

## **SNIA Emerald : helping you work out what the “Carbon Price” will do to your storage cost**

“Green” is back on the agenda in Australia, now that we are looking at a cost for carbon at \$23 per tonne for the next three years. The issue is how this tax will translate to the cost of running IT?

In the last few years there has been a great deal of work done to classify the power consumption of servers. Today, you can get specifications for most servers and understand their power draw when idle and when processing. However, there has been no industry validated way to measure and compare the energy efficiency of storage arrays. Now, as data has grown, the amount of storage within data centres continues to grow in its significance to the overall power consumption, and customers need the tools for consistent measurement.

In the past this has not been an easy thing to do. The goal is to have a measure of how many GB of storage you can have per watt of energy. The underlying issue is what is the service level and loading on that storage. There are many variables that affect this such as:-

- Storage Media used
- Structure - RAID level
- Access profile – Read/Write
- Efficiency features – Deduplication, compression, etc.

SNIA Emerald is the result of a number of years of work by SNIA with both the industry and the authorities, (such as the Environmental Protection Agency in the USA), to define a meaningful measure as well as describe a reliable and consistent testing methodology. The original concept was similar to the ‘star ratings’ which you get on household appliances. This simple measure allows you to factor in energy consumption into your decision, weighing up the features and functionality, while being able to estimate how much the total running costs will be.

Due to the complexity of the problem, the industry has not been able to formulate a simple ‘star’ measure. However, SNIA has managed to distil this to a few pages to allow you to understand the energy consumption and estimate (with your workloads) of how much power the array will consume.

The data is freely available at <http://s니아emerald.com/> and although today there are a limited number of completed tests, over the coming months it is hoped that all vendors will eventually complete this database. Storage system manufacturers can download the SNIA Emerald Power Efficiency Measurement Specification from the SNIA Emerald website, as well as a User Guide that provides step-by-step guidance on how to setup a test and measurement environment for a storage system under test, and then submit measured test results to the SNIA Emerald Program. Once submitted test results are approved for public posting, manufacturers will obtain a SNIA Emerald Program logo to highlight their program participation. In turn, the industry at large can view the

posted test results of various storage systems and review products that underwent the SNIA Emerald testing requirements.

Although in general Australian IT managers are not responsible for the energy consumption in the data centre, with the new tax this is probably going to change. After all we are being told that the reason for the tax is to change behaviour. So next time you are evaluating storage arrays, have a look at the Emerald site and if your vendors storage array is not there, ask your vendor why not!

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