國際能源發展政策研究暨AMI 加值服務技術開發計畫

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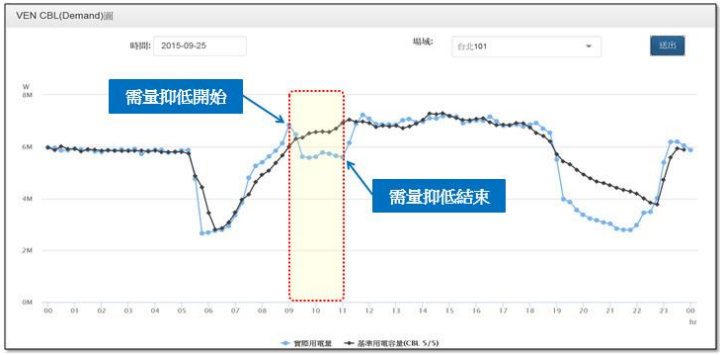
- 以AMI資料建立用戶端能源基線(CBL)，作為需量反應系統之抑低績效量測基礎，OpenADR自動需量反應技術，優先應用於空調系統尖峰抑低，現階段可用於尖峰抑低，未來可應對風力與光電發電變動

CBL：Customer Baseline Load

- 卸載量分配方法與裝置 (台灣、大陸、美國)
- 電量購買系統、方法及電腦可讀取記錄媒體 (台灣、大陸、美國)
- 用於感測器網路之資料整合裝置 (日本)
- 先進讀表基礎建設場勘系統 (日本)
- 智慧型電表基礎建設網路系統及其訊息廣播方法 (台灣)
- 智慧型電表系統 (台灣、大陸、美國)
- AMI大規模佈建方法及電力系統分散資料加值運算方法 (菲律賓)

運用OpenADR技術，開發**空調自動需量反應系統**，不需人員操作，擴大參與家數22家，縮短反應時間至**15分鐘**

與台電合作建立**空調自動需量反應系統**，**無儲冰**可抑低4%至21%需量，**有儲冰**可抑低41%至62%需量



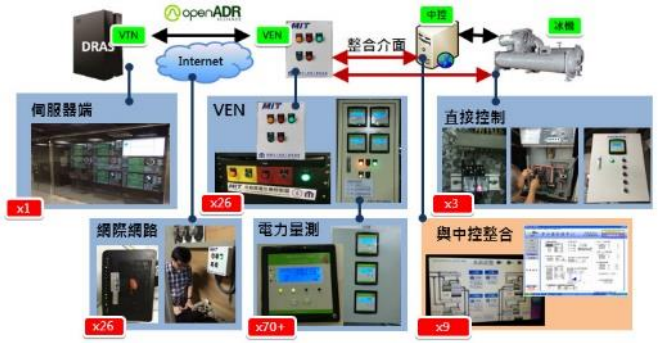
- 技術介紹
  - OpenADR是基於資通訊所發展物聯網技術，取代傳統人員協商溝通，建立大數量用戶與快速反應的自動需量反應系統，可進行非即時ADR事件協商，由用戶決定是否參加，也可進行即時型ADR事件，立即抑低負載，因應緊急事故
- 目前發展情形
  - 因應天災供電不足，經濟部委由台電公司，先期在國貿局及標檢局，建立空調自動需量反應驗證系統，本計畫與台電合作，持續擴散前期計畫成果，未來將應用到行政院所屬部會
- OpenADR聯盟產品認證通過
  - OpenADR 2.0a VTN: SAVE (Smart and Valid Energy) v1.0 主機端
  - OpenADR 2.0a VEN: MIT (Multi-Interactive Terminal) v1.0 用戶端
  - OpenADR 2.0b VTN: SAVE (Smart and Valid Energy) v1.1 主機端
  - OpenADR 2.0b VEN: MIT (Multi-Interactive Terminal) v1.1 用戶端

International Energy Trend & Policy Research and AMI Value Added Services Technology Development Project

Execution Unit	Main Project: Ministry of Economic Affairs - Department of Industrial Technology Sub-project: Institute for Information Industry
Project Director	Principal Investigator: LIN,CING-HAI Section Chief Co-Principal Investigator: CHEN,WEN-RUI Director

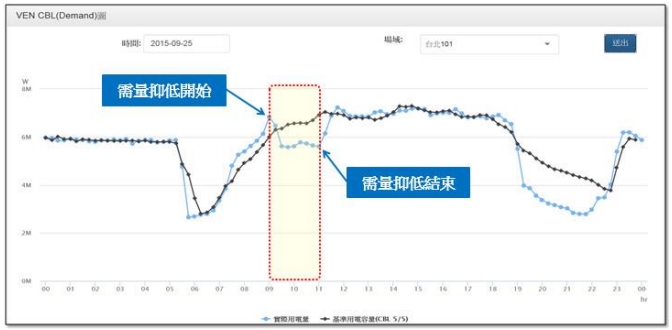
- Through AMI data, develop the Customer Baseline Load, measure and verify the load shedding performance. OpenADR technology is applied to reduce spikes power, preferentially in chiller systems at the present stage. Also it will be applied to the wind and photovoltaic power generation. solving the unstable issue in the future

- SHEDDING AMOUNT ASSIGNMENT METHOD AND DEVICE (ROC、China、USA)
- POWER PURCHASING SYSTEM, METHOD, AND COMPUTER READABLE RECORDING MEDIA (ROC、China、USA)
- DATA INTEGRATION APPARATUS FOR USE IN SENSER (Japan)
- ADVANCED METERING INFRASTRUCTURE SITE SURVEY SYSTEM (Japan)
- Smart meter infrastructure network system and its message broadcasting method (ROC)
- ADVANCED METERING INFRASTRUCTURE SYSTEM (ROC、China、USA)
- AMI large-scale construction method and power system decentralized data adding method (Philippines)



The use of OpenADR technology to develop a chiller ADR system with staff-free operation. Also it enable to expand participation to 22 households , shorten the reaction time to 15 minutes.

III cooperate with Taipower to set up ADR for chiller system, chiller without cool thermal storage, can reduce 4% to 21% of demand power. With a cool thermal storage, can reduce 41% to 62% of demand power.



- Introduction
  - The development of OpenADR is an Automated Demand Response System based on Internet of Things technology that replaces traditional personnel to quickly negotiation, establish large numbers of users with fast response application. It can negotiate Economic Trigger ADR events and decide by user whether to participate or not, as well as Reliability Trigger ADR events, direct shedding the load, in response to an emergency event.
- Current Development
  - With power shortage caused by natural disaster, Taiwan Power Company accept the project commissions from the Ministry of Economic Affairs, the pre-settled in the Bureau of Foreign Trade and the Bureau of Standards, Metrology & Inspection, on the building chiller system establish a automated demand response trial system, verification the performance and reliability, and continued to spread the results of the project, will be applied to the Executive Yuan Ministry will.
- OpenADR Alliance certified product
  - OpenADR 2.0a VTN: SAVE (Smart and Valid Energy) 1.0 Service Site
  - OpenADR 2.0a VEN: MIT (Multi-Interactive Terminal) 1.0 Demand Site
  - OpenADR 2.0b VTN: SAVE (Smart and Valid Energy) 1.1 Service Site
  - OpenADR 2.0b VEN: MIT (Multi-Interactive Terminal) 1.1 Demand Site