

大型離岸風場併網技術開發研究-以台灣實際離岸風場開發案為例

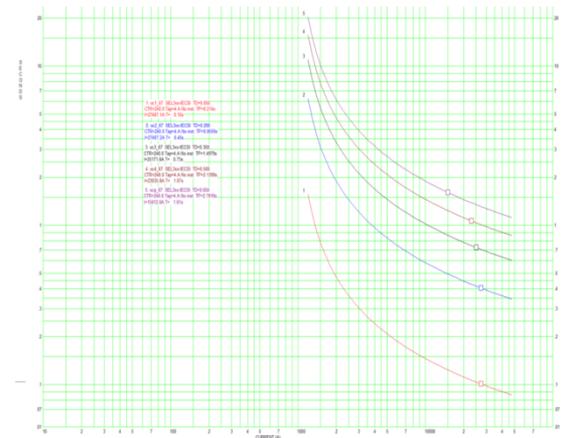
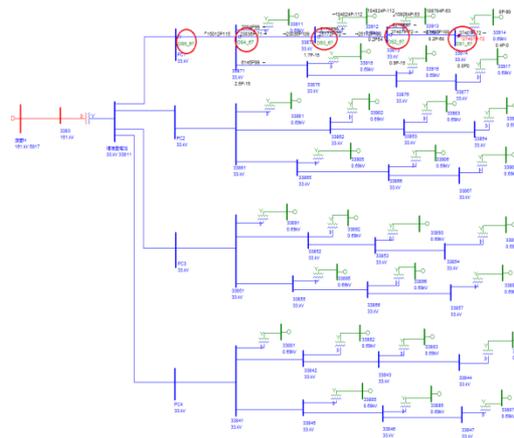
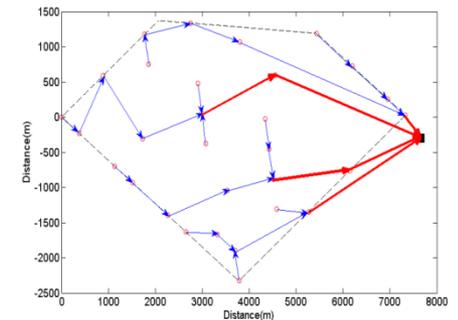
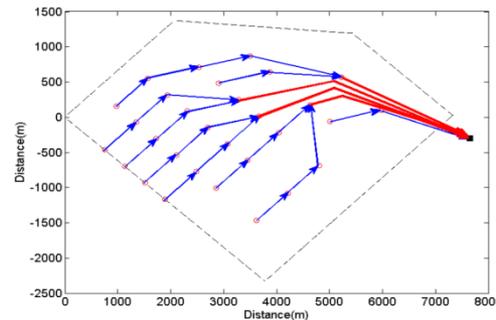
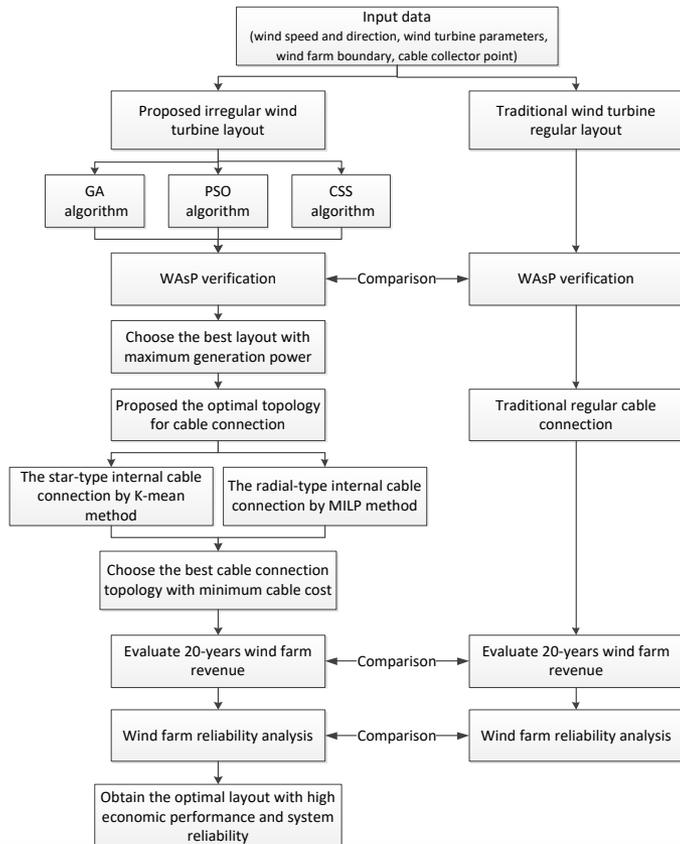
執行單位

