ENGINEERING

A MORE SUSTAINABLE PLANET

TRANE DATA CENTER SOLUTIONS

With big data comes big energy demands. It affects your bottomline—and the planet we call home. But we believe better engineering can change the world.

It's why we're passionate about developing cooling systems that are both reliable and incredibly energy efficient. Our expertise helps you spend more wisely, meet your sustainability goals and preserve a better future for all.

Cooling Expertise for a Changing World

Less downtime and tangible energy reduction takes a proven partner who understands your data center. Our offerings start with a world-class team of engineers, technicians and experienced energy specialists. All Trane account managers are degreed experts in the field.

With unrivaled expertise, our ability to cater to your evolving needs sets the industry standard. It's no wonder so many trust us with their most technical designs.

HVAC Design & Implementation

- Scalable systems including chilled water, airside and hybrid solutions
- Intelligent, self-diagnostic, optimized systems for ultimate control and efficiency
- Advanced controls hardware and strategies for reduced energy consumption
- Environmentally responsible alternative energy technologies

Seamlessly Integrated Controls

- Monitoring of critical subsystems including HVAC, power and lighting
- Real-time visualization of PUE plus trending and historical data
- Features like scheduling and work order management

Operational Support

- 24/7 remote facility monitoring
- Rental and contingency services to keep you online
- Scheduled maintenance strategies for maximum uptime

A Partner In Decarbonization

With the high energy demands of data centers, finding ways to decarbonize is especially important. Whether you have a specific outcome in mind, or need help getting started, we help bring the perfect plan to life. Together, we balance your business needs with your sustainability goals.

The Department of Energy estimates that cooling and humidity control accounts for 40-60% of physical operating costs.

How do we do it? We start with energy, decarb and cooling assessments. We modernize equipment and controls. And then provide as-a-service offerings toward your PUE, WUE and CUE targets.

In fact, Trane is the industry resource when addressing sustainability. We are well ahead of the curve in accelerating clean technologies.

- #66 on Corporate Knights Clean 200 of public companies ranked by green revenues
- 20 million+ metric ton reduction in use-phase emissions of our products since 2014
- Full transition out of high-GWP refrigerants by 2030, ahead of regulation

Equipment Solutions for Any Density

Data centers must be agile. New technology is available daily and, with increasing processor and chip speed, densities are a concern for many applications. The good news is our HVAC technologies are evolving at an equally impressive rate.

We provide chilled water systems for almost any density and support rack density transitions from fan to liquid cooling designs. Our offerings cover:

- Trim cooling for two-phase immersion
- Double-density effect to single-phase immersion
- In-row and perimeter cooling systems of all sizes
- Fan coil wall designs up to 60K CVM
- Optimized chiller plant management
- Facility BMS with smooth integration into existing third-party systems

Will You Join the Trane Gigaton Challenge?
By 2030, Trane Technologies, a global climate innovator, aims to help customers cut a billion metric tons of carbon emissions.
It's the biggest commitment of any B2B company—and could reduce the world's annual emissions by 2%!

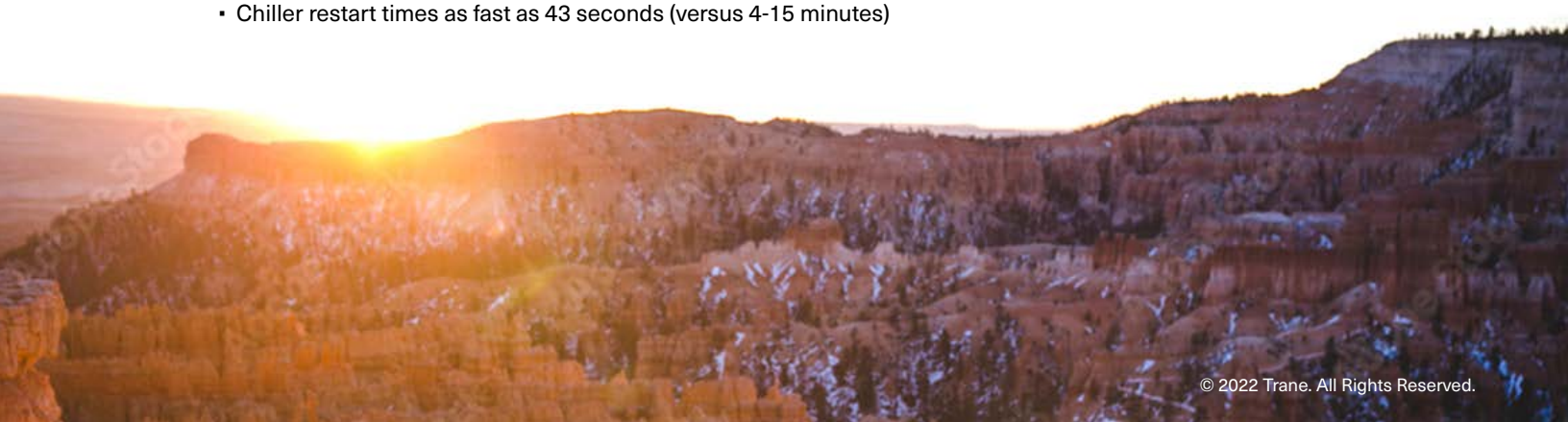
Ensuring Uptime Today and Tomorrow

Trane is renowned for reliable products, but in order to fully safeguard your data center, our commitment goes further. We are here to prepare, maintain, upgrade, restore, respond—and bring you unprecedented peace of mind.

