

Accelerated Capital Allowances Eligibility Criteria

Category: Information and Communications Technology (ICT)

***Technology:* Enterprise Communication Equipment**

Enterprise Communication Equipment is defined as equipment which enables a network of connected computers to communicate with each other. This equipment is made up of network devices which facilitate the intercommunication and resource sharing between the computers.

Enterprise Communication Equipment is considered to include the following:

Network Routers

A network router is a hardware device that interconnects wired or wireless networks. These may be subdivided into Core Routers, Carrier Edge/Ethernet Service Routers, and Multipurpose Routers.

Network Switches

A network switch is a hardware device that interconnects computers, forming a local area network (LAN).

Network Firewalls

A network firewall is a hardware device that protects a computer network from external unauthorised access.

Optical Transmission Equipment

Optical transmission equipment is communication hardware used for transmitting data over medium to long distances through a fibre-optic network.

Eligibility criteria

To be included on the ACA Specified List, the specific Enterprise Communication Equipment must meet *all* the relevant requirements set out below.

Note: *Supporting documentation that clearly demonstrates ACA compliance according to the conditions below will be required as part of the ACA 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 Communication Equipment)

No.	Condition
1	Internal power supplies must achieve an 80 PLUS gold standard ¹ or scientific equivalent
2	External power supplies must be Energy Star-compliant ² or scientific equivalent

Network Router – specific eligibility criteria

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

No.	Condition
3	Must achieve an ECR–VL ³ energy consumption rating with variable load of less than or equal to 10 W/ Gbps
4	Must have variable-load energy-management capabilities

Network Switch – specific eligibility criteria

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

No.	Condition
5	Must achieve an ECR–VL energy consumption rating with variable load of less than or equal to the values as set out in Table 1.
6	Must have variable-load energy-management capabilities

Network Firewall – specific eligibility criteria

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

No.	Condition
7	Must achieve an ECR energy consumption rating of less than or equal to 3W/ Gbps

¹ The 80 PLUS performance specification requires multi-output power supplies in computers and servers to be 80% or greater energy-efficient at 20%, 50% and 100% of rated load with a true power factor of 0.9 or greater.

² The Energy Star compliance certification for external power supply is issued by the United States Environmental Protection Agency (EPA) in recognition of a product's compliance with defined efficiency levels as set out in the relevant EPA specification for external power supplies.

³ As per ECR Specification V2.1.1

8	Must have variable-load energy-management capabilities
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Optical Transmission Equipment – specific eligibility criteria

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

No.	Condition
9	Must achieve an ECR energy consumption rating with variable load of less than or equal to 3W/Gbps
10	Must have variable-load energy-management capabilities

Table 1: Network Switches – Maximum energy consumption values

Switch Type	Energy Consumption rating (W/Gbps)
Stackable fixed port switches	≤3
6 port modular chassis switches	≤7.5
6 – 12 port modular chassis switches	≤11

Notes:

W = Watts

Gbps = Giga bits per second

ECR = energy consumption rating (peak efficiency metric, W/Gbps)
 = E_f/T_f (expressed in Watts per Gbps)

Where:

E_f = energy consumption (Watts) measured during the running test

T_f = maximum throughput (Gbps) achieved in the measurement

ECR-VL = energy efficiency metric over a variable-load cycle (W/Gbps)

$$= \frac{(\alpha * E_{100} + \beta * E_{50} + \gamma * E_{30} + \delta * E_{10} + \epsilon * E_i)}{(\alpha * T_f + \beta * T_{50} + \gamma * T_{30} + \delta * T_{10})}$$

Where:

$\alpha, \beta, \gamma, \delta, \epsilon$ are weight coefficients selected such as $(\alpha + \beta + \gamma + \delta + \epsilon) = 1$

For test purposes the following values are used:

$\alpha = 0.1$

$\beta = 0.5$

$$\gamma = 0.25$$

$$\delta = 0.05$$

$$\varepsilon = 0.1$$

Tf = maximum throughput (Gbps) achieved in the measurement cycle

- $T_{50} = Tf * 0.5$

- $T_{30} = Tf * 0.3$

- $T_{10} = Tf * 0.1$

E₁₀₀ = energy consumption under highest load accepted by System Under Test (SUT) (watts)

E₅₀ = energy consumption under half load (watts)

E₃₀ = energy consumption under 30% load (watts)

E₁₀ = energy consumption under 10% load (watts)

E_i = energy consumption under 0% load (watts)

----- End of ACA eligibility criteria -----

Please see next section for guidance on:

- 1. Technical details required in product submission**
- 2. Supporting documentation required**

Guidance on product details and supporting documentation

NOTE: *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 help you to provide (a) product details and (b) the required supporting documentation.*

All information contained in 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 Communications Equipment product type

As part of the product submission you must select which type of equipment your product is. Only one type can be chosen per submitted product. The equipment type must be one of the following

- Router
- Switch
- Firewall
- Optical Transmission Equipment

Energy Consumption Rating (W/Gbps)

The Energy Consumption Rating of the product in Gbps (Giga bits per second) is required as a value for the product submission. It must be entered as a number only without unit symbols. There should also be no spaces or full stops after the number submitted. The figure must comply with the criteria requirements for the type of equipment