國立中正大學電機系

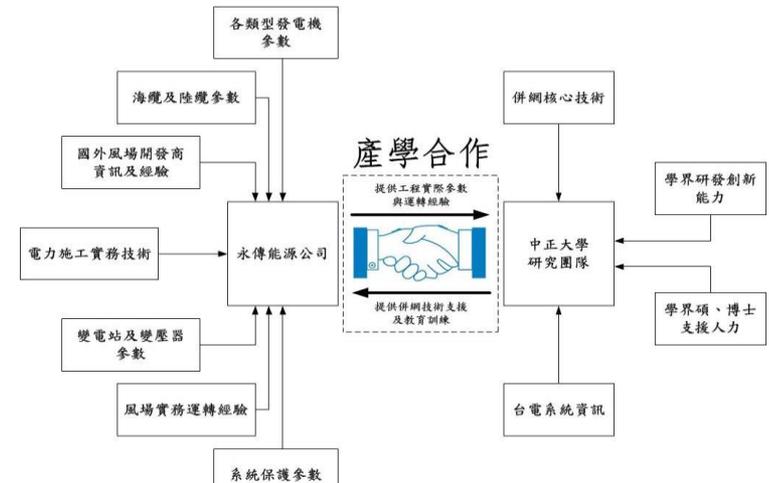
計畫主持人

吳元康

- 本計畫探討大型離岸風力系統的電力併網技術分析，包含電力系統分析、虛功管理、風場最佳化布局、風場保護系統設計、風力發電預測技術與平台開發，以及風場電力品質分析等。



- 本計畫所研究的併網技術在三年的時程內將涵蓋電力系統衝擊分析、風場虛功管理、電力品質量測與分析、風機與纜線配置的優化、風場開關與雷擊突波暫態分析、風場電力保護、風場併網對於台電系統的暫態穩定度分析與機組調度衝擊分析的相關技術等。
- 藉由本計畫的執行，業者可以提供系統建置的實際參數與工程經驗，而研究團隊可以提供所研發的併網相關技術與教育訓練。本研究團隊藉由此產學合作，密集地與業者與台電公司討論，並持續的開發相關技術，以解決各種併網技術的困難點，協助永傳能源公司成功地將風場併接至台電系統，且可穩定與可靠地運轉。



Development of Integration Technology for Large-Scale Offshore Wind Farms in Taiwan

