Energy & cooling · For district-cooling providers with chilled-water storage (Dubai's power grid is run by DEWA)

Thermal Battery — District cooling peak capacity & load shift

Can your plant serve the next tower? Can you commit capacity to another connection and keep existing customers comfortable on the hottest days?



01 · UAE REGULATORY & OPERATIONAL SCALE

DEWA's annual peak power demand reached 11.39 GW in 2025 (+5.83% YoY), while Empower connected ~1.7 million RT of district cooling across 1,747 Dubai buildings. Under Executive Council Resolution No. 16 of 2011, Dubai electricity is billed per kWh by monthly slab without a peak-kW demand charge.

02 · ZERO-RISK START (UTILITIES & CITY INFRASTRUCTURE)

4-week peak-release study at AED 0 upfront on 15-minute plant meter, tank and consenting-building BMS trends under NDA, with zero SCADA or BMS login. Later summer alternating-day testing (under an IPMVP plan) runs on terms agreed after the study.

03 · AUDITED STAGE, BENCHMARKS & OPERATING BOUNDARIES

Stage: Simulated, internal review. Across 28 typical Dubai buildings and two district-cooling districts with storage tanks over 16 summer weeks not used for tuning, daily fleet power peak fell 5.2% on average (5.7 MW of 111 MW) vs thermostats at 23 °C, ahead of a tuned timer's 1.2% (1.3 MW) in all 16 weeks (6.2% vs 3.9% in 13:30–17:30). Limits: fleet electricity (not cooling RT), total kWh fell only 0.16%, untested against an operator's own optimised tank schedule, 1.4–2.2 pt lead without tanks (2 re-run weeks), and tank recharge raised evening demand (+6.0 MW weekly worst 17:30–22:00; +15–17 MW worst 22:00–midnight in 4 re-run weeks).

COMPATIBLE SYSTEMS & STANDARDS

Chilled-Water Storage Tanks · BACnet/IP & Modbus BMS · 15-Min Plant & Tank Trends · IPMVP Pilot Plan

Verification Protocol · Zero Live Access

How the 4-week offline audit runs at AED 0 upfront.

Proven offline on your historical records before anything is switched on — with your own engineers, clinicians, surveyors or licensed customs staff keeping final sign-off.



Two safe ways to verify without system logins

NO VPN · NO LIVE CREDENTIALS

Option A · Read-only CSV/Excel slice under NDA
Share an agreed read-only historical export under mutual NDA. Nodal returns a quantified, line-referenced report in writing for your operational lead to verify.

Option B · Self-run by your own IT
Your IT runs Nodal's auditable offline checker locally on a standalone machine inside your UAE boundary and shares only the summary table if you choose.

What did Thermal Battery achieve in the 16-week summer simulation?

Across 28 typical buildings and two district-cooling districts with storage tanks over 16 summer weeks not used for tuning, it lowered the daily fleet electricity peak by 5.2% (5.7 MW of 111 MW) compared with 1.2% (1.3 MW) for a tuned timer, while not yet tested against an operator's own tank schedule.

Why is Thermal Battery aimed at district-cooling providers with storage tanks?

Because Dubai's slab electricity tariff (Resolution No. 16 of 2011) sets no peak-kW demand charge on ordinary building bills, and in simulation without chilled-water tanks the lead over a timer narrowed to 1.4–2.2 percentage points.

What happens to evening electricity demand when thermal tanks recharge?

Evening demand rises during recharge: up to 6.0 MW above the 23 °C baseline on the weekly worst between 17:30 and 22:00, and 15 to 17 MW between 22:00 and midnight at worst in four re-run weeks.

Delegate in one forward — no introductory call required

Web dossier: nodal.systems/thermal-battery.html · Written checklist & mutual NDA: santiago@nodal.systems

AED 0 UPFRONT