

Data Storage

Summary of proposed Triple E eligibility criteria changes.

To facilitate a refinement of the eligibility criteria for Data Storage it is proposed to make the following amendments:

- Change the title 'Enterprise Storage Equipment' to 'Data Storage' and to update the definition of 'Data Storage'
- Condition 1 - Introducing a fourth option to demonstrate the capability of management software for all Data Storage types.
- Condition 3 - Revised to include a new Table 1 - Minimum AC-DC PSU efficiency and power factor requirements based on Ecodesign requirements

The proposed eligibility criteria document is contained on the following pages.

Please follow this [link](#) to view the currently published eligibility criteria.

Triple E Eligibility Criteria

Category: Information and Communications Technology (ICT)

Technology: Data Storage products

A data storage product is a fully-functional storage system that supplies data storage services to clients and devices attached directly or through a network. Components and subsystems that are an integral part of the data storage product architecture (e.g., to provide internal communications between controllers and disks) are considered to be part of the data storage product. In contrast, components that are normally associated with a storage environment at the data centre level (e.g. devices required for operation of an external storage area network) are not considered to be part of the data storage product. A data storage product may be composed of integrated storage controllers, data storage devices, embedded network elements, software, and other devices.

A Data Storage product includes:

A 'data storage device' providing non-volatile data storage, except for aggregating storage elements such as;

- subsystems of redundant arrays of independent disks,
- robotic tape libraries,
- filers, and
- file servers and storage devices which are not directly accessible by end-user application programs, and are instead employed as a form of internal cache.

Data storage devices include:

A Hard Disk Drive is a data storage device which reads and writes to one or more rotating magnetic disk platters.

A Solid State Drive is a data storage device that reads and writes to non-volatile solid-state memory instead of rotating magnetic platters for data storage.

Data Storage Eligibility Criteria:

To be included on the Triple E Register, the specific enterprise storage equipment must meet *all* of the relevant requirements set out below.

Note: *Supporting documentation that clearly demonstrates Triple E compliance according to the conditions below will be required as part of the Triple E checking process. Detailed information on the types of documents accepted can be found in the separate Supporting Documentation guidelines.*

General Eligibility Criteria

(Applicable to all Enterprise Storage Types)

No.	Condition
1.	Be supplied with management software capable of any three of the following: A. Data de-duplication, data compression or single instancing B. Thin/Virtual Provisioning C. Array Virtualisation D. Automated storage tiering
2.	Must form part of one of the following enterprise storage solutions: A. Storage Area Network (SAN) B. Direct Attached Storage (DAS) C. Network Attached Storage (NAS)
3	Meet PSU efficiency criteria in Table 1

Hard Disk Drive Eligibility Criteria

(To be met in addition to the general eligibility criteria)

No.	Condition
4.	When idle, be capable of intelligent power-down and drive spin-down or slow spin (MAID 2/IPM).
5.	Have a disk tiering strategy capable of supporting storage media with multiple power/capacity points with a factor of at least 2X between the slowest and fastest.

Table 1. Minimum AC-DC PSU efficiency and power factor requirements (if applicable)

% of rated load	Minimum PSU efficiency				Minimum power factor
	10 %	20 %	50 %	100 %	
Multi output	—	90 %	94 %	91 %	0,95
Single output	90 %	94 %	96 %	91 %	0,95

----- End of Triple E eligibility criteria -----

Please see next section for technical detail submission and supporting documentation guidance

The following information is not part of the official criteria document published within the relevant statutory Instrument; it has been added here for guidance purposes only in order to provide assistance with the submission of product details and the provision of the required supporting documentation.

Note: All information contained within this guidance document is subject to change without notice

Technical information required in product submission

The following are the specific technical values required as part of the product submission for this technology:

Enterprise storage product type

You must select which type of enterprise storage your product is.

Enterprise storage solution

You must select which type of enterprise storage solution your product belongs to. Only one solution can be chosen per product.

Supporting documentation required

Described below is the list of documents that are accepted as proof of compliance for the specific Enterprise Storage conditions.

Note: This information will only be requested AFTER you submit your product's basic details online

Important Notes to Product Providers

You must read this entire document prior to submitting products to the SEAI system, including the "Important Notes to Product Providers" section at the end of this document prior to submitting documentation.

