> • Aquatic recreational activities and yachting • Recreational pier
IV. Maritime heritage, exploration and discovery (Patrimoine, exploration et découverte de la mer)	<ul style="list-style-type: none"> • Marine knowledge
V. Oceans, coasts, and impact (Territoires maritimes, littoraux et rayonnement)	<ul style="list-style-type: none"> • Marine, coastal strategy and maritime planning • European and international maritime operations • Coastal area
VI. Marine environment, innovation and pollution prevention (Milieu marin, innovation et lutte contre les pollutions marines)	<ul style="list-style-type: none"> • Marine Protected Areas (MPAs) and knowledge • Marine renewable energy and innovation • Marine pollution prevention
VII. Blue economy (Économie bleue)	<ul style="list-style-type: none"> • Harbors • Trading vessels • Naval, navigational, and technological innovation industries • Ship safety and ecological transition • Fisheries and aquaculture

Source/ <https://mer.gouv.fr/politiques-publiques>

I. Maritime heritage, exploration, and discovery

- i. In terms of understanding the ocean, with the Prime Minister or the Minister of the Sea as its chairman, the National Council for the Sea and Coast (Comité pour la recherche marine, maritime et littorale) plays an important advisory role and establishes a communication mechanism between scientific research institutes and local management services.
- ii. On January 10, 2021, Minister of Culture Roselyne Bachelot-Narquin and Minister of the Sea Annick Girardin appointed Henry Masson as the Regional Administrator of the historic area of Bretagne for the promotion of the marine heritage of France and for the devising of protective and developmental strategies [8]. Masson paid special attention to the marine heritage of lighthouses, and jointly proposed management guidelines and measures with the Directorate of Maritime to stimulate the national interest in the "French Seascape". In October 2021, the Ministry of the Sea also published an introduction to lighthouses in the French mainland and overseas territories, detailing the history of lighthouses, the World Heritage-listed Cordouan Lighthouse, the distribution of existing lighthouses, and information on public visits [9].
- iii. On October 23, 2020, the IFREMER announced the new autonomous submarine Ulyx, which is capable of diving to a depth of 3,000 – 6,000 meters. With its multi-scale observation capacity, the Ulyx can see from afar and study up close, and as it is equipped with particular instrumentation, a wider range of parameters can be collected. This innovative scientific design has perfected the configuration of French marine research vessels, taking marine environmental protection and restoration to the next level [10].

II. Marine environment, innovation and marine pollution prevention and control

- i. In order to protect marine biodiversity, the marine policy of France combines sea users, elected representatives, and experts with the management of marine space to form a coherent network of marine protected areas (MPAs) [11].
- ii. For marine renewable energy and innovation, France supports everything from research projects to technological and commercial deployment, and hopes to achieve the goal of renewable electricity accounting for 40% of the final consumption by 2030. Wind electricity generation is one with the most potential. Since 2012, seven offshore wind farms have been approved and are in operation. In the future, more offshore wind farms will be built in Normandy, southern Bretagne, the Mediterranean Sea, and the South Atlantic Ocean area, providing up to 15,000 direct and indirect employment opportunities [12].
- iii. France has made various efforts to combat marine pollution, including the signing of the SAILS Charter (guidelines for shipping practices to reduce environmental impact), the Tony de Brum Declaration (to reduce greenhouse gas emissions, and an aim to limit global warming to +2°/+1.5°C), the Intercontinental Oil Pollution Program (POLMAR/Terre) (to prevent oil pollution along the French coast), and to combat air pollution from ships (to reduce sulfur content in fuel). In addition, France has also signed the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea [13].

III. Blue Economy

The Blue Economy is an economic term related to the development, protection, and regeneration of the marine environment. The Blue Economy policy of the French Ministry of the Sea pays special attention

to the regeneration of seaport energy, technological innovation of the maritime industry, ship safety, and ecological transformation. First, seaport activities include loading and unloading, warehousing, construction, and transportation services. Due to the impact of the current business model, seaports must be able to accommodate larger ships and commercial ships; and developing the utilization of renewable energy gives seaports the potential of becoming energy hubs. Secondly, shipbuilding is a long process, and in the event of an economic crisis, there may be excess production capacity. Future requirements for ship performance and energy efficiency will also require fleet renewal or transformation. Finally, activity clusters such as port logistics, maritime transport, shipbuilding, and ship repairing have all increased traffic congestion and pollution, which are challenges that need to be addressed by developing a Blue Economy [14].

Conclusions

In the past, French maritime affairs have often been subordinated to the Prime Minister or under the jurisdiction of the Ministry of Ecological Transition and Solidarity, the Ministry of Transportation, and other ministries. In response to the necessity of integrated management of maritime affairs, the Ministry of the Sea was reformed in 2020 and became a first-class government authority of France, carrying on the mission of making the 21st century the maritime century. In order to follow closely to the formulation and implementation of marine and coastal policies, the affiliated organizations of the Ministry of the Sea work closely with inter-ministerial associations and local management services. The relevant public policies of the Ministry of the Sea, especially those relating to marine heritage, marine exploration, marine environment, technological innovation, and the Blue Economy mentioned in this article, focus on the protection of marine resources and sustainable development. Just as Christian Buchet, a professor at the Catholic University of Paris, emphasized, we cannot survive without the oceans, and protecting the oceans means protecting our future [15].