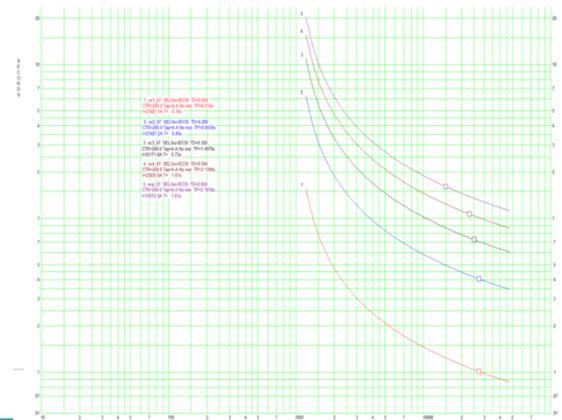
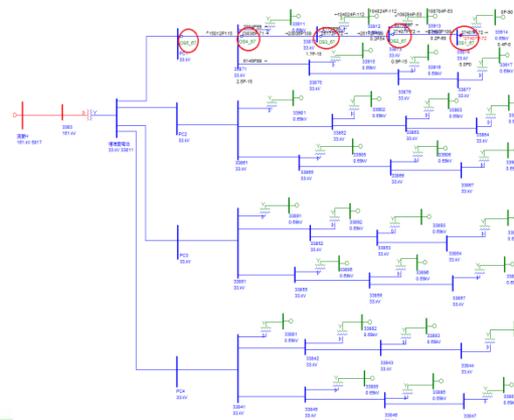
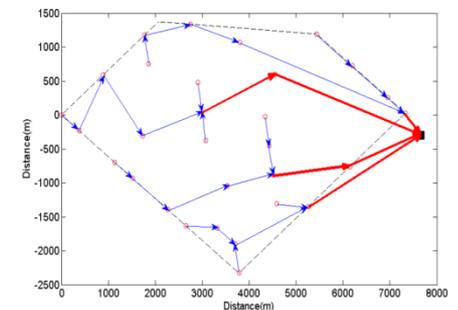
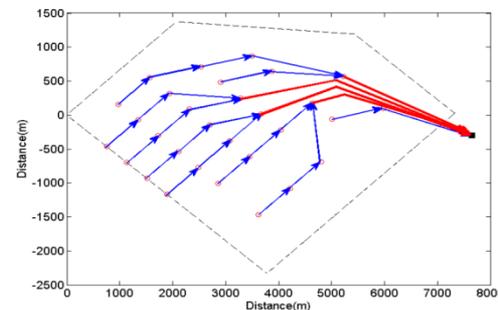
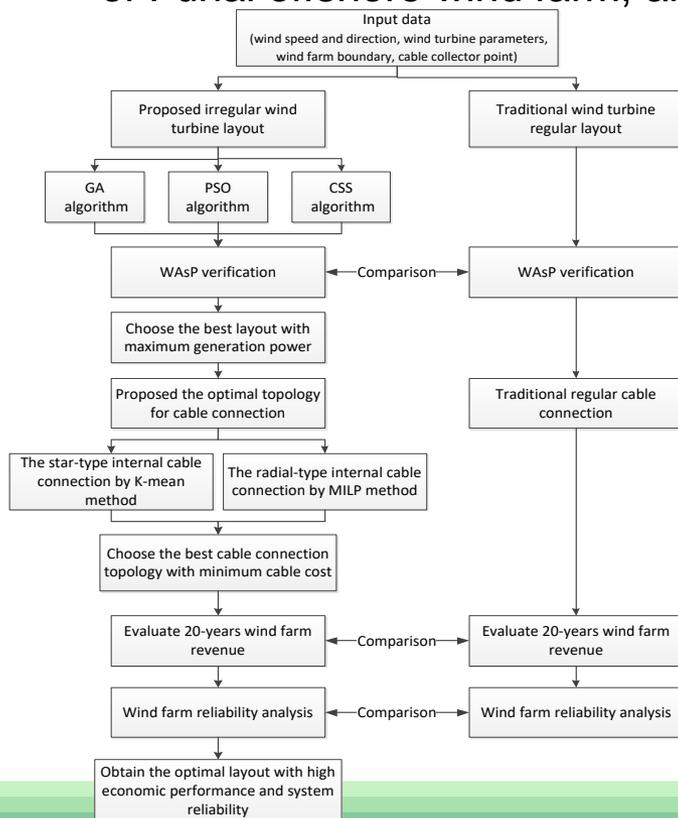
Execution Unit

National Chung-Cheng University

Project Director

Prof. Yuan-Kang Wu

- The development of related grid-interconnection techniques of Fuhai offshore wind farm is particularly important. The main purpose of this project is to assist Taiwan Generations Corp. (T.G.C.) on planning and building the power system of the Phase-II and Phase-III of Fuhai offshore wind farm, and analyze a variety of technologies on grid integration.



- Grid-integration technologies studied in this project covers the power system impact analysis, reactive power management, power quality measurement and analysis, optimized configuration of wind turbines and cables, transient analyses about switching and lightning surges in the wind farm, the protection of wind farm, transient stability analysis and modified unit commitment due to the offshore wind farm integration.
- By implementing this project, the Taiwan Generations Corp. can provide the research team actual parameters and engineering experience about offshore wind farm building, and the research team can provide the Taiwan Generations Corp. the grid-integration techniques and education training. By the cooperation project, the research team will discuss with the Taiwan Generations Corp. and the Taipower frequently, and develop continually related techniques to solve the problems about grid-integration techniques. The target of this project is to assist T.G.C. in connecting the Fuhai wind farms with Taipower system successfully.