

Proper maintenance is a critical element in maintaining energy efficiency in chillers and cooling towers. Kiko Technology is a green cleaning technique for the removal of scale and corrosion in the chiller tubes and spray nozzles of cooling towers. Chillers consume 2-4% more energy for every one degree Celsius (°C) temperature increase. Furthermore, our products are compatible with chemical treatments (e.g. Copper (II) Sulfate (CuSO₄) or, slow release biocides) for the control of algae.

Fill in the figures for your business according the below parameters to determine the financial savings and environmental benefits of using Kiko Technology:

PARAMETERS	CONTROL	TEST (Kiko Technology)
GENERAL		
No. of cooling towers	11 towers	11 towers
Avg. water vol. per tower	1500 cbm	1500 cbm
No. chiller & condenser units	5 units	5 units
No. of makeup water tanks	1 tank	1 tank
No. of filters to install	--	24 (2/tower + 2/makeup tank)
Ttl. cost of filters	--	5-15% of cost savings under lease financing
Hardness of water (in ppm ^{**})	270 ppm ^{**}	270 ppm ^{**}
COST SAVINGS CALCULATION		
Savings @1mm scale reduction	n/a	2% - 3.5%
Cost of electricity (per kWh [^])	HK\$ 1.09 (per kWh [^])	HK\$ 1.09 (per kWh [^])
AIR-CONDITIONING (A/C[#])		
Ttl. electricity bill per month	US\$ 650,000.00	As across minus savings (below)
A/C per mth. (40% of ttl. bill)	US\$ 260,000.00	As across minus savings (below)
Savings per month at a 2.5% improvement in chiller capacity	--	US\$ 6,500.00 (2.5% of \$260,000)
Total savings/yr.	--	US\$ 78,000.00
ANNUAL MAINTENANCE & REPAIRS		
Cost of maintenance (estimate)	HK\$ 100,000.00 (or, US\$ 12,500.00)	--
Savings on repairs & cleaning	--	US\$ 12,500.00
Total savings per year	--	<u>US\$ 90,500.00</u>



Cooling towers at the Lisboa Hotel, Macau
 – Kiko Technology yields annual savings of more than 60 times the cost of investment with no added maintenance fees.

Remarks:

* XE = exchange rate (use a USD:HKD XE of 1:8 throughout)

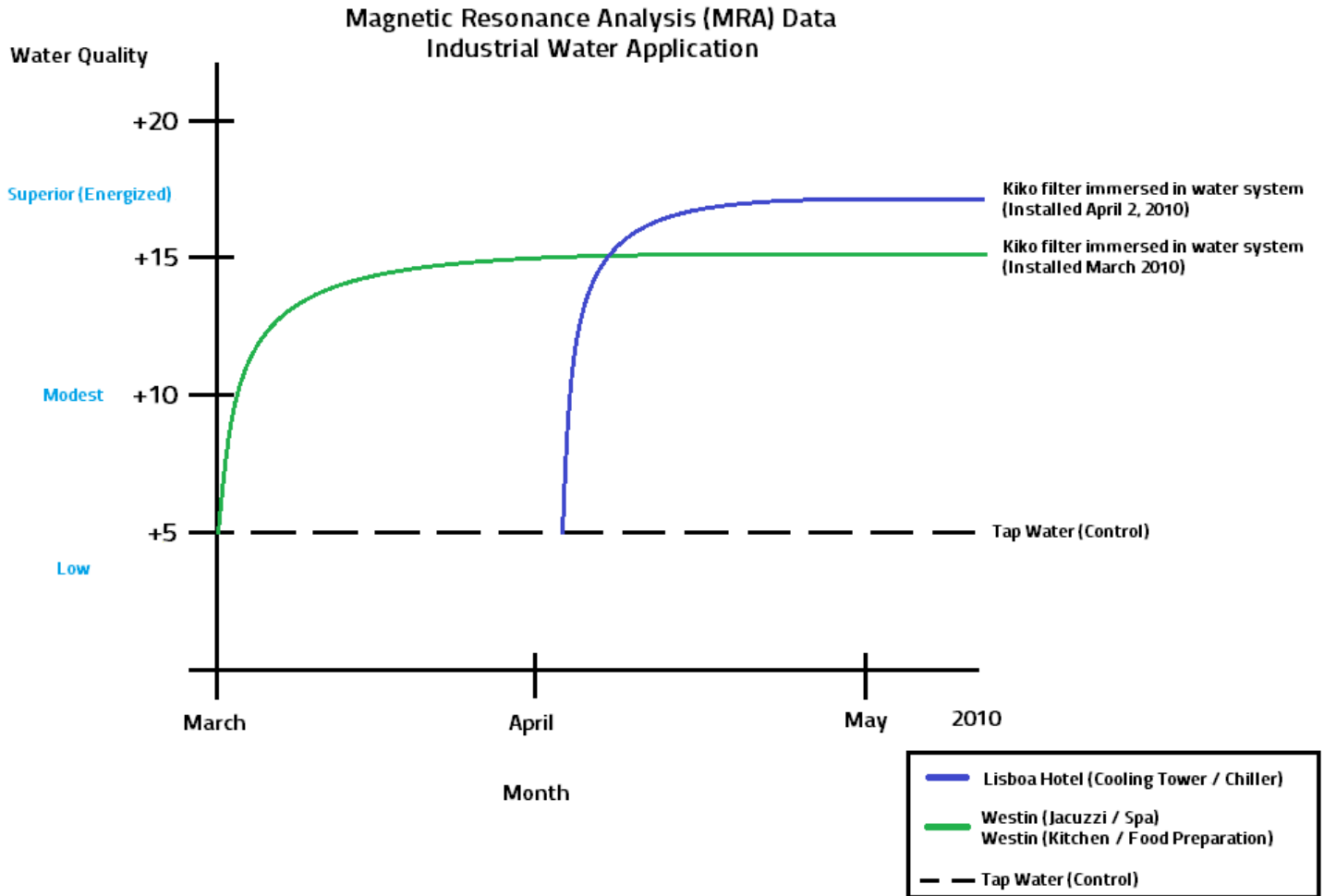
** ppm = parts per million.

** 0-50 ppm = soft water; 100-400 ppm = hard water which leads to the development of scale.

[^] kWh = kilowatt-hour

[#] A/C = air-conditioning (in this case, central air-conditioning)

OTHER VALUE BENEFITS (incl. intangible benefits)		
PARAMETERS	CONTROL	TEST (Kiko Technology)
Lifetime of filters	--	3-5 yrs.
Installation time	--	20 mins.
Condition of spray nozzles	Scale	Scale-free
Hardness of water	Hard	Water feels "soft to the touch"
Chemical treatment	Algae growth	Reduced algae growth
Condition of pipes	Scale	Scale-free
Iron rust	Corrosion	90% reduction in corrosion



Real-life trials – Kiko Technology was implemented at the Lisboa Hotel and the Westin Resort in March 2010 and April 2010 respectively. Water samples were taken from both sites in May 2010 and tested against its control; Macau tap water. Tap water has a constant but a relatively low energy level as tested by magnetic resonance equipment (equipment similar to MRI scanners, producing data but not imaging.) Meanwhile, tap water introduced to Kiko Technology experiences an immediate spike in energy levels only to remain constant at a relatively high level. As all filters have a shelf life of 3-5 years, once cartridges are in constant contact with water, energy levels remain in the +15 to +20 brackets for the duration of this period.