References

- [1] Assemblée nationale, Tous les gouvernements depuis 1958.
<https://reurl.cc/j1M7kZ> (Apr. 4, 2022)
- [2] Les Echos (July 7, 2020), Le grand retour du ministère de la mer.
<https://reurl.cc/e3vxOW> (Mar. 22, 2022)
- [3] Franceinfo (July 7, 2020), Ministère de la mer : "quelle sera sa politique pour que ce ne soit pas une coquille vide ?", Louis Le Pensec.
<https://reurl.cc/Er87om> (Mar. 22, 2022)
- [4] Ministère de la mer.
<https://mer.gouv.fr> (Mar. 22, 2022)
- [5] Ministère de la mer (Mar. 2, 2022), Missions et Organisation.
<https://mer.gouv.fr/missions-et-organisation> (Mar. 22, 2022)
- [6] Ministère de l'agriculture et de l'alimentation (Mar. 2, 2022), Création de la Direction générale des affaires maritimes, de la pêche et de l'aquaculture (DGAMPA).
<https://reurl.cc/2ZM0am> (Apr. 4, 2022)
- [7] Ministère de la transformation et de la fonction publiques (Oct. 20, 2021), Les écoles ministérielles - Ecologie.
<https://reurl.cc/q5zd7y> (Apr. 4, 2022)
- [8] Ministère de la mer (Oct. 1, 2021), Valoriser et faire connaître le patrimoine maritime français : Henry Masson est nommé par les ministres de la culture et de la mer.
<https://reurl.cc/2ZMg0m> (Apr. 9, 2022)
- [9] Ministère de la mer (2021), Les phares, patrimoine des côtes de France (Paris : Ministère de la mer), 2-24.
<https://reurl.cc/p1nyvQ> (Apr. 9, 2022)
- [10] Ministère de la mer (Oct. 22, 2020), Ulyx, le nouvel engin sous-marin de la flotte océanographique française, pour mieux connaître l'océan et les grands fonds.
<https://reurl.cc/b24RxE> (Apr. 9, 2022)
- [11] Ministère de la mer (Dec. 7, 2020), Le patrimoine marin et les aires marines protégées françaises.
<https://reurl.cc/8o4nLd> (Apr. 4, 2022)
- [12] Ministère de la mer (Mar. 8, 2021), Énergies marines renouvelables et innovation.
<https://reurl.cc/GxZrRd> (Apr. 4, 2022)
- [13] Ministère de la mer (Mar. 5, 2021), Lutte contre les pollutions marines.
<https://reurl.cc/1Zj4NY> (Apr. 4, 2022)
- [14] Ministère de la mer (Mar. 29, 2022), Sécurité et transition écologique des navires.
<https://reurl.cc/A7ngn3> (Apr. 10, 2022)
- [15] Institut Catholique de Paris (Oct. 1, 2021), Journée mondiale de la mer - Rencontre avec Christian Buchet.
<https://reurl.cc/NA1XXp> (Mar. 21, 2022)

The French Research institute for Exploitation of the Sea (Ifremer)

European and International Affairs, Ifremer

Keywords: Ifremer, ocean science research, ocean observation

The French Research institute for Exploitation of the Sea (Ifremer) is a national institute for integrated ocean science research and founded in 1984 through the merge of two institutes: Marine Fisheries Scientific and Technical Institute (ISTPM) and the National Centre for Exploitation of the Oceans (CNEXO). Ifremer operates under the joint supervision of the French Ministries for Higher Education, Research and Innovation, for the Ecological Transition, for Agriculture and Food and for the Sea. With 1,500 staff and an approximate annual budget of 230 million euros, Ifremer operates in 5 centres and 19 coastal stations distributed along the French metropolitan coastlines and in French overseas territories, such as the Pacific Centre in the French Polynesia and the New Caledonia.

