



DATA CENTRE COOLING OPTIMISATION

Quantify · Implement · Verify

O₂

CLIENT -

**O2 - Part of the
Telefónica Group-**
A leading European
network operator

PROJECT -

15 x perimeter
cooling unit energy
and carbon saving

Case Study

BOTTOM LINE

Fan power energy reduction -	38%
Energy saving per annum -	244 MWh
CO2 reduction per annum -	130 TONNES
Total annual savings -	£24,529

33 months payback

RECOMMENDATION

"Efficient Air has provided us with a solution that will reduce our energy costs and CO2 commitment, provide us with enhanced reliability, control and resilience, with reduced maintenance. The project was executed in a timely, flexible and reliable manner, with a high quality of workmanship and without any undue disruption. I also appreciated dealing with a friendly, knowledgeable company. We are already able to measure the benefits, the project fits very nicely into our overall program, and it has given us some positive data to request funding to convert the other 16 similar equipment sites throughout the UK that support the network."

Paul Eggleton, UK Energy and Carbon Manager

"I'm very pleased with Efficient Air, and the results give me great satisfaction. They worked at a good pace, were flexible and required minimum supervision, they were very competent and had good knowledge of the environment and my expectations. The finished product looks good with a high standard of installation. I would definitely use Efficient Air again."

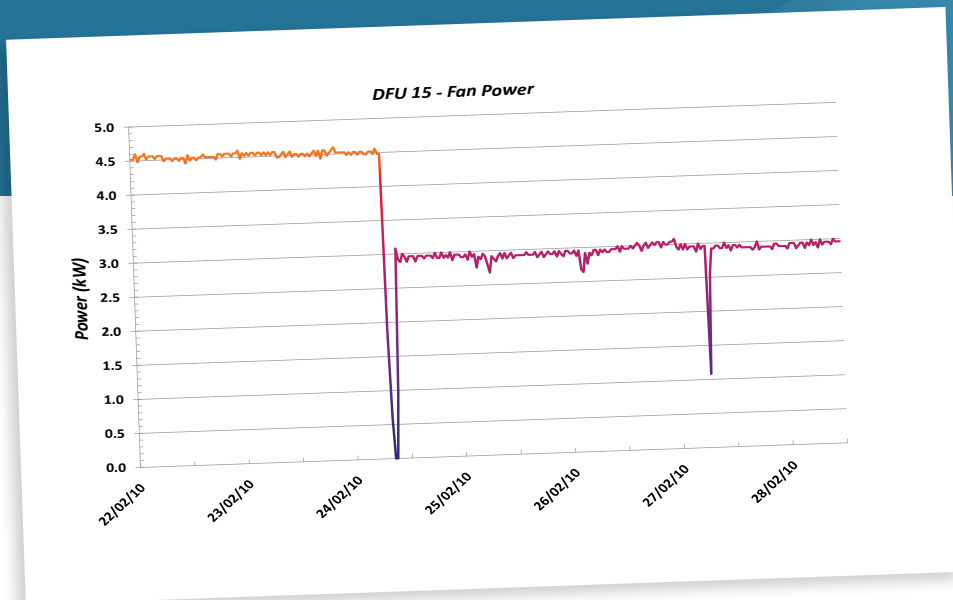
John Atherton, Switch engineer



Before



After



THE BRIEF

O2 UK has set itself the aggressive goal of achieving 40 percent reductions savings against 2007 levels by 2015. Understanding that it's 24/7 network operation represents in excess of 80% of it's total carbon footprint, the company realised that data centre cooling would represent first class low hanging fruit. Efficient Air were therefore tasked with not only optimising the server cooling units, but also increasing their operating life while reducing risk, and maintenance costs.

THE RESULTS

While maintaining the critical environment present within a data centre, Efficient Air replaced the fan components with high efficiency alternatives. Throughout the installation, O2 were able to view the results in real-time through its own monitoring equipment already present on each cooling unit. The graph above clearly shows the step-change in power following the installation of replacement fans to one of the cooling units.

OTHER BENEFITS

- 1 The use of the sunken fan locations has resulted in better air flow over the heat exchanger which reduces dead spots, thus increasing heat exchanger efficiency.
- 2 The elimination of the belt drive reduce expenditure on maintenance and replacement parts, including less frequent filter replacement.
- 3 The installation of backward curved EC (electronically commutated) motors could potentially deliver further saving through 0-10V speed control, without the risk of fan hunt and potential coil freeze apparent when fitting Inverters to the existing traditional forward curved blade type fans.



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For further details on our **SPHERE** legacy data centre cooling optimising, please contact:

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