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The most efficient cooling tower water treatment solution

Commercial buildings account for 40% of national energy consumption in the United States and 35% of carbon emissions in North America.

There is an overall growing pressure and urgency to transform commercial building operations that consume large amounts of energy and water, and that use substances potentially harmful to the environment and to human health.

Cooling systems, in particular, consume enormous amounts of energy and water in commercial buildings – **up to 30% of a commercial building's overall energy budget and 50% of the water used.**

As a result, cooling system efficiency is emerging as the prime area for buildings to improve overall energy and water efficiency and reduce a facility's carbon footprint.

Commercial building owners and managers are under significant pressure to reduce operating costs associated with running cooling tower systems. In addition, portfolio managers are increasingly charged with improving the energy efficiency and overall sustainability of their building operations.

The EnviroTower overview

The EnviroTower technology provides a proven, reliable solution for maximizing energy and water efficiencies while minimizing the environmental impacts of cooling towers.

This solution enables commercial, institutional and industrial customers to drive down their cooling costs through a clean, comprehensive water treatment system which reduces energy and water consumption, cuts carbon emissions and reduces chemical usage in cooling towers. *EnviroTower* is recognized by leading Engineering and Design firms for its green building benefits and potential to contribute to *Leadership in Energy and Environmental Design* (LEED) certification.

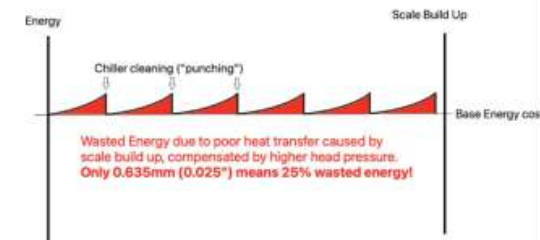
The *EnviroTower* comprehensive water treatment solution has earned the endorsement of North America's

largest and most demanding commercial real estate organizations through its ability to deliver consistent, measurable results.

The EnviroTower Value proposition

The *EnviroTower* clean cooling tower water treatment solution directly addresses the following critical challenges facing commercial building owners and managers:

- **Reduce Cooling Costs:** With *EnviroTower*, commercial building owners can achieve immediate, verifiable cost savings from improvements in building cooling system efficiency – due to reductions in energy and water consumption – and cut their facility's cooling costs by 10 to 20%, or about US\$0.15 a square foot (or just over \$1.50 per m²).
- **Maximize energy efficiency:** *EnviroTower* offers superior protection against scaling and fouling buildup. Scaling and fouling can reduce chiller energy efficiency up to 25% in some cases.



- **Reduce water consumption:** The *EnviroTower* removes the hardness limit on cycles of concentration. Water consumption can often be reduced by up to 25 percent depending on the water quality.

Savings Potential From Increased Cycles

Increasing cycles of concentration from 3 to 6 reduces cooling tower water usage by 20 percent

Cooling Tower Water Usage (GPD)	New Concentration Ratio (CCR)									
	2	3	4	5	6	7	8	9	10	11
1.5	33%	44%	52%	57%	60%	63%	65%	67%	68%	69%
2.0	44%	57%	66%	72%	75%	78%	80%	82%	83%	84%
2.5	55%	70%	80%	87%	90%	93%	95%	96%	97%	98%
3.0	66%	83%	94%	100%	103%	106%	108%	109%	110%	111%
3.5	77%	96%	108%	115%	118%	121%	123%	124%	125%	126%
4.0	88%	109%	122%	130%	133%	136%	138%	139%	140%	141%
4.5	94%	117%	131%	140%	143%	146%	148%	149%	150%	151%
5.0	99%	124%	139%	149%	152%	155%	157%	158%	159%	160%
6.0	105%	132%	148%	159%	162%	165%	167%	168%	169%	170%

- **Protect the environment:** The *EnviroTower* systems produce significant reductions in a facility's environmental footprint by conserving energy and water use, and reducing the discharge of harmful chemicals into the environment.
- **Get maximum life span of your equipment:** Every time chillers are cleaned and scale is removed (a process known as "chiller punching") either by chemicals or mechanical brushing or both, some copper is lost from the chiller tubes, resulting in shorter life expectancy of the chillers (vs. estimated life span by the chillers manufacturers). The *EnviroTower* solution keeps scale build up in the chillers under control, eliminating the need for chiller "punching".
- **Improve health and safety:** Chemical handling and exposure are a health and safety risk to employees (and owners). The *EnviroTower* removes the need for handling of harmful chemicals.

The *EnviroTower* differentiation

EnviroTower is focused on delivering long term customer savings and peace of mind to its customers and is uniquely positioned in the market by its:

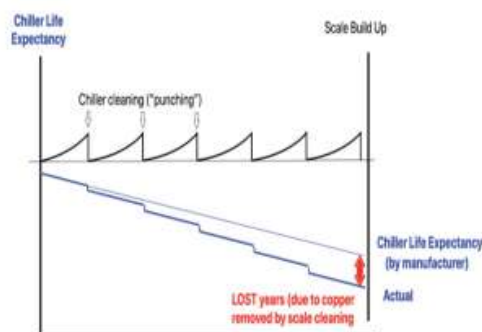
- **Comprehensive solution:** More than just a product, *EnviroTower* technology gives the customer a total solution to protect the chillers and tower in HVAC systems from scale build up, corrosion and biological growth in the water. Key solution elements include full engineering and application

expertise to fit the *EnviroTower* system to the customer requirements, reduction of chiller's tube cleaning ("punching"), minimal chemical usage, ability to drain blow-down water into storm systems (as to lack of harmful chemicals in the water) and optional system performance monitoring capability.

- **Technical Expertise:** *EnviroTower* has in-depth expertise in water treatment, water chemistry, treatment chemicals, product development, manufacturing, engineering and application knowledge. In addition to the numerous patents on its technology, *EnviroTower* has a key IP advantage in its proprietary *ScaleBuster* water conditioning technology as well as knowledge and experience in applying the technology in the field under a variety of conditions. This knowledge has been used to develop a proprietary software model that can analyze a water sample to determine the viability of the solution and operating parameters.

Financial Analysis

EnviroTower delivers solid financial benefits through energy, water, chemicals and maintenance savings. Calculating and measuring these savings is straight forward. The following tables summarizes an example financial impact of implementing the *EnviroTower* solution.



Example 1 – Hotel HVAC (CA USA) with 380,000 sq. ft. (approx.. 40,000m²) floor space

Important: The OpEx savings doesn't include the potential CapEx savings by increasing the life span of the chillers (eliminating or reducing "chiller punching" which shorten life expectancy of the equipment as well imposes health & safety concerns). CapEx improving can be in the range of hundreds of thousands of dollars (US) for the chillers' life span of 20-25 years! ∞

OpEx Cost Components	Chemicals	EnviroTower	EnviroTower Savings	Percent Savings
Chemicals or Minerals	\$27,000	\$1,200	\$25,800	96%
Water	\$36,907	\$33,554	\$3,353	9%
Annual system cleaning/service	\$6,000	\$0	\$6,000	100%
Maintenance/labour	\$7,800	\$1,200	\$6,600	85%
Energy (chiller and pumps operation)	\$212,400	\$189,500	\$22,900	11%
Total OpEx	\$290,107	\$225,454	\$64,653	22%
ET system CapEx	\$142,600			
ROI (Months)	26			