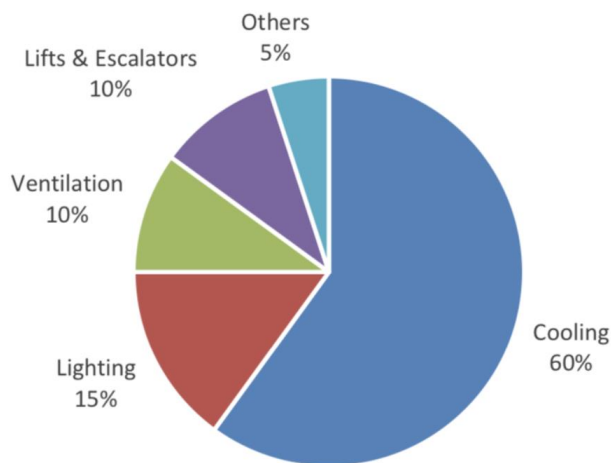


Why should efficiency of chillers be an important aspect of facility management?

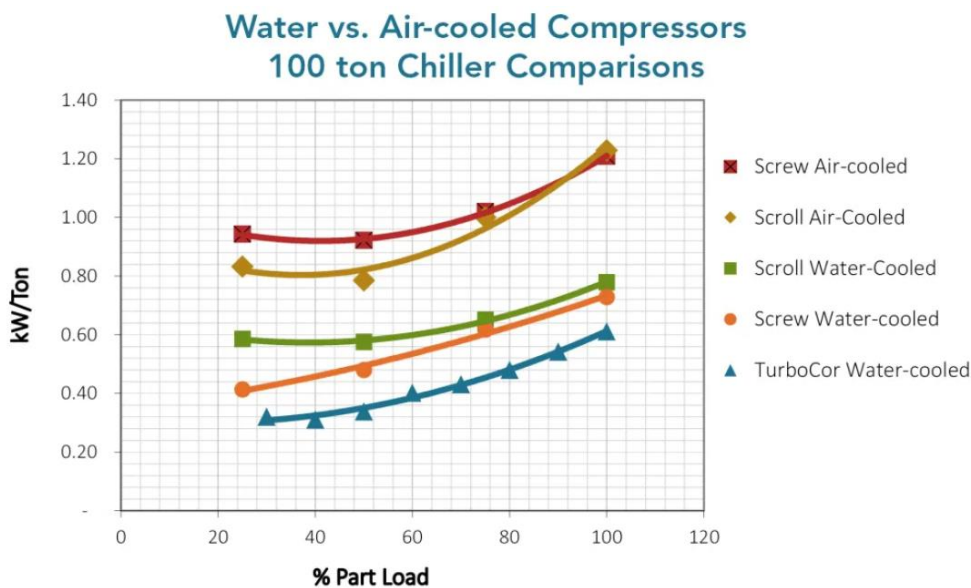
Chillers are among the major energy consuming pieces of equipment taking up between **40% and 70%** of the total energy consumption in institutional and commercial facilities. Therefore, their efficiency has a significant effect on the energy consumption and on the bottom line of businesses. It is essential for businesses to focus on improving the efficiency of chillers.

Typical energy consumption chart for an industrial facility



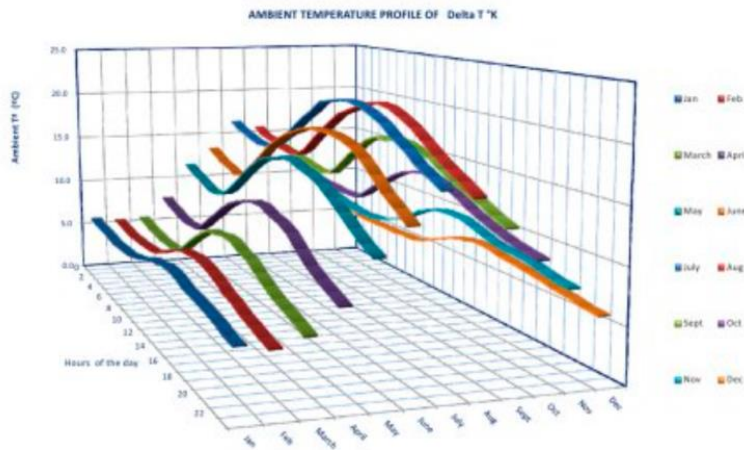
The following strategies can be used by facilities managers/engineers to reduce energy consumption by chillers which will make a huge difference in the net savings even if a small percentage of change is achieved in efficiency.

1. Choose water cooled chillers over air-cooled chillers whenever possible.



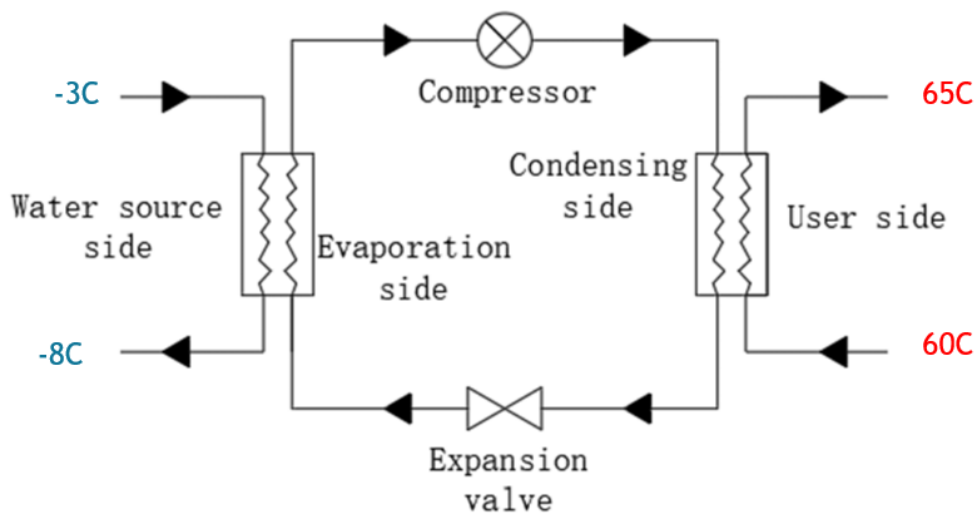
2. Select the chillers based on the current and future requirements of the facility.

Record data for existing usage and forecast future usages and select an appropriate chiller for the use case. Do not undersize or oversize the chiller by a large margin. Choose the right compressor type, refrigerant and controls type suitable for the capacity, temperature and load variations required. Our manufacturer can generate a report of efficiencies as below based on the data collected which can be used to compare and choose the right solution.



3. Choose heat pumps or heat recovery systems over cooling only systems

To make use of the waste heat that will otherwise be released to the atmosphere. The heat can be used for process or domestic heating.



4. Maintain the chillers by professionals experienced and knowledgeable in the subject matter



5. Maintain the cooling towers and heat exchangers at appropriate intervals.



6. Maintain the quality of water used on the chillers.

System: Chiller with plate heat exchanger	
PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

By performing regular maintenance of chiller systems, facilities can decrease energy costs, extend operational efficiency, reduce power loads as well as save money on labour, equipment, and other associated costs. A maintenance program for chillers also helps a facility with its sustainable goals by extending the life of the HVAC system and reducing energy consumption.