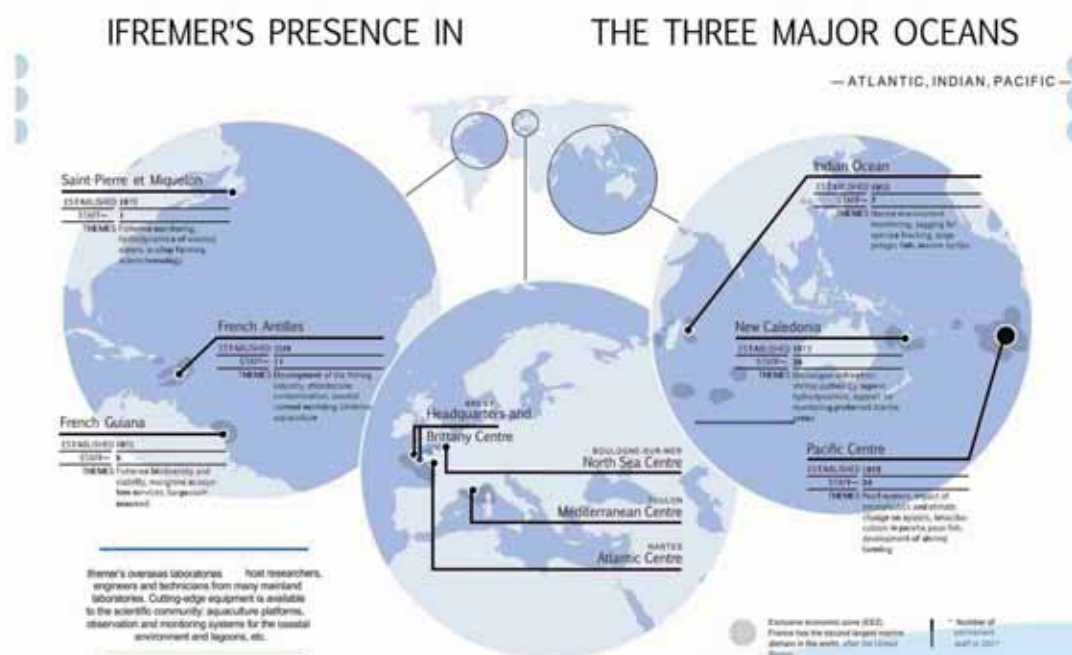


Figure 1/ Ifremer's presence in the three major oceans
Image by Ifremer

The institute relies on its observational and monitoring capacities to advance science, expertise and innovation to protect and restore the ocean, to use sustainably marine resources and to manage and share ocean data, information and knowledge. The marine data portal [1] at Ifremer gathers all information collected across all themes nationwide and facilitates access to other European and international platforms that Ifremer manages or takes part in. Ifremer's research topics stretch from the coast to the deep sea, from studying marine ecosystems and biodiversity, identifying sustainable exploitation of marine resources, learning about ocean dynamics to exploring deep ocean frontiers. To this end, Ifremer designs and builds marine research and monitoring infrastructures, develops tools for observation and scientific investigation and manages databases.

On the observational front, for example, Ifremer houses Euro-Argo [2] (The Argo network is a global array of more than 3,500 autonomous instruments, deployed over the world ocean, reporting subsurface ocean properties to a wide range of users via satellite transmission links to data centres), the European coordination office of the international Argo programme, acts as a key driver for the coastal research infrastructure network (ILICO [3], JERICO [4]) for a holistic appraisal of coastal marine system changes and is a co-leader of EMSO-France, the national component of ERIC EMSO network for the multidisciplinary seafloor and water column observatories [5]. This leadership ensures observation activities integrated in the European & international landscapes and facilitates mutual accesses to research infrastructures and data products.

Today, the energy transition is a crucial enabler of sustainable development and climate resistance and the sector of offshore renewable energy represents great potential. Ifremer is a member to the French Institute for the Energy Transition for offshore renewable energies, France Energies Marines [6], and leads the Carnot Institute MERs [7] (marine engineering research for sustainable, safe and smart seas) to scale up our contributions in this sector. The Carnot Institute is a public laboratory-conducted network to develop and address the needs of partnership-based research. The Institute Carnot MERs is the first one dedicated to the ocean and supports companies in the development of maritime activities. The research infrastructure for marine engineering research at Ifremer is presented by the THeoREM at national level [8] and Marinerg-i [9] through the European network. To support the development of offshore engineering, the hydrodynamic and mechanical test facilities operated at Ifremer can test offshore equipment and models of posed, floating or underwater systems. These include the deep wave or current-generating pools for hydrodynamic studies, test benches for the durability of polymers and composite materials or hyperbaric tanks for materials in the pressurized environment (deep-sea immersion simulations).



Figure 2/Testing of the floating wind platform in the deep-water basin at Ifremer
Image by Ifremer/ O.Dugormay



Figure 3/ Launch of the AUV 6000 Ulyx from R/V Pourquoi Pas?
The Ulyx has a capacity to dive down to 6,000m depth and to accomplish a mission up to 48 hours of autonomy
Image by Ifremer, S. Lesbats (2022)

Ocean Decade Laboratories Projects and Activities

As a state-owned public industrial and commercial institute, Ifremer is in addition endowed with missions on public policy advice and technology transfer through public-private partnership. For the former, the French government regularly enlists Ifremer to help assess marine resources and the conditions of resources use, such as for the deliverables for the European directives Water Framework Directive, the Marine Strategy Framework Directive, the Common Fisheries Policy or for the national biodiversity strategy and other animal health or aquaculture policy issues, etc. Because marine research possesses enormous potential for innovation and leads to competitiveness and growth, Ifremer goes beyond its objectives of producing knowledge and contributes to economic development by creating economic value from its studies, and transfers this value to the socio-economic sectors, such as underwater systems, operational oceanography, marine biotechnologies, fisheries science, aquaculture, environmental monitoring and energy and mineral resources. It is the Institute's ambition to share the benefits of this "blue growth" with companies, corporate groups and SMEs through its proactive strategies to foster an environment of innovation.

Capacity in coordinating French research vessels and underwater systems

The French Oceanographic Fleet (FOF) [10][11] is a designated very large research infrastructure reorganised and operated by Ifremer since 2018. It comprises all the naval resources, including six deep-sea vessels (ranging from 30m to 120m in length), five coastal vessels, seven research station vessels, manned and autonomous submersibles and other underwater devices. The Fleet undertakes an average of 40 deep-sea cruises and 50 coastal cruises every year from conducting scientific observations (marine geoscience, physical & chemical oceanography, marine biodiversity and palaeoceanography) to surveillance activities (hydrography, fish stock, survey in/for the economic exclusive zones [EEZ], coastal environment or hazard assessment) for the government. This single operational structure receive budget entirely from the Ministry of Research since 2018. The independent scientific advisory boards (coastal & high-seas) evaluate the cruise proposals by their scientific merits once a year for the high-sea applications and twice a year for the coastal ones. Based on their ranking and geographic locations of the research cruises, the Fleet management committee then programmes the ship schedules accordingly.

