



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

1. Name of the case NightWind

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
- Company
- web-site http://www.nightwind.eu/mediapool/48/485045/data/Comparison_EKS-Cybermart-ORNL.pdf
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5. Objectives of the case

1. Integrating renewable energy resources into the European energy service network by providing new facilities for energy storage

2. Increasing the economic value of wind energy by providing means to deliver the energy at peak demand hours.

3. Increasing the competitiveness of SME Cold Storage facilities by providing adding “energy storage” as an additional service to be provided for the European energy service network.

4. The overall impact is that the project will offer a solution to integrate wind energy with energy storage in the European electrical grid, giving space to a further growth in the use of wind energy worldwide and a contribution to the Kyoto targets at the same time.



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

Business rationale/model Use cooling loads to 'store' electricity from wind-turbines. Buy electricity at low prices during night-times. NWCS product can be acquired; gives you the amount of cost that can be saved.

1. A minimum size of 100 kW electric power.
2. Based on a specification of typical products in your cold store, we check that these products do not lose quality under varying temperature conditions
3. Assistance in getting a contract for buying energy direct from the Amsterdam Power Exchange APX
4. The key data for your coldstore (refrigeration power, cooling down time, temperature limits, daily load, control system ect.) are evaluated.
5. Customisation of the NWCS for your site
6. Install an internet connected laptop PC with the NWCS at your site, and connect it to the existing refrigeration control system. A full day performance test of the system at the site is done

key figures are given in: http://www.nightwind.eu/pageID_5528049.html

6. Technologies used Via Internet connected laptop connected to the refrigeration system.
7. Short description of the case
Operation of wind parks and refrigeration installations takes place concertedly.
Necessary control power is reduced.
8. Achieved/expected results (operational savings, CO₂, efficiency enhancement)
Energy savings up to 55 %
9. Lessons learnt
Project midway now. Simulation calculations performed; also for supermarket cooling.