

Description of integrated pilots/demonstrations/field tests/existing practices

1. Name of the case: Development of Web-based Renewable Energy Monitoring Systems

2. What is integrated with DSM

DG

Energy storage

Smart grid technologies

3. What is the level of commercialization

Research project

Demonstration

Field test

Existing practice

4. Where to find more information?

- Contact person: Dr. Youngjae Jeon
- Company: Renewable Center in KEMCO, South Korea
- web-site: <http://konesis.kemco.or.kr> (Korean Only)
- references

5. Objectives of the case

Integration of renewable energy management through the construction of web-based monitoring system for the generation output of deployed renewable facilities

Enhancing the renewable energy generation and actual operational performance by checking and the operation status via internets

Providing more reliable renewable generation statistics by adopting the integration system on the generation outputs

6. Business rationale/model

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It's not possible to manage properly on the dispersed renewables in nation-wide without the introduction of web-based monitoring systems due to the high increase of renewable deployment site.

	2004	2005	2006	2007	2008e	2009e
Deployment sites	648	1,642	4,425	8,500	17,000	25,000

Mandatorily add the renewable monitoring RTU to the specified facilities which was received governmental incentives (prescribed into the public announcements from the government)

Specified facilities: Renewable facilities above 10kW per unit, solar thermal panel above 200m² and geothermal HP above 30RT

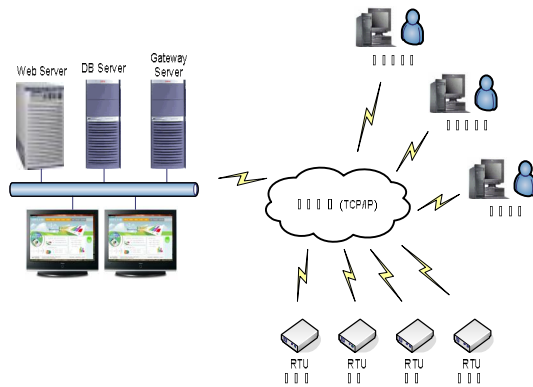
Promoting the deployment of high performance facilities by the information sharing on the generation outputs of installed capacity

7. Technologies used

Use the internet based communication protocols and develop common technological standards for securing communication compatibility between the measurement instruments and RTU server

Develop the operational software and RTU which is attached the renewable generation facilities and enhance the data security and stability by separating gateway server and database server

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.RTU(Remote Terminal Unit) : Data transmitting and receiving functions between inverters and digital readers

8. Short description of the case

Develop and operate the integrated monitoring system for the renewable generation facilities, KONESIS (**K**Orea **N**ew&**R**enewable **E**nergy **S**tatic **I**nformation **S**ystem)

Website Development: <http://konesis.kemco.or.kr> (until now Korean only)

Hourly generated data through the whole day are to be transmitted and saved to the server database

Check on the generation status by each facility can be possible using the generated information which is provided in the web server

Aggregated generation information can be used as statistics information for the renewable energy

9. Achieved/expected results (operational savings, CO₂, efficiency enhancement)

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- a. Implementing web-based services by monitoring real-time energy generations, availability and fault diagnosis on the deployed NRE facilities
Budget saving of 11 thou. USD & additional renewable generation increase of 200toe in 2007
- b. Real-time information providing to the Users, Renewable ESCOs and related superintendents
- c. Commonly utilization and standardization of related data communications

10. Lessons learnt

Improvement of the operation and management process by providing the integrated information on the real-time generation status of dispersed renewables

Promote the development and deployment of high performance renewable facilities by sharing the generation information which is open to the public

Build up the sound reliability on the renewable energy facilities to the public