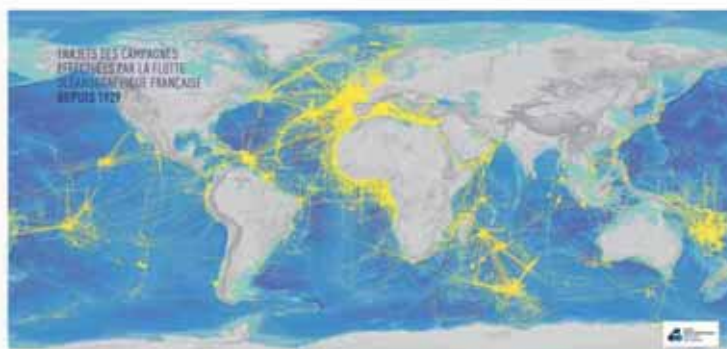


Figure 4/ Caption: Journey made by the French Oceanographic Fleet since 1929
(cc: Ifremer)

Image by Ifremer

Figure 5/ Giant coring system in action from the R/V Marion Dufresne (<https://www.flotteoceanographique.fr/en/Facilities/Tooling/Sediment-Sampling/Gravity-Corer>)

Source/ I. Saumermilch, Institut polaire français



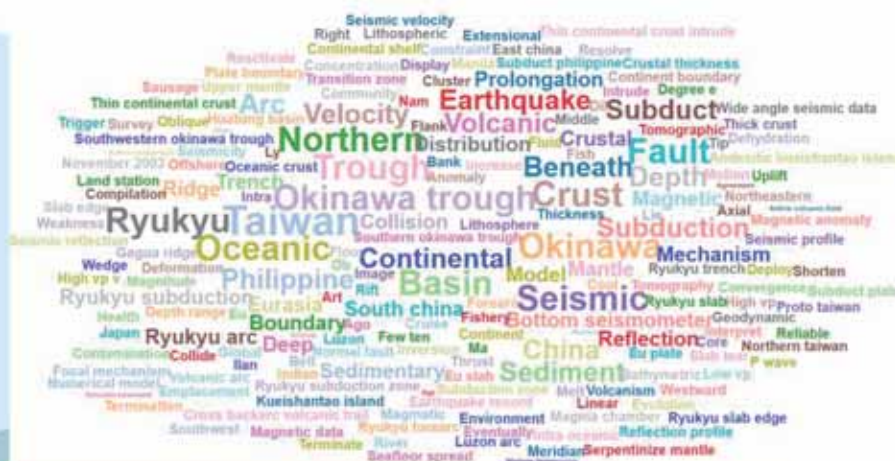
During the COVID-19 pandemic, the sea-going activities faced more challenges due to different COVID-prevention protocols among collaboration entities and vessel operators. For example, an underwater volcano discovered in 2019 offshore Mayotte in the Indian Ocean [12] poses potential threats to people living on the surrounding islands and requires regular sea-going surveys. In order to ensure a continuous collection of data and to carry out a multibeam echosounder observation throughout 2020, the team had to seek supports from the French navy and a private company. For the later, as the scientists cannot be on board, they adapted ways to conduct the survey remotely, including real-time acoustic data processing and, based on the data, instructing the company for the next step.

Among the FOF vessels, the one that people in Taiwan are most familiar with is perhaps the R/V Marion Dufresne (R/V stands for research vessel), missioned for the renowned IMAGES programme, amongst which the IPHIS MD106 cruise in 1997 for the paleo-environment study in the south-west Pacific [13]. Her last voyage to Keelung & Kaohsiung was in 2018 for the research cruises EAGER (MD214) and HYDROSED (MD215). The objectives of the cruises were to find the traces of extreme events, major earthquakes, tsunamis, eruptions, and mega-typhoons, in marine sediments and to reconstruct paleo-hydrological variability in the tropical western Pacific. The RV Marion Dufresne offers the best deep-sea coring capacity to date that is capable to obtain a maximum length of the sediment up to 70m of excellent quality. During the cruise EAGER, the crew collected 32 sediments cores, reaching up to a maximum of 46m in length, and 14 interface core samples. Through these sedimentary records, the French and Taiwanese scientists could identify the past tsunami and volcanic eruptions. This was also the very cruise that contributed to the first discovery of gas hydrates in Taiwanese waters.

A long history of collaboration with Taiwan

There is a long and continuous history of collaboration between Ifremer and Taiwanese researchers, mostly from the Universities, the Academia Sinica and, to a less extent, with the Central Geological Survey, Taiwan Ocean Research Institute, and the Animal Health Research Institute. Most of the collaboration have been supported by the Campus France-MOST PHC Orchid for mobility, the national funding agencies ANR-MOST joint call programme, the international partnership programme of the CNRS or through the postgraduate training programmes (For example the CNRS partnership programme "D3E From Deep Earth to Extreme Events"). The first subject of collaboration traces back to the 1980s under the Western Pacific Programme on the Okinawa back-arc basin study [14]. This cooperation led to training of PhD students and development of infrastructure such as the ocean-bottom seismometers (MicROBS). The prestigious Franco-Taiwanese Scientific Grand Prize of the French *Académie des science* has recognised this contribution and awarded in 2014 to Prof. Shu-Kun Hsu, an Ifremer-trained researcher, and his doctoral advisor and later long-term collaborator Prof. Jean-Claude Sibuet [15].

