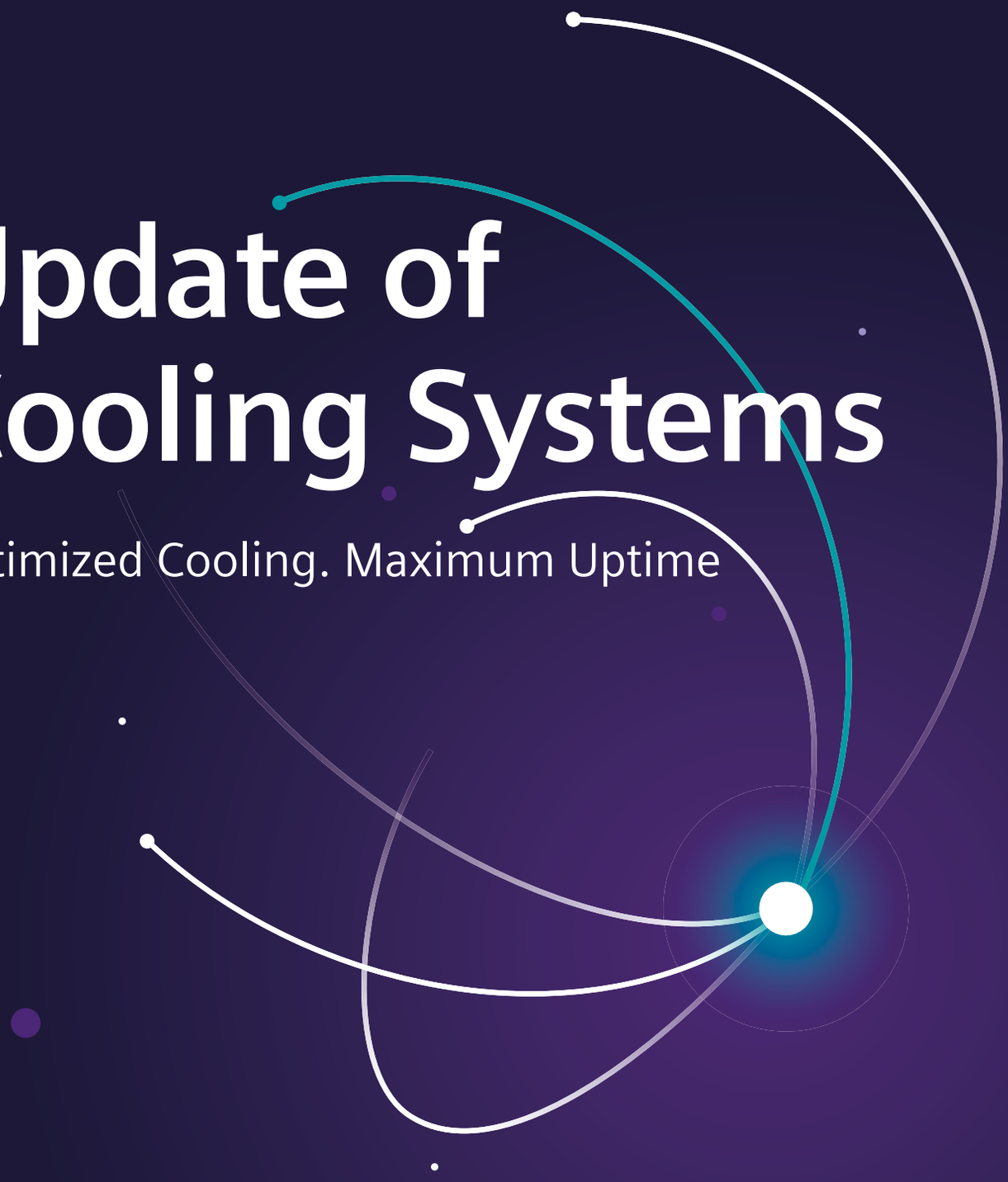
SIEMENS energy

Update of Cooling Systems

Optimized Cooling. Maximum Uptime



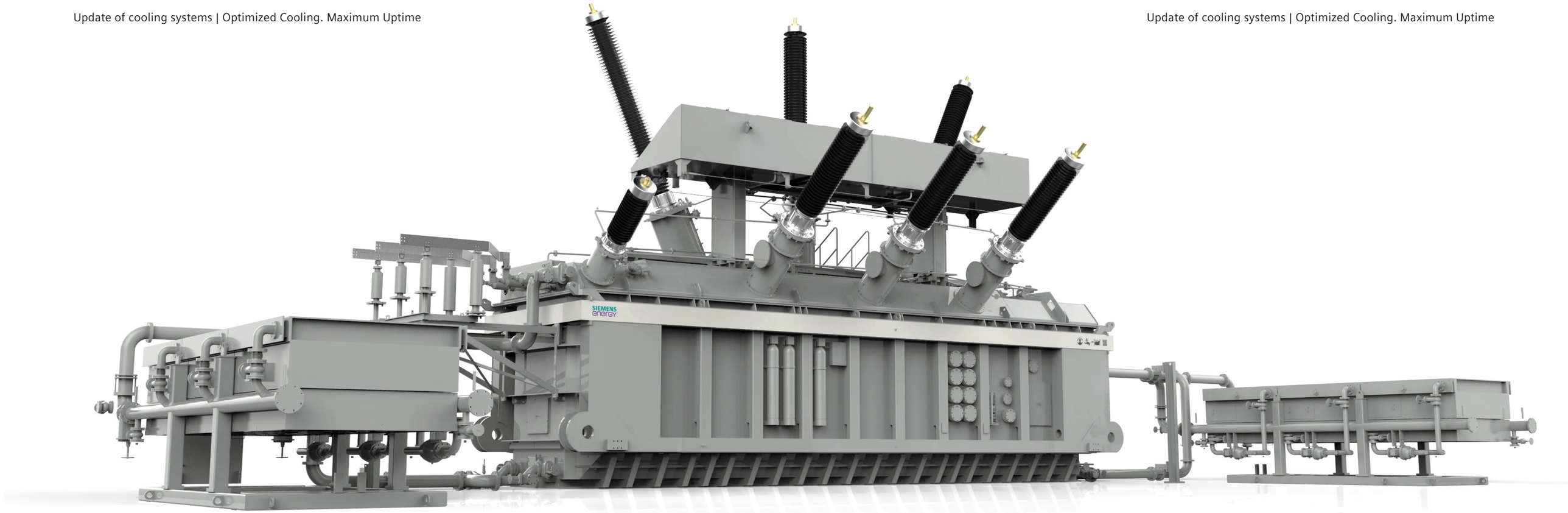


Update of cooling systems | Optimized Cooling. Maximum Uptime

Update of Cooling Systems

Many transformers in operation today are over 25 years old and running close to their thermal limits. This accelerates insulation aging and increases the risk of failure. Replacing a transformer is costly and time-consuming. Siemens Energy offers a smarter solution: targeted thermal upgrade that are fast, cost-effective, and sustainable.

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Our Technical Approach

We combine engineering precision with deep transformer expertise to deliver upgrades that make a real difference:

- Advanced thermal simulations (FEM & CFD) to assess and optimize performance
- Radiator and fan replacement or expansion
- Conversion from ONAN to ONAF or OFAF cooling systems
- Elimination of internal hot spots in connections, shields, and grounding
- Compatibility checks for bushings, tap changers, CTs, and control systems

Your Benefits

- Up to 20% load increase
- Lower hotspot temperatures (10°C reduction can double insulation life)
- Minimal environmental footprint

Sustainability That Matters

- Reuse of existing components
- Reduced CO_2 emissions
- Supports ESG targets and circular economy principles

Why It Makes Sense – Technically and Economically

- CIGRE TB887 recommends thermal upgrades as a proven life-extension strategy
- Lower oil and paper temperatures slow insulation aging (DP > 400)
- FEM/CFD simulations reveal thermal bottlenecks and guide optimal design

Real-World Success

- +11% load increase achieved by adding 16 fans to a 34-year-old transformer
- Cooler upgrade enabled a 120 MVA unit to support 140 MVA
- ONAN to OFAF conversion extended life and adapted to site conditions



Ready to Future-Proof Your Transformer?

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Let’s Talk Cooling upgrades

Contact Siemens Energy service team to learn how we can help you future-proof your transformer.

Ready? Let’s make your transformer future-proof.

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