

海域再生能源開發接軌國際推動計畫(II)

執行單位

國立臺灣海洋大學

計畫主持人

陳建宏 教授

- 本計畫係延續第一期海域再生能源開發接軌國際計畫，深化離岸風力及海洋能技術領域為主，期經由計畫之實施來協助提升台灣自我之海域再生能源開發技術能量。



活動內容 / Content		演講者 / Speakers
報到 / Registration		
開幕致詞 Opening Remarks	國立臺灣海洋大學 張清風校長 President Ching-Fong Chang, NTOU	
USA Wind Energy Vision and Taiwan's Development Potential	Mrs. Alla Weinstein, President Global Wind Business Alliance Seattle, Washington, USA	
Offshore Wind - from concept to Decommissioning	Mr. Ted Hofbauer, Director ABS Consulting Houston, Texas, USA	
休息 / Break		
Cost Reduction Techniques in WTG Foundation Fabrication and Installation	Mr. Craig Brown, Director Keystone Engineering New Orleans, Louisiana, USA	
Enabling a paradigm shift for the offshore wind industry	Mr. Joao Metelo, CEO Principle Power, Inc. San Francisco, California, USA	
Offshore and Subsea Construction, Installation, and O&M – Contractor Perspective	Mr. Sanjai Jatar, President Great Circle Offshore & Marine Houston, Texas, USA	
午餐 / Lunch		
分組工作坊1 Workshop 1 WTG Foundation Technology	分組工作坊2 Workshop 2 Offshore Construction, IO&M	分組工作坊3 Workshop 3 Offshore Wind Farm Pre-development Strategic Planning
Craig Brown, Joao Metelo (Location: Room 1)	Sanjai Jatar, Ted Hofbauer (Location: Room 2)	Alla Weinstein, Eddie Y. Wang (Location: Room 3)
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Free Discussions and Refreshments		

1. 台灣風力發電發展現況與未來展望 1. Status and Future Development of Wind Power in Taiwan	張永源 正工程師/工研院 Mr. Yun-Yuan Chang, ITRI
2. 風力機安全評估 2. Safety Assessment of Wind Turbines	陳美蘭 研究員/工研院 Ms. Mei-Lan Chen, ITRI
3. DNV GL 之風電技術介紹 3. Introduction to DNV GL Wind Turbine Services	Mr. Graeme McCann, DNV GL Manager of Turbine Engineering Services (TES) Principal Engineer
休息 / Coffee and Tea Break	
4. 風力機設計基礎暨 Bladed 簡介 4. Fundamentals of Wind Turbines Design and Introduction to Bladed	Mr. Graeme McCann, DNV GL Manager of Turbine Engineering Services (TES) Principal Engineer
午餐 / Lunch	
5. 先進風力機控制及設計 5. Advanced turbine control and design	Mr. Jiangtao Wei, DNV GL
6. 符合特定場址條件之風力機設計 6. Turbine design for site specific conditions	Mr. Graeme McCann, DNV GL Manager of Turbine Engineering Services (TES) Principal Engineer
休息 / Coffee and Tea Break	
7. 先進風力機技術開發 7. Advanced turbine technology development	Mr. Graeme McCann, DNV GL Manager of Turbine Engineering Services (TES) Principal Engineer
8. 依據運行數據了解風場性能 8. Using operating data to understand the real performance of a wind farm	Dr. Jiangtao Wei, DNV GL TES Business Development Manager for Asia Principal Engineer

- 完成海大海洋能源中心、工研院與美國桑迪亞國家實驗室 (Sandia National Lab.)共同開發波能轉換器設計程式(WEC-Sim)-簽署合作協議1件、選送2位研究人員移地訓練。
- 完成舉辦台美海域再生能源工程論壇1場，與煤合參訪國內離岸風力廠商。
- 媒合國內台電、風能協會、中鋼、世曦、DNV等廠商，參訪胡蘇姆風能展、舉辦離岸風電技煤合座談與技術研討會1場，辦理波浪發電模擬軟體短期密集課程及研討會各1場。



台美海域再生能源工程論壇（海大）



對NREL的NWTC團隊演講(左:臧效義教授,中:陳建宏教授,右:張育齊博士生)

美國能源國家實驗室訪問與工作坊



移地研究人員與訓練研究員



海大-愛丁堡大學海洋能轉換器
數值水動力模擬短期課程



德國胡蘇姆風能展



媒合工作坊：西門子（德國）、本土企業（臺灣）



Research Project for Promotion of International Linkage on Offshore Renewable Energy Development (II)

Execution Unit

National Taiwan Ocean University

Project Director

Prof. Jiahn-Horng Chen

- This project is the 2nd year for linking international society on technology developments of offshore winds and ocean energy offshore Taiwan. Tasks are executed to promote national technology development and to contribute in carbon reduction.



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4. 風力機設計基礎暨 Bladed 簡介 4. Fundamentals of Wind Turbines Design and Introduction to Bladed > DNV GL turbine design process > The industry standard wind turbine design tool: Bladed > New features in Bladed 4.5 and 4.6 and future developments	Mr. Graeme McCann, DNV GL Manager of Turbine Engineering Services (TES) Principal Engineer
午餐 / Lunch	
5. 先進風力機控制及設計 5. Advanced turbine control and design	Mr. Jiangtao Wei, DNV GL
6. 符合特定場址條件之風力機設計 6. Turbine design for site specific conditions > Site specific load calculation > DNV GL Typhoon Consideration > Seismic consideration	Mr. Graeme McCann, DNV GL Manager of Turbine Engineering Services (TES) Principal Engineer
休息 / Coffee and Tea Break	
7. 先進風力機技術開發 7. Advanced turbine technology development > Cost-of-Energy COE guided design – turbine architect > Integrated design for offshore projects > Wind farm control and optimization	Mr. Graeme McCann, DNV GL Manager of Turbine Engineering Services (TES) Principal Engineer
8. 依據運行數據了解風場性能 8. Using operating data to understand the real performance of a wind farm > Loads and Power Curve Measurements > Asset Management and Optimization Services (AMOS) > Case studies	Dr. Jiangtao Wei, DNV GL TES Business Development Manager for Asia Principal Engineer

- MOA sign-up among NTOU, ITRI and Sandia National Lab, USA on co-developing simulation software WEC-Sim and field training of 2 researcher at SNL.
- Organizing Taiwan-USA Offshore Renewable Energy Forum (TUOREF) and visits of delegates to local industries.
- Organizing delegates of Taiwan including China Steel Co., Wind Energy Association, consulting co. CECI & DNV to attend Husum Wind Fair, Match-up Meetings in Germany and Short-Course and Workshops in Taiwan.



TUOREF Forum at NTOU



對NREL的NWTC團隊演講(左:臧效義教授, 中:陳建宏教授, 右:張育齊博士生)

Visits of SNL and workshop at NREL



Field training at NREL



NTOU-UoE Short-course on Numerical Hydrodynamic Modeling on Ocean Energy Converters



Attending Husum Wind Fair



Match-up Meeting with Siemens & local industries

