

# How to write a summer energy storage heating plan

Are thermal storages a key element in future smart energy systems?

This makes thermal storages a key element in future Smart Energy Systems, with integration of heating, cooling, electricity, gas and transport systems. Since the 80ties large scale thermal storages have been developed and tested in the Danish energy system.

What are two approaches to seasonal heat storage?

Two approaches of seasonal heat storing. Pit heat storage and borehole thermal energy storage. PlanEnergi, SDH Conference, Malmö, Sweden. Marstal District Heating, PlanEnergi and Solites, (August 2014). Deliverable 4.3: Report on operation experiences and evaluation after 2 years.

How does a thermal energy storage system work?

Like how a battery stores energy to use when needed, TES systems can store thermal energy from hours to weeks and discharge the thermal energy directly to regulate building temperatures, while avoiding wasteful thermal/electrical energy conversions.

How to build buried thermal energy storage?

For the construction of buried thermal energy storages there are no standard procedures regarding wall construction, charging device, etc. available. Aquifer thermal energy storages (ATES) and borehole thermal energy storages (BTES) normally require permissions from water authorities for heat storage application.

How long does an electric thermal energy storage system last?

The system can charge/discharge in ~30 minutes and the stored energy can last for several days with less than 2% heat loss per 24 hours for large-scale systems. Siemens Gamesa in Germany has developed a 130 MWh Electric Thermal Energy Storage (ETES) system comprising rocks stored in a building.

Do I need permission for thermal energy storage?

Aquifer thermal energy storages (ATES) and borehole thermal energy storages (BTES) normally require permissions from water authorities for heat storage application. For tank thermal energy storages (TTES) and pit thermal energy storages (PTES) a clarification with authorities is recommended.



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