澎湖智慧電網示範系統建置

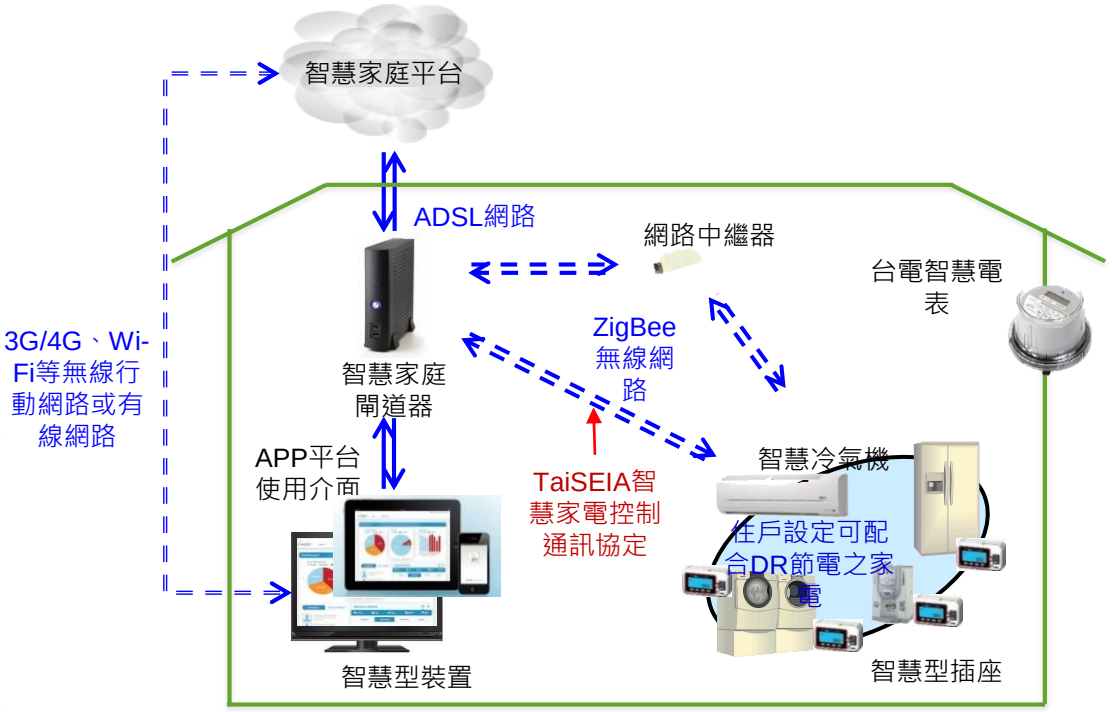
執行單位	工研院綠能所	計畫主持人	黃怡碩

- 104年完成澎湖100戶智慧家庭示範的智慧家電TaiSEIA之整合與測試，相關經驗提供106年能源局計畫「 1000戶智慧電表與住戶端整合示範」之居家顯示器(IHD)與智慧家電整合等設計參考。

住宅型自動需量反應系統

- 需量反應決策機制：依據負載預測與PV發電預測，計算DR日期與級數。
- 透過網路OpenADR2.0b傳送至每戶HEMS。
- 事件後依據台電MDM的資料，計算個別和整體的節電成效。

澎湖智慧家庭APP



澎湖智慧家庭系統架構

- 本計畫配合行政院102年核定「智慧電網總體規劃方案」選定澎湖作為示範場域，進行相關新興技術驗證與扶植國內產業進入國際市場。
- 計畫成果包括導入具有TaiSEIA標準的國內家電於100戶智慧家庭示範，並建立OpenADR2.0b 整合平台，分析住戶參加尖峰時間回饋(PTR)需量反應的試驗成效；建置智慧電網展示平台建置，提供情境互動讓民眾體驗智慧電網的功能與概念；建立兩條饋線的區域能源管理系統，整合饋線自動化、智慧型太陽光電與智慧家庭等。
- 計畫經驗促成合作廠商(大同)參與屏東縣政府「光采濕地智慧微型電網示範區」，其整合太陽能、風力、氫能、生質能等多項再生能源發電，並可孤島運轉達72小時。

澎湖智慧電網展示平台


光采濕地智慧微型電網示範區

Peng-Hu Smart Grid Demo Project

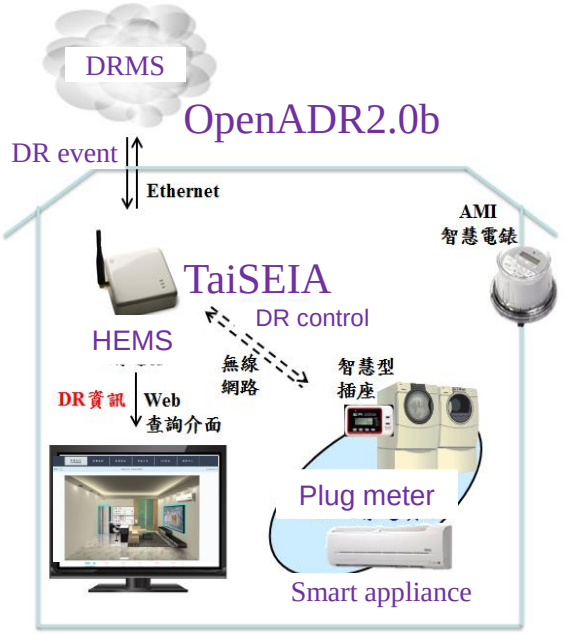
Execution Unit	GEL, Industrial Technology Research Institute
Project Director	Huang, Yi-shuo

- The project built up 100 HEMS in 2015 which integrated with TaiSEIA, OpenADR and uEMS. This experience assists the 2017 BOE project “ 1000 AMI and user integrated demonstration” to design IHD and Meter Gateway

Residential Auto DR

- DR decision：According Load and PV forecast to decide DR date and level.
- Announce DR in form of OpenADR2.0b into HEMS.
- Using AMI data to calculate DR effectives of each home.

Penghu Smart Home APP



- This project is according to “Smart Grid Master Plan” which assigned Penghu to be the demo site to validate the emerging technologies and assist national industry involve international market.
- The techniques by this project were implementing 100 home energy management systems with TaiSEIA smart appliances, developing Open ADR 2.0b integrated platform, analyzing peak time rebate DR test data of 100 users, and building smart grid demo room to provides people interactive and knowledge of smart grid.
- The experience of this project assisted cooperating company to participate the “Micro-grid Demo Park in Linbain Township” which integrated with PV, wind, hydrogen and geothermal and was able to operate 72 hours stand alone.

Penghu Smart Grid Demo Room


Micro-grid Demo Park in Linbain Township