



## Subtask 5 - Korea technology database

### Korea Tech Case #1 : Direct Load Control in KEMCO

#### A. General company contact information :

Kim, Hyeong-Jung  
Associate Manager  
Phone : +82-31-2604-254  
Fax : +82-31-2604-249  
E-Mail : [jakekim@kemco.or.kr](mailto:jakekim@kemco.or.kr)  
Website : [www.kemco.or.kr](http://www.kemco.or.kr)  
Related : [www.lmc.or.kr](http://www.lmc.or.kr)

#### B. Overview of the Company :

The Korea Energy Management Corporation(KEMCOO) is a government agency responsible for the implementation of energy conservation policies and energy efficiency improvement measures.

#### C. Brief Overview

The demand of the electric power is increasing in Korea, the direct load control (DLC) is introduced to cut off the peak loads, generally occurred in summer, and to supply the electric power with more stably and economically the customers as a measure of Demand-Side Management (DSM).

The Ministry of Commerce, Industry and Energy (MOCIE) established the 5<sup>th</sup> of the long-term electric supply-demand plan from 1999 to 2015 for the stability of electric power- demand and the efficiency of electric power industry.

According the long-term supply-demand plan of MOCIE, it is predicting that the peak load may become 51,660MW and the load management may become 3,090MW. And, MOCIE try to keep the reserve rate for the mid and long-term by 16~18%. By increased demand, the MOCIE is planning that the generation capacity will increase by 60,390MW and the more transmission line (765kV, 345kV, 154kV) will install by 2005.

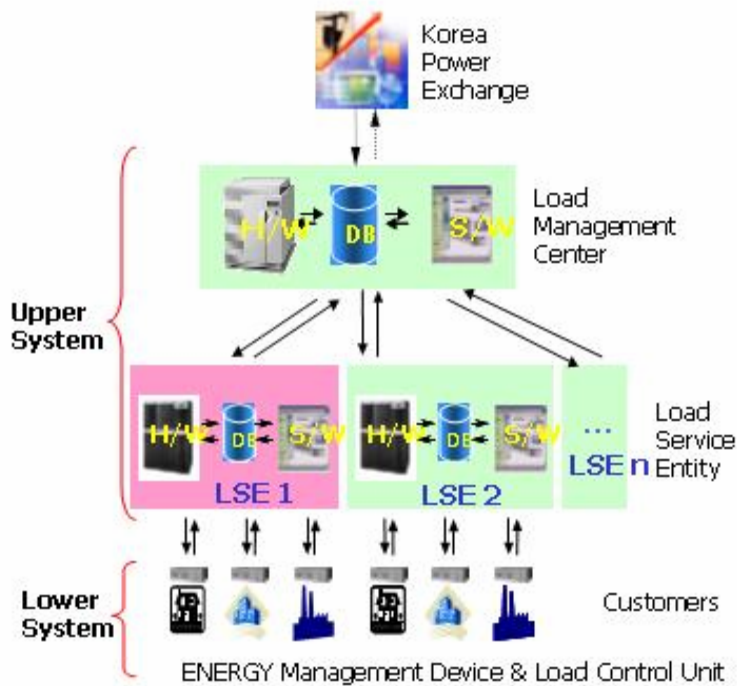
Also, according to the long-term supply-demand plan of MOCIE, the amount of the DLC program of the load management from 2001 to 2005 is presented as following

The amount of DLC program by MOCIE plan

Year	2001	2002	2003	2004	2005
Capacity[MW]	100	300	300	200	200

#### D. Description of the DLC technology

DLC can be divided into two parts, upper system and lower system, according to characteristics and functions of each layer. Upper system is a system in KEMCO which is on work now. It will connect to KPX and supply information which can be used for power system in the near future. And, because of its ability to provide power control and various services for end users, LSES (Load Serving Entity System) from private sectors can be grouped into upper system.



#### A) Load Management Center (LMC)

Center oriented management system in which orders about load control are patched to LSEs. And it, after analyzing and screen of power information, also provides the information not only for LSEs but also for DLC participants. In future, it will receive orders from KPX (Korea Power exchange) and allocate proper duties to LSEs, then transmit the following result to KPX.

#### B) Load Service Entity System (LSES)

LSE's central system. It provides load controlling function and various additional services. In addition, it links with LMC to receive orders and DLC control devices of end users to

transmit the orders. And it also transmits control data accumulated in the devices to LMC.

#### C) Energy Management Device (EMD)

Located in end customers' places. It takes charge of communication, digital operation

and display of all necessary information. Main functions are as follows:

- Measurement and display of end customer's power
- 15 minute demand power measurement and display
- LCU load control according to LSES' control order.
- EMD setting

***D) Load Control Unit (LCU)***

It controls local load according to EMD's command and contains a closing relay. In addition, power inspection metering elements are involved for control-effect calculation and end-customer incentive settlement.

- Metering and display of load power
- 15 minute demand power measurement
- Control over connected load according to orders from EMD
- LCU setting