

**Nominee: Telstra Global**

**Supporting Vendor: LHC Docklands Data Centre**

**Nomination title: London Hosting Centre goes green**

Telstra Global is a leading global supplier of managed network services and international data, voice and satellite services. It is a division of the leading Australia-based, tier 1 telecommunications and media services company, Telstra Corporation Limited, and owns one of the most technologically advanced IP backbone networks in the world. Telstra provides global telecommunications services and solutions and is an expert in bringing the advantages of customer centric managed network solutions to the business community. Together with its offshore subsidiaries and international investments, Telstra serves over 200 of the world's top 500 companies, spanning Europe, Asia Pacific and the Americas. Recognition of adopting best practices in respect of operational sustainability sits at the heart of the Telstra Global brand. Telstra has therefore set a target to reduce its carbon emissions intensity by at least 10 per cent by 2015, with a stretch target of 15 per cent. Telstra believes that sustainability works on three levels: improving operational resilience, commercial sustainability and environmental sustainability. Telstra views its sustainable commitment as a good business practice as well as benefitting the environment.

As global data centre power demand grew by 63% globally to 38GW (gigawatts), up from 24GW in 2011 (The DatacenterDynamics 2012 Global Census Report), Telstra is committed to bucking the trend and achieving a decrease in its power usage. With a global portfolio of data centres covering 400,000 sq ft across Europe, Asia and Australasia, Telstra sees energy efficiency measures at its data centres as crucial in achieving a carbon reduction. Across Telstra's global data centre network, it has implemented a number of innovative changes to help achieve its 10% reduction target. In EMEA, in excess of £3.5M pounds have been spent on two projects alone.

Initiatives include:

- Using power at its data centres which is either generated or purchased from renewable resources, such as wind, hydro, and energy from waste and solar
- Reducing the number of light fittings in its data centres and replacing them with energy efficient tubes, which has reduced CO2 emissions by approximately 68 tonnes
- Installing new variable speed pumps which are up to 40% more energy efficient than the existing pumps
- Purchasing new chiller compressors, which operate at higher efficiency COPs of 9.1 (compared to 3.1 on existing system)

A specific example of Telstra Global administering innovative green practices in the UK is at its London Hosting Centre (LHC), located by the River Thames at the heart of London Docklands. LHC offers the latest in secure co-location, managed hosting and network solutions. Covering 114,250 ft, the centre's facilities meet market demands for power, redundancy, high quality service and maintenance. Telstra faced two key challenges with the LHC which needed addressing: its power demands and cooling costs.

In March 2012 it began upgrading the LHC to overcome these challenges. The LHC's 13 uninterruptable power supply systems (UPS) were replaced with new modular APCPX500 systems which allows for easier moving of power around the various floors of the LHC. The new system has increased efficiency by over 15% to 96% efficiency. The LHC was also fitted with 106 super high efficiency precision Stulz DFUs (down flow cooling units), which are up to 40 per cent more efficient than the existing cooling units and deliver conditioned air into a raised floor void for distribution. The previous fans worked at a constant speed belt, in comparison the new units have a direct drive, which is inverter driven, which is significantly more efficient, delivering conditioned air into a raised floor void for distribution. Telstra was further able to reduce omissions by developing a new voltage optimisation system which was able to achieve an estimated 10% saving on cooling costs, equating to approximately £300,000 per year. This was possible by reducing the voltage in the chiller plant from 240V to 220V, an example of how a relatively straightforward change can make a significant difference in terms of efficiency. The main challenge during the project with both the UPS and cooling unit upgrades was keeping the data centre live for customers, whilst the works were carried out. It worked very closely with the design engineers, contractors and with customers to ensure there were no issues. The works were carried out in a phased approach to minimise possible customer disruption. The Uninterruptable Power Supplies were replaced overnight and at weekends to avoid putting customers at risk during core business hours. Project Management and planning were key to the success of both projects.

- New modular APCPX500 systems offering 96% efficiency
- Super high efficiency precision Stulz DFUs (down flow cooling units), which are up to 40 per cent more efficient than the existing cooling units
- New voltage optimisation system achieved an estimated 10% saving on cooling costs, equating to approximately £300,000 per year.
- Super high efficiency precision downflow cooling units has improved efficiency (Telstra)

### **Why nominee should win**

- Telstra faced to key challenges: reduce power usage and cooling costs
- The upgrades have brought measurable outcomes – for example the LHC will reduce power demands by an estimated 10 per cent and its annual cooling costs by up to 40 per cent
- Telstra as an organisation is committed to significant energy savings, the LHC is example of how it is doing this across its global portfolio of data centres