Figure 6/ Key words of joint publications between Ifremer and Taiwan-based researchers
Source/ data extracted from 45 Web of Science index record between 1987 and 2018



Endeavouring a mission for the ocean

The ocean connects, sustains and supports us all. It is therefore primordial to keep a healthy and resilient ocean we need for the future we want. Scientific understanding of the ocean's responses to pressures through observation and measurement is fundamental for a management action towards the goals of the sustainable development. Ifremer endeavours to deliver the science we need for the ocean we want. Under the United Nations Decade of Ocean Science for Sustainable Development vision, Ifremer actively participates and leads several endorsed Decade actions. For example, I. we organised a *Decade Activity One Ocean Science* [16] that gathered global partners to raise the awareness of the ocean science that matters, II. we co-lead with CNRS a *Decade Contribution "A ocean of solutions-Ocean-Climate"* to support the research projects through funding, and III. we coordinate a Decade Programme "One Ocean Network for Deep Observation (OneDeepOcean)" that aims to federate international observatory networks to facilitate knowledge integration, to encourage technology innovation and to develop capacity building through training. OneDeepOcean is also part of the deep-sea community of practice [17] that work together for more transformative actions to unveil and protect the last frontier of the ocean.

Under this global recognition of ocean's central role for the 2030 sustainable development agenda, Ifremer will continue to deliver its mission and vision thanks to its prodigious expertise, multiple research infrastructures, and the international partnerships. The ocean science is experiencing a transformative process, with initiatives such as ocean literacy and citizen science that are bridging the research community with the society closer and are engaging each other better in this connected ocean. Two examples of citizen sciences initiatives at Ifremer Deep Sea Spy in annotating biological images taken in the Atlantic and Pacific Oceans [18] and Phenomer in monitoring phytoplankton seawater discoloration [19]. To join the ocean momentum, apart from institute's representation in several European and international organisations for policy advices through expert working groups, Ifremer also takes an active role in recent events such COP26 in Glasgow 2021, One Ocean Summit in Brest 2022 and the UN Ocean Conference in Lisbon 2022.

For more information, visit <https://wwz.ifremer.fr/> @Ifremer_fr

References

- [1] <http://en.data.ifremer.fr/>
- [2] Euro-Argo, <https://www.euro-argo.eu/>
- [3] ILICO, <https://www.ir-ilico.fr/en>
- [4] JERICO, <https://www.jerico-ri.eu/>
- [5] EMSO France, <https://www.emso-fr.org/EMSO-France>
- [6] 法國海洋能源 <https://www.france-energies-marines.org/en/>
- [7] MER, <https://carnot-mers.com/>
- [8] <http://theorem-infrastructure.org/>
- [9] <http://www.marinerg-i.eu/>
- [10] https://wwz.ifremer.fr/flotte_en/
- [11] <https://www.youtube.com/c/IfremerTV/videos>
- [12] Feuillet, et al. (2021). Birth of a large volcanic edifice offshore Mayotte via lithosphere-scare dyke intrusion, Nature Geoscience, 14: 787-795.
- [13] <https://campagnes.flotteoceanographique.fr/campagnes/97200010/>
- [14] Sibuet et al (1987). Back arc extension in the Okinawa Trough, Journal of Geophysical Research, 92, 14041-14063.
- [15] <https://www.academie-sciences.fr/en/Laureats/laureats-2014-du-prix-de-la-fondation-scientifique-franco-taiwanaise-shu-kun-hsu-et-jean-claude-sibuet.html>
- [16] <https://oneoceanscience.com/>
- [17] <https://en.unesco.org/news/decade-actions-explore-deep>
- [18] <https://www.deepseaspy.com/en>
- [19] <https://www.phenomer.org/>

French Marine Natural Park (parc naturel marin français)

Ju-Ping Ye (Assistant Professor, Department of Urban Planning, National Cheng Kung University)

Translated by Linguitronics

Keywords: Exclusive Economic Zone

France boasts one of the largest exclusive economic zones (EEZ) in the world, covering an area of more than 10 million square kilometers (*Wikipedia* ranks the French EEZ as the largest, while the French Ministry of Ecological Transition and Solidarity website considers itself second largest [1]). France has been devising improved marine conservation tools of its own since protection and restoration of biodiversity were put forward by the 1992 Earth Summit in Rio as important means to achieve sustainable development, and the European Parliament issued Directive 2000/60/CE [2] water policy on October 23, 2000 that first expanded to coasts and seas, as well as the 2002 World Summit on Sustainable Development in Johannesburg in which countries acknowledged the importance of biodiversity and expressed their commitment to developing a marine conservation network. At the 10th Conference of the Parties (COP10) of the United Nations Framework Convention on Climate Change (UNFCCC), held in Nagoya in 2010, countries promised to designate 10% of their sea areas as protected areas by 2050. However, as the threat of climate change intensified, the "Global Ocean Treaty" was held in New York on March 7-18, 2022, for intergovernmental negotiations. Its goal is to protect at least 30% of the ocean by 2030 (30x30). Although no consensus was reached, the 30x30 vision still has the support of the majority of countries, and it is expected to submit a draft amendment in May which it will submit to the meeting in August [3].