New designs are forward thinking with best-in-class components. For existing installations, we protect uptime using components with widely available replacement parts.

Count on industry-best support resources and unparalleled service 24 hours a day, 365 days a year.

- 5,000+ factory-trained service techs in 60+ countries
- Massive rental fleet for temporary, scalable HVAC and power
- Global parts warehouses with robust, localized stocking programs
- Renewal and retrofit-in-place programs
- Chiller restart times as fast as 43 seconds (versus 4-15 minutes)



Case Study: Helping GE Embrace the Future

We helped improve efficiencies and lower costs at a GE data center with a 30,000 sq. ft. raised floor, 3,800 servers and 2/5 MVA UPS. The goal was to reduce water and electricity use, improve maintainability and provide better insight to operations.

The Challenges

- 25-year-old, repurposed office building
- Aging cooling systems approaching capacity
- Conflicting building management systems
- Manual reporting meant no real business insight

The Solution

First, we refreshed the cooling systems to remove failure modes and improve maintainability.

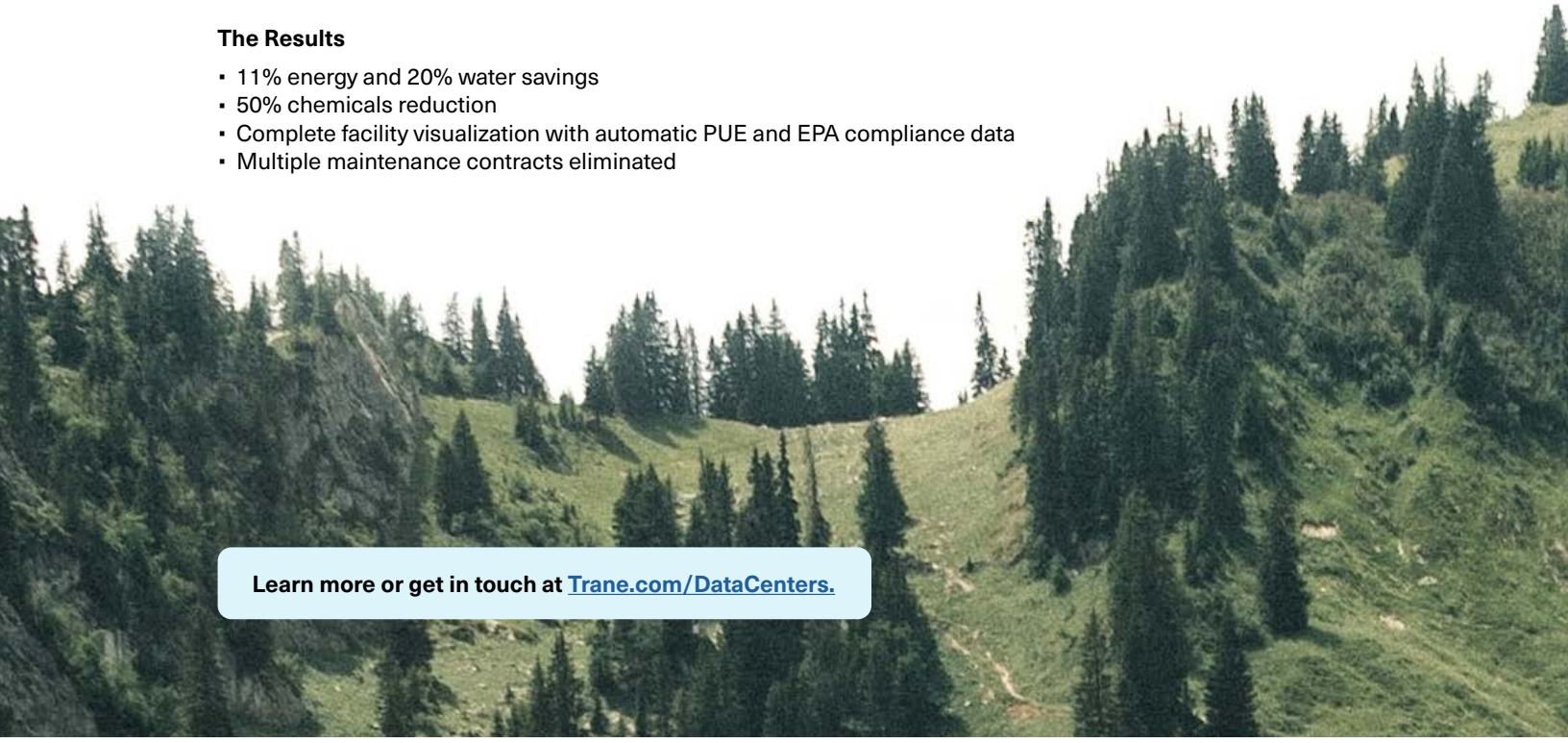
- Switched 3 x 250-ton chillers for 3 x 400-ton Trane chillers
- Increased cooling system redundancy
- Optimized cooling and water usage efficiencies

Then, we enabled a simple, holistic view of the infrastructure including key metrics.

- Replaced three BMS with one modern facility management system
- Tied together new and existing GE and non-GE standalone systems into a simplified master system
- Automated many manual processes

The Results

- 11% energy and 20% water savings
- 50% chemicals reduction
- Complete facility visualization with automatic PUE and EPA compliance data
- Multiple maintenance contracts eliminated



Learn more or get in touch at Trane.com/DataCenters.

Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit trane.com or tranetechnologies.com.

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