All documentation supporting the product submission must clearly reference the correct product name and/or product code being submitted. The correct page number(s) must be detailed with each document supporting the submission

General Eligibility Criteria

(Applicable to all Enterprise Storage Types)

No.	Condition	Supporting Documentation Requirement
1.	<p>Be supplied with management software capable of three of the following:</p> <ul style="list-style-type: none"> A. Data de-duplication, data compression or single instancing B. Thin/Virtual Provisioning C. Array Virtualisation 	<p>Official and published manufacturer’s technical data sheet or brochure that demonstrates compliance with the requirements of the condition.</p>
2.	<p>Must form part of one of the following enterprise storage solutions:</p> <ul style="list-style-type: none"> A. Storage Area Network (SAN) B. Direct Attached Storage (DAS) C. Network Attached Storage (NAS) 	<p>Official and published manufacturer’s technical data sheet or brochure that demonstrates compliance with the requirements of the condition.</p>
3.	<p>Meet PSU efficiency criteria in Table 1</p>	<p>Test report completed according to EPRI Generalized Test Protocol for Calculating the Energy Efficiency of Internal Ac-Dc and Dc-Dc Power Supplies Revision 6.6 (April, 2012) or in conformity with Commission Regulation (EU) 2019/424</p>

Hard Disk Drive Eligibility Criteria

(To be met in addition to the general eligibility criteria)

No.	Condition	Supporting Documentation Requirement
4.	Be capable of intelligent power-down, and drive spin-down or slow spin (MAID 2/IPM).	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.
5	Have a disk tiering strategy capable of supporting storage media with multiple power/capacity points with a factor of atleast 2X between the slowest and fastest.	Official and published manufacturer's technical data sheet or brochure that demonstrates compliance with the requirements of the condition.

Important Notes to Product Providers

General

There should be a clear link between all supporting documentation supplied and the product being submitted. This will typically take the form of a product code or product name that can be cross referenced between the submitted product and relevant supporting documentation. If product codes / names have been changed since publication of the supporting documentation, then official evidence of this must be provided with the supporting documentation supplied.

Any deviation from these requirements will result in the supporting documentation not being considered adequate for the purposes of demonstrating compliance with the criteria conditions. This will in turn delay the submission and/or result in the product not being considered eligible.

Where the Triple E criteria or help documentation references compliance to appropriate rather than specific standards, the onus is on the product provider to ensure that supporting documentation supplied references recognised standards that apply to the submitted product, i.e. the product must be covered under the scope of a recognised standard.

If any product submitted is later found not to meet the performance or specification criteria, then this product will cease to be considered eligible for the Triple E.

Note: When supplying the supporting documentation through the online process you must ensure that the correct page number(s) of the document is referenced when demonstrating compliance with the relevant condition. An explanatory note should also be given where more than one page number is referenced.

Test Report

A test report must include an outline of the complete test, including:

- √ Introduction
- √ Details on test conditions
- √ The specific model details of the product tested
- √ The steps taken in the test
- √ The results
- √ Graphical representations
- √ Conclusion

All documents should be on headed paper and the document should be officially signed off.

All documentation must be in English or include adequate translation.

Certification

Where certificates are provided, all tests must be carried out by an organisation that is accredited by a national accreditation body recognised via the European Cooperation for Accreditation (preferred) or the International Accreditation Forum.

All documentation must be in English or include adequate translation.

Scientific Equivalence

Some Triple E criteria conditions allow for scientifically equivalent tests and/or standards to be used. In the event that a product has not been designed, manufactured or tested to the specific standard named, then documentation relating to an equivalent internationally recognised standard may be used (where the phrase 'Or scientific equivalent' is included in the Triple E condition or help documentation). In such applications, the onus will be on the product submitter to demonstrate satisfactory equivalence of the standards. However, submissions which reference such supporting documentation may take longer to process, and if the product provider does not provide satisfactory evidence of equivalence, then the product will not be considered eligible for the Triple E register.

All documentation must be in English or include adequate translation.

Note: Where specific standards are cited in a condition or in the Triple E help documentation, then documentation demonstrating that the relevant products have been designed, manufactured or tested to these specific standards is preferred. Scientific equivalence is considered the exception rather than the norm.