France has many tools to protect sea areas, such as national parks, Natura2000, species reserves, ecological reserves and cultural sites designated by the United Nations Educational, Scientific and Cultural Organization (UNESCO), wetlands designated by the Convention on Wetlands, as well as maritime conventions signed with other countries, such as the Nairobi Convention governing the Western Indian Ocean of some East Africa countries in 1985, the Cartagena Convention governing the Caribbean Sea in 1986, the Barcelona Convention governing the Mediterranean in 1995, and the OSPAR Convention governing the Northeast Atlantic in 1998. However, the complexity of the sea-land interface still brooks no effective tool to manage both the seashore and ocean within the range of 200 sea miles (EEZ). Serge Lepeltier, French Minister of the Environment in 2004, proposed the Marine Natural Park (parc naturel marin français, PNM) concept, the legislation for which was passed on April 14, 2006. The legislation echoed the recommendations for planning and managing the ocean at the first international workshop on Marine Spatial Planning at UNESCO in 2006. There are three main tasks for PNMs: I. Identify the field; II. Protect the ecosystem; III. Attain sustainable development of marine activities. PNMs are considered to be the most sophisticated of all French maritime protection measures. This new tool also helps France achieve the goal of protecting 30% of the ocean by 2022, ahead of schedule (the protected area of the sea area will reach 33% in 2022, compared to 0.3% in 2006, 0.8% in 2009, 3.8% in 2013, 16.3% in 2014, 23.5% in 2019, and 33% in 2022 [1]).

Regarding the establishment of its PNMs, France has set 8 conditions [4]: I. Conserved species, heritage, or species and habitat requiring continuous conservation (rare, threatened species); II. Non-conserved

species, but specific conservation targets (exploited fish species, species that are abundant and important in the local ecological chain); III. Key ecological functions (spawning, seedbed, nursery, productivity, rest, food, migration, etc.); IV. Good condition of marine waters; V. Sustainable use of resources; VI. Sustainable development activities; VII. Marine cultural heritage; VIII. Possesses social, economic, scientific, and educational added value. PNMs must meet all 8 conditions.

The planning of PNMs attaches great importance to stakeholders, including the users and residents of the sea area, elected representatives, and scientific researchers. It usually takes 2-3 years to reach a consensus before legislation is proclaimed. The content of the plan should include at least 3 items: I. Delineated scope after comprehensive consideration of ecology and use; II. Development positioning, which is the guide for all follow-up actions; III. The management committee is the management body of the marine park, and its members shall include various sea users.

After legislation, active preparations began. The initial goal was to set up 10 PNMs, but Golfe Normand-Breton finally announced the termination due to local opposition. On June 8, 2021, Glorieuses was abolished and converted into a national nature reserve [5], and 8 PNMs remain.

Table 1/ Date of establishment, area and number of management committee members for French PNMs

	Iroise	Mayotte	Golfe de Lion	Glorieuses	Estuaires Picards et de la Mer d'Opale	Bassin d'Arcachon	Estuaire de la Gironde et de la mer des Pertuis	Cap Corse et de l'Agriate	Martinique
Date of establishment	2007. 9.28	2010. 1.18	2011. 10.11	2012. 2.22	2012. 12.11	2014. 6.5	2015. 4.15	2016. 7.15	2017. 5.5
Area (km ²)	3,500	68,800	4,010	43,500	2,300	435	6,500	6,830	48,900
Number of committee members	49	41	60	20	60	56	70	48	53

Source/ each PNM. 3 in the Atlantic: Iroise [6], Bassin d'Arcachon [7], Estuaire de la Gironde et de la mer des Pertuis [8]; 2 in the Mediterranean: Golfe du Lion [9], Cap Corse et Agriate [10]; In the English Channel/North Sea: Estuaires picardset de la mer d'Opale [11]; In the Indian Ocean: Mayotte [12]; In the Caribbean Sea: Martinique [13]

The parent agency of the PNMs is the Marine Conservation Agency (Agence des Aires Marines Protégées, AAMP) under the Ministry of Ecological Transition and Solidarity. AAMP is responsible for providing financial, technical, and human support. After establishment, the management of the park becomes the responsibility of the management committee. The responsibilities of the committee are to follow the development position set at the time of the establishment, formulate guidelines, and formulate an inter-departmental management plan for the next 15 years, which should include specific measurable marine health and management performance indicators. Members of the committee include AAMP personnel. For example, the first established Iroise PNM has about 20 AAMP members, including technical personnel, residents, and administrators.

The main task of the committee is to supervise, communicate, and stimulate local residents' awareness of marine protection. Although members do not have the power of law enforcement, they can implement policies through existing law enforcement agencies, such as those governing fishing, environmental protection, and cultural assets. The committee has the right to review all activities within its scope. For activities that have a major impact on the sea area, the committee has power of veto and can request handover to pertinent agencies. For example, on June 17, 2015, the management committee of Glorieuses voted against the subsea drilling plan proposed by an oil company.

