

# ENERGY STAR Storage Specification Draft 4

## Comments from the European Commission

We recognise that the process to define ENERGY STAR program requirements for Data Center Storage Eligibility Criteria Version 1.0 is now at a late stage that there is little opportunity to make substantive changes, but we hope that the following comments on draft 4, distributed 21 March 2013, can still be taken into consideration.

### General Comment

Market penetration: Could the EPA please publish the final data set and the data set % qualification rates for this specification? We would also much appreciate a continued evaluation of future specification revisions on the basis of market and data set % penetration levels, to give clarity on the ambition of the specifications and ensure that only the best performing storage products continue to be qualified as ENERGY STAR.

### Detailed Comments

Line 411, table 2: Power factor requirements for PSUs: The requirements are now the same for all PSUs – therefore it is suggested that the table be collapsed to a single row for all PSUs for simplicity.

Line 427 – Power modelling presale tool: The EPA language in the specification states that EPA “expects that a power modeling tool characterizing the storage product will be made available to manufacturer qualified purchasers of the product.” In order that manufacturers comply, we would suggest that this is stated more firmly as a “requirement” rather than an “expectation”. We suggest this formulation: “For Online 4 systems that qualify using modeled data, EPA expects that a power modeling tool characterizing the storage product will must be made available to manufacturer qualified purchasers of the product.” The last sentence should correspondingly be changed into: “Online 4 systems that are qualified using modeled data ~~are expected to~~ must make performance/watt data available to manufacturer qualified purchasers of the product.”

Line 457 / Table 4: COM requirements: COMs can assist in reducing the overall energy consumption of the system as well as other energy efficiency measures, and as such it is regrettable that the list of COMs has been reduced again (see table below), compared to the previous draft. The requirements have been substantially downsized due to provision of data on older storage products in the market that cannot offer multiple COM features, but can still produce competitive performance/watt results overall.

Whilst we recognise the issue, we suggest that as COMs are important for reducing the overall energy consumption of the storage systems, and more stringent COM requirements would furthermore stimulate the inclusion and use of COMs, the levels from draft 3 are reverted back to.

For simplicity – if eventually no COM requirement will be set for online 2 – we suggest to remove the line for online 2 products.

## COM requirements:

Storage product category	Draft 4	Draft 3
Online 2	0	0
Online 3	1	2
Online 4	1	3

Line 725 – Effective date: We recognise that the final specification will be released in early July. The potential delay until early October for the specification to become effective would not cause issues in Europe as there is likely to be a three to six months delay until the specification becomes active in the EU anyway.

Line 741 – Considerations for future revisions:

We suggest that the following considerations for future revisions are included:

1. Energy efficiency requirements: The addition of a number of other energy efficiency features e.g. step-wise reduction of disk speed, parking of disk heads, batching requests and intelliseek.
2. Qualifying Products: Widening qualifying products to more than just online data storage products – other types of data storage products besides the online category can play a significant role in efficient tiered storage concepts and provide good options for efficient storage management (e.g. MAIDS etc.). SNIA already addresses near-online and other equipment. We also suggested mentioning mixed drive systems and NAS.
3. Criteria for active state and idle state efficiency: To achieve this, it may be necessary to categorize data storage technologies and define more than one set of requirements. For example SSD technology may allow significantly higher efficiency. A concept from SNIA is currently proposed for the active state efficiency criteria (SNIA Emerald™ Power Efficiency Measurement).
4. Power supply rightsizing: We suggest that reference is made to right-sizing in the specification either through the partner agreement or as part of the information criteria. As a basis for right-sizing, manufacturers should be required to provide online power calculation tools that support buyers and consultants in choosing the right power supply. If a certain product model respectively product family covers a wide range of hardware configurations with largely differing power demand (to be declared in the product family approach), the supplier should offer several power supply models serving different load respectively configuration levels (low, mid and high configuration) and thus supporting right sizing of power supplies.

Products equipped with redundant power supplies should offer the opportunity to switch the redundant power supply into standby when not used. Such power saving standby circuitry is already offered by some manufacturers for servers.