

Sand battery green heating solution

Researchers in Finland have built the world's first operational sand battery – a system that can store green energy for months at a time

Renewable energy:

Solar panels and wind turbines generate electricity

A 30% of electricity supplied directly

B 70% is stored as heat within **sand battery**

Solar panel

Wind turbine

Russia halted power supplies when Finland applied to join NATO

ARCTIC CIRCLE

FINLAND

300km
186 miles

SWEDEN

Kankaanpää

NORWAY

North Sea

GERMANY

UKRAINE

RUSSIA

C Hot water from sand battery can heat buildings throughout year

Electricity sent to resistive heating coil

100 tonnes of low grade sand

Sand can retain stored heat for months

Circulating air ducts warm sand to 500°C

Air-water heat exchanger

Heated water pumped to homes and other buildings

Future iterations could bury unsightly sand batteries underground

Sources: BBC, Polar Night Energy, Comsol

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