

**Nominee: Excool Ltd**

**Nomination title: Excool Indirect Adiabatic and Evaporative Data Centre Cooling Product**

EXCOOL Data Centre Cooling Unit.

Excool is a fully developed and purpose designed data centre cooling product which we believe is the most efficient indirect economiser in the world both in terms of water and energy usage. In many cases it is possible to use the product without need for mechanical cooling. The system uses outdoor air indirectly through a specially designed series of heat exchangers enabling cooling to take place without outdoor air entering the data hall, therefore air pollution hazards such as smoke and salt aerosols are kept out of the building. With the use of specially designed adiabatic sprays the Excool product can maintain data centre internal temperatures of 24degC with ambients in excess of 35degC, There has been a growing need for data centre cooling innovation, an acceptance of higher server inlet temperatures in 2008 and better air management made efficient use of indirect adiabatic cooling a viable proposition.

The challenges were to remove the risk of outdoor air contamination entering the Data Centre, to ensure we could maintain a stable environment and to do this reliably and more efficiently than existing systems. After concept stage we required a specific environmental test chamber to put our theory to test, we developed our own in the West Midlands and have developed our product to the reliable, energy saving, product we offer today. Our advantages and differentiators over our primary competitors are that in the first instance we designed our product from the ground up, specifically for the Data Centre Cooling environment. Our greatest innovations are the heat transfer medium, adiabatic method and the arrangement of both, which together form the essence of the system efficiency. In most cases this allows our product to be used without mechanical cooling being needed. pPUE are available from 1.02. Since the introduction of our product data centre operators no longer have to rely on energy hungry mechanical cooling and can dramatically reduce their infrastructure, operating and maintenance costs.

**Why nominee should win**

-Typically using an annualised average of 25-35kW and 500m3 of water for every MW of cooling delivered, Excool represents a real sea change in low energy data centre cooling

-By innovative use of and by enhancing existing tried and tested well understood technologies the product is very easy to understand and removes fear normally associated with new products.

-The product uses less power and is directly coupled to the building. The mechanical and electrical infrastructure is smaller costs are lower, and energy consumption typically 5-10% of conventional systems.

- The use of tried and tested components enhance reliability reduce complexity and make maintenance simpler.