PNM's management scope includes: I. Natural resources; II. Land-sea interface; III. Water quality; IV. Industrial activities, such as fishing, tourism, and navigation; V. Cultural assets; VI. Environmental education; VII. Governance [14]. Management of PNMs may not be able to respond to the complexity of maritime issues it carried out from a local perspective. The management of PNM through AAMP thus helps to expand the geographical space to the international level. For example, the scope of Golfe du Lion is adjacent to Spanish waters, Golfe normand-Breton is adjacent to British territorial waters, Mayotte is adjacent to the southwest waters of the Indian Ocean, Estuaires Picards et de la Mer d'Opale is related to the cooperation between England and the North Sea in the plan of the EU, and Martinique must consider the complex situation in the Caribbean.

The following is an introduction to the first established PNM, the Marine Natural Park of the Iroise Sea. Iroise is located in the Atlantic Ocean northwest of mainland France. In 1988, it was designated as a protected area by UNESCO's MAB (Man and Biosphere) program; the EU's NATURA 2000 has 5 sites in this scope.

Table 2/ Important History of the Marine Natural Park of the Iroise Sea

Time	Event
1989	Set up an ecological reserve
1995	The inter-ministerial committee on the sea area approved the establishment of a national park
1996	The navy dispatched officers to preside over national park design research projects
2000	The draft plan for national parks sought input from public and local representatives
2001	The French Prime Minister signed an agreement to create a national park
2002	Promoted consulting programs
2004	The Iroise area was deemed not suitable for designation as a national park
2005	National Natural Park project launched
April 14, 2006	National Natural Park announced
November 20, 2006	One-month public opinion consultation
September 28, 2007	Official establishment of Iroise PNM
December 19, 2007	The first management committee was held and its chairman elected
September 23, 2008	The management center was established at the former site of the Conquet radio station
December 2, 2009	Established south management station on Tristan Island
September 29, 2010	The management committee approved the management plan endorsed by the AAMP on November 25
2014	Conservation achievements recognized by IUCN
July 2018	The prefects (préfet) of Finistère and Maritime de l'Atlantique propose to expand the scope
From February 2019	Discussions began on proposals to include several small islands within the park to protect seabird habitats
From July 2020	Public opinion consultation (1,129 hectares of land expansion and 1,008 hectares of sea area expansion)

Source/ [15]

Waves and wind forming its main scenery, the park is home to many professional and leisure activities, rich cultural scenery, and residents' local awareness is very strong: This is their sea! After the announcement of the establishment of PNM in 2007, local protests continued. First, the Association for the Defense and Valorization of the Islands and Coast of the Iroise Sea (ADVILI) requested to abolish the PNM, which was rejected by Parliament as not representative and not justified. The same appeal was also made for Ouessant for the following reasons: I. The public consultation process is incomplete; II. Public opinion opposes it; III. The establishment of PNM is a mistake. Parliament rejected the appeals: I. There is no clear evidence for which; II. Environmental regulations do not prohibit the government from passing proposals that have objections; III. All evidence supports its uniqueness of the ecological and marine diversity.

The 49 members of the Iroise management committee include: 11 public opinion representatives (regional and local governments), 12 representatives from NGOs (fishing associations, farmers' associations, chambers of commerce...), 8 representatives from marine use organizations (sea fishing associations, diving associations, sailing associations...), 2 representatives from environmental protection organizations, 9 marine experts and scholars, 1 representative from the Armorique Regional Natural Park, 6 representatives from the central government.

Latest publication of the minutes for 2020 [16], the French Biodiversity Agency (OFB) reiterated the 5 main tasks of the French PNMs: I. Biodiversity; II. Scientific investigation and analysis; III. Actual implementation of national policies; IV. Management and restoration of protected areas; V. Promotion of environmental education. There was a total of 72 cases of PNMs reviewed in 2020, of which 5 were rejected (avis conforme), one being Iroise; the technical department provided a total of 165 professional opinions and subsidized 90 plans, totaling 963,835 EUR (about NT\$34 million), 15-20% of which is for environmental monitoring.

