SMART COOLING

SIET SWISS INTEGRATED ENERGY TECHNOLOGIES AG

CASE STUDY
Ice halls - Arena Riga - Latvia

*"Electricity consumption reduced by 21% and cooling capacity boosted by 23% on average after the installation of the intelligent adiabatic **Smart Cooling™** system at ICE Arena Riga."*

SHAKED, TESTED AND PROVEN.
Efficacy results were tested, analyzed and validated. Tests were performed using **BTU** liquid flow and temperature meter **RIF600** and energy monitoring equipment **Eniscope** analytics.

CUSTOMER

ICE Arena was constructed in 2006 with a total area of 22,568 square meters and holds 14,500 spectators. To maintain a healthy icing system and lower costs, cooling efficiency at the arena is crucial.

ICE Arena's cooling equipment consists of a York chiller and an Alfa Laval dry-cooler, generating a total cooling capacity of Q=556kw. The equipment ensures the quality of both the ice and indoor climate.

CHALLENGE

During heat season, when outdoor air temperatures can reach +27°C, cooling facilities operate in peak mode. With a continuous working cycle, the facilities were constantly overloading and failing to ensure the required cooling capacity. Electricity consumption increased considerably and, consequently, so did costs.
Boosting efficiency and capacity of ICE Arena's cooling equipment was imperative.

SOLUTION

The solution to install the intelligent adiabatic **Smart Cooling™** system meant that considerably cooler air would flow into the equipment's condenser, a key advantage of the adiabatic system, and allow the facilities to operate in a lower outdoor-temperature mode. The inflowing air temperature can be reduced by 10-15°C with **Smart Cooling™** and the equipment can produce more cooling capacity while consuming less electricity.

The two chillers, located on ICE Arena's roof, received **Smart Cooling's™** customized adiabatic panels. In addition to providing lower operating temperatures, **Smart Cooling™** ensured the condensers were protected against direct sun exposure, extending their life-cycle and reducing the need for maintenance and repairs.

RESULTS

ICE Arena's technical director states that, after the installation of the intelligent adiabatic **Smart Cooling™** system, cooling capacity and efficiency increased notably.
Cooling facilities continually operated in normal modes, even during extreme outdoor air temperatures (+35°C and higher). Facilities saw and shorter operating cycles and no more overload.

Monitoring results show that with **Smart Cooling™** cooling capacity increased by 23% and electricity consumption decreased by 21% on average. The return on investment

COOLING CAPACITY INCEASED BY ↑ 23%

ELECTRIC ENERGY CONSUMPTION REDUCED BY ↓ 21%

ROI 9 MONTHS

The intelligent adiabatic Smart Cooling™ system is a proven, state-of-the-art cost-saving pre-cooling technology.

- Modular system
- Suitable for all types of dry coolers and chillers
- Easy and fast installation
- Certified system and approved by major cooling equipment manufactures
- Minimal maintenance

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