

Dear Sir,

We write with reference to the Senate Select Committee on Electricity Prices.

In particular, we wish to make comment upon "Peak Demand".

Much has been written about the need to have an Electricity Grid capable of meeting "Peak Demand" periods that may be for only a short time-frame on only a small number of days every year.

There are obviously a number of options open to ameliorate the situation and one is a process that we design, supply, and install.

The process is referred to as Thermal Energy Storage (TES) or Load Shifting. Basically, the process facilitates the manufacture and storage of what we refer to as Flow-Ice® - also known as Binary Ice or Micro Ice during off-peak periods - at lower tariffs. The ice can be produced and stored in any required quantity. The ice is at -3°C, remains pumpable at all times, and poses no potential problems as did old fashioned systems based upon the production of solid blocks of ice.

Because solid ice has a need to expand and contract, there were many inherent problems with the solid ice produced cracking tanks and piping systems.

As the building Management System determines that a building is heating up internally during the day time, instead of bringing on additional chiller sets, the latent cooling contained within the stored pumpable ice is transferred via a Titanium heat exchanger thereby removing the need for power for air-conditioning during periods of peak demand.

Also, for chilled water lines, the slurry ice offers up to five times (x5) the cooling as an equal volume of chilled water.

For new systems that allows the use of smaller diameter pipes and smaller valves and pumps for a given duty.

For systems that require additional chilled water capacity (possibly buildings that are to be "upgraded" or expanding operations such as universities) our systems will allow significant cooling capacity without any major alterations. Usually the tankage that has been installed for the chilled water systems can be utilised to store the slurry ice.

This is not a new concept but the latest iteration available has a much simpler format, a smaller footprint, and is almost infinitely up scaleable.

In more complex situations this same system can also provide hot process water (heat recovered from pumps and compressors etc) and potable water (from Saline sources). This can provide COP's (Coefficient of Performance) of up to 5 (and even greater in areas with lower ambient night time temperatures).

There is a deal of literature and technical information available if the system is considered to offer advantages sought by the Committee.

We would look forward to providing further data to expand on this very brief submission.

Regards,  
Bruce Smith - Managing Director