References

- [1] Ministère de la Transition écologique (Feb. 16, 2022). Le patrimoine marin et les aires marines protégées françaises. <https://www.ecologie.gouv.fr/patrimoine-marin-et-aires-marines-protgees-francaises> (Mar. 13, 2022)
- [2] EUR-Lex (2000). Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32000L0060> (Mar. 18, 2022)
- [3] United Nations (n.d.). Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (General Assembly resolution 72/249). <https://www.un.org/bnbj/> (Mar. 25, 2022)
- [4] Ministère de la Transition écologique (2015). Stratégie nationale de création et de gestion des aires marines protégées, 10. <https://www.ecologie.gouv.fr/sites/default/files/Strat%C3%A9gie%20nationale%20de%20cr%C3%A9ation%20et%20de%20gestion%20des%20aires%20marines%20prot%C3%A9g%C3%A9es.%20Synth%C3%A8se.pdf> (Mar. 13, 2022)
- [5] Office français de la biodiversité (Jun. 14, 2021). Création de la réserve naturelle nationale de l'archipel des Glorieuses. <https://www.ofb.gouv.fr/actualites/creation-de-la-reserve-naturelle-nationale-de-larchipel-des-glorieuses> (Mar. 19, 2022)
- [6] Parc naturel marin Iroise. <https://parc-marin-iroise.fr/> (Mar. 18, 2022)
- [7] Parc naturel marin Bassin d'Arcachon. <https://parc-marin-bassin-arcachon.fr/> (Mar. 18, 2022)
- [8] Parc naturel marin Estuaire de la Gironde et de la mer des Pertuis. <https://parc-marin-gironde-pertuis.fr/> (Mar. 18, 2022)
- [9] Parc naturel marin Golfe du Lion. <https://parc-marin-golfe-lion.fr/> (Mar. 18, 2022)
- [10] Parc naturel marin Cap Corse et Agriate. <https://parc-marin-cap-corse-agriate.fr/> (Mar. 18, 2022)
- [11] Parc naturel marin Estuaires picardset de la mer d'Opale. <https://www.parc-marin-epmo.fr/> (Mar. 18, 2022)
- [12] Parc naturel marin Mayotte. <https://www.parc-marin-mayotte.fr/> (Mar. 18, 2022)
- [13] Parc naturel marin Martinique. <https://www.parc-marin-martinique.fr/> (Mar. 18, 2022)
- [14] Office français de la biodiversité (n.d.). Les parcs naturels marins et le sanctuaire de mammifères marins Agoa. <https://www.ofb.gouv.fr/les-parcs-naturels-marins-et-le-sanctuaire-de-mammiferes-marins-agoa> (Mar. 11, 2022)
- [15] Parc naturel marin Iroise (n.d.). Qui sommes-nous. <https://parc-marin-iroise.fr/editorial/qui-sommes-nous> (Mar. 18, 2022)
- [16] Office français de la biodiversité (October, 2021). L'année 2020 dans les parcs naturels marins, 21-27. <https://www.ofb.gouv.fr/documentation/lannee-2020-dans-les-parcs-naturels-marins> (Apr. 4, 2022)

國際海洋資訊

18
June 2022
雙月刊 | Bimonthly



International Ocean Information

發行：海洋委員會

地址：806610高雄市前鎮區成功二路25號4樓

電話：(07)3381810

E-mail：master@oac.gov.tw

網址：https://www.oac.gov.tw/

執行：財團法人台灣經濟研究院

地址：104222臺北市中山區德惠街16-8號7樓

電話：(02)2586-5000分機888

傳真：(02)2595-7131

網址：http://www.tier.org.tw/

發行人：李仲威

副發行人：蔡清標、周美伍

總編輯：劉國列

編輯委員：黃向文、邱永芳、謝亞杰、
沈建中、許啓業、王茂城、
黃世偉、陳裕興、林麗英、
陳致延、紀琇雯

編輯顧問：宋克義、劉光明

執行主編：鍾嘉雯、陳璋玲

執行編輯：黃釋緯、洪承豐、李茗家、謝惠子

美編設計：不賴的廣告

電話：(02)2783-0978

傳真：(02)2783-3033

Published by Ocean Affairs Council

Address：4F., No. 25, Chenggong 2nd Road,
Qianzhen District, Kaohsiung City 806610,
Taiwan

Telephone：(07)3381810

E-mail：master@oac.gov.tw

Website：https://www.oac.gov.tw/

Executive：Taiwan Institute of Economic Research

Address：7F., No. 16-8, Dehuei St., Jhongshan District,
Taipei City 104222, Taiwan

Telephone：(02)2586-5000 Ext.888

Fax：(02)2595-7131

Website：http://www.tier.org.tw/

Publisher：Chung-Wei Lee

Associate Publisher：Ching-Piao Tsai, Mei-Wu Chou

Editor-in-Chief：Kuo-Lieh Liu

Editorial Board：Hsiang-Wen Huang, Yung-Fang Chiu,
Ya-Chieh Hsieh, Chien-Chung Shen,
Chad C.Y. Hsu, Mao-Chen Wang,
Shin-Wei Huang, Yu-Hsing Chen,
Li-Ying Lin, Chih-Yen Chen, Siou-Wun Ji

Reviewer：Keryea Soong, Kwang-Ming Liu

Managing Editor：Chia-Wen Chung, Chung-Ling Chen

Executive Editor：Shi-Wei Huang, Cheng-Li Hung,
Ming-Chia Lee, Hui-Tzu Hsieh

Designed by Pride Advertising Agency Ltd.

Telephone：(02)2783-0978

Fax：(02)2783-3033

讀者意見回饋，請來電(02)2586-5000分機888或E-mail至d11743@tier.org.tw

國際海洋資訊

18
June 2022
雙月刊 | Bimonthly

International Ocean Information



封面／OOC代表團員出席臺帛升旗典禮後於台南艦前合影

封底／蔡政務副主任委員（正中間）與黎大使及科羅州長Eyos Rudimch一同放流綠蠵龜

圖片提供／OOC我國代表團團員

中華民國111年6月出版（每雙月出版）

中華民國108年8月創刊

ISSN 2706-638X（紙本）

ISSN 2706-6398（電子）

中華郵政高雄雜字第236號執照登記為雜誌交寄

高雄郵局許可證 高雄字第2084號

著作權所有未經同意不得轉載



 **海洋委員會**
Ocean Affairs Council 發行

 **台灣經濟研究院**
Taiwan Institute of Economic Research 編印

贈閱