

# 智慧電網與太陽光電產業之國際合作暨產業媒合計畫

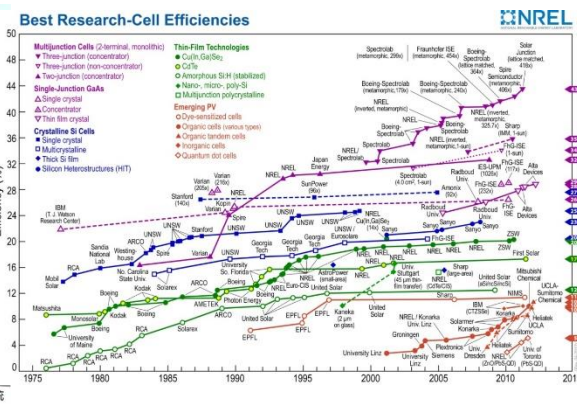
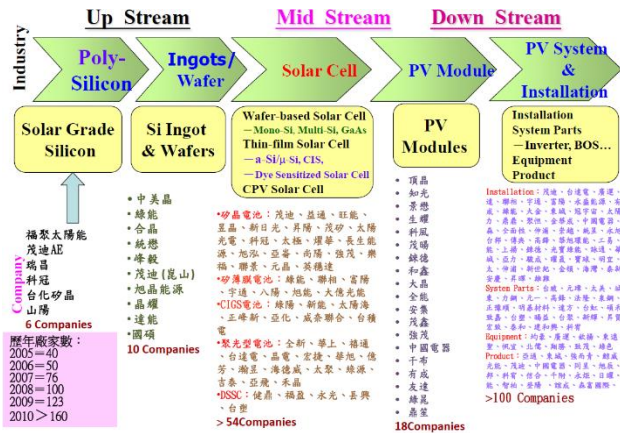
執行單位

東海大學資訊工程系

計畫主持人

朱正忠

- 利用雲端技術來建構快速、可靠、具有彈性的智慧電網系統以良好的ICT與製造產業，透過太陽能光電、智慧電網整體規劃與國際合作，縱貫電力系統發、輸、配、用各構面，配合整體綠能智慧電網推動目標「引領低碳產業」，將有助推動臺灣成為全球智慧電網產業整體解決方案輸出國。



## ● 智慧電網產業化技術之缺口分析及國際連結

- 缺乏系統之控制平台、國內外電網之示範場域
- 智慧電網發展成本高

## ● 太陽光電產業化技術之缺口分析及國際連結

- 多晶矽產能過剩，效率較低，處於虧損狀態
- 廠商應以拓展下游業務為主，不應橫向擴張
- 尋求新的太陽能技術，脫離殺價競爭的紅海

## ● 國內智慧電網與太陽光電關鍵技術與供應鏈模式評估

- 智慧電網創新商業模式與合作模式：
  - ✓ 智慧型儲電系統應用於社區/離島/偏遠地區
  - ✓ 智慧型儲電系統孤島效應於大樓應用
  - ✓ 孤島效應+契約容量控制於工廠
- 太陽能產業的合作模式：
  - ✓ 綠色能源產業旭升方案
  - ✓ 建構完善的金融環境
  - ✓ 技術開發保持產業優勢，降低系統成本
  - ✓ 產業垂直與水平整合，強化模組業者之規模經濟與競爭力

# Facilitating international collaboration and alliance formation on smart grid and solar photovoltaics

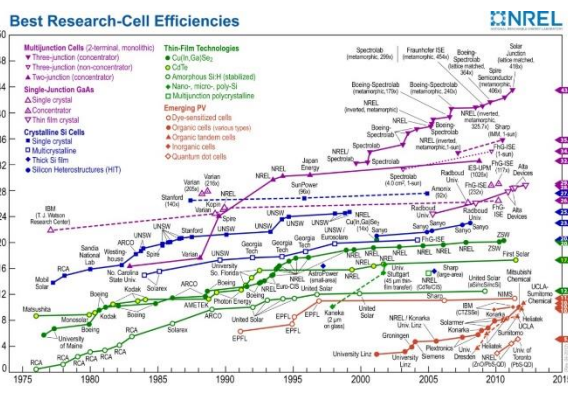
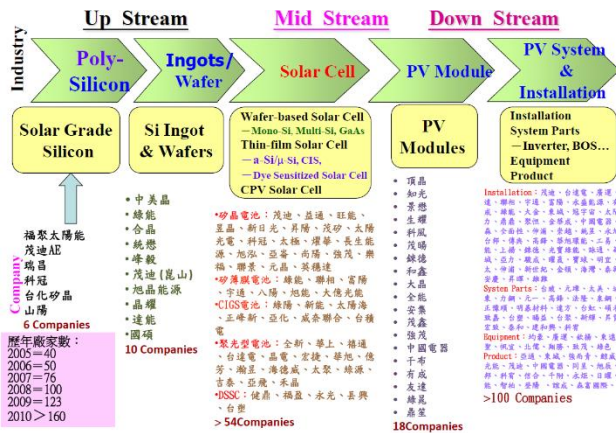
Execution Unit

TungHai University Computer Science Department

Project Director

William Cheng Chung Chu

- Using Cloud Technology to Build Fast, Reliable and Flexible Smart Grid Systems. With good ICT and manufacturing industries, through the overall planning and international cooperation of solar photovoltaic and smart grids, the smart grid system runs through all aspects of power system transmission, distribution and use. In line with the goal of "leading a low-carbon industry" driven by the overall green smart grid, it will help promote Taiwan as a global exporter of smart grid industry solutions.



- **Smart Grid Industrialization Technology gap analysis and international links**
  - Lack of systematic control platform, domestic and international grid demonstration area
  - Smart grid development costs high
- **The gap analysis and international connection of solar photovoltaic industrialization technology**
  - Polysilicon excess capacity, lower efficiency, at a loss
  - Manufacturers should focus on expanding their downstream businesses and should not expand horizontally
  - Seek new solar technology, out of bargain-hunting Red Sea
- **Domestic Smart Grid and Photovoltaic Key Technology and Supply Chain Mode Evaluation**
  - Smart grid innovative business model and cooperation model:
    - ✓ Smart storage system used in community / outlying islands / remote areas
    - ✓ Islanding effect of intelligent storage system in building applications
    - ✓ Island effect + contract capacity control in the factory
  - Solar energy industry cooperation model:
    - ✓ Green Energy Industry Sunrise Program
    - ✓ Construct a sound financial environment
    - ✓ Technological development to maintain industrial advantages and reduce system costs
    - ✓ Industry vertical and horizontal integration, strengthen the economies of scale and competitiveness of the module industry