



**Royal
HaskoningDHV**
Enhancing Society Together

Renewing emergency power system at optimal cost for data centre

Case

The emergency power systems at our client's data centre were experiencing frequent battery failure and needed maintenance. What was the optimal solution?

Our first assessment looked at whether adequate power was being provided by the existing set up. It's necessary to go back to basic questions because experience shows that project scopes when setting up data centres can be downgraded in pursuit of best value for money.

In this case, taking into account distribution losses and the fact that the generators needed to power their own cooling and diesel fuel systems, we discovered the transformers were unable to deliver the power load required. Our conclusion was that only 1240kW IT load could be supported, not the expected 1500kW.





A comprehensive assessment of options

A thorough assessment identified 10 possible options for our client, ranging from replacing the entire uninterruptible power supply (UPS) installation to just replacing the batteries.

We explored the relative benefits of various technologies. For example, lithium-ion batteries are widely promoted for their advantages but in this case the extra expense did not offer favourable return on investment. While they require less cooling, this did not add value because adequate cooling was already installed. Further, space freed up in the battery area if fewer batteries were installed could not be used for anything else.

Decisions were also shaped by the fact that our client wanted to meet relevant industry standards without investing more than necessary, and took into account expected life-span of the data centre, which indicated the chosen solution should be acceptable for 10-20 years.

We presented the client two alternatives based on their long-term plans

Having tabled the options in a final summary, it was clear the most economical options were to replace the UPS and batteries or just the batteries, in each case with VRLA batteries with autonomy time of 10 minutes. The choice between the two options was made by the client based on their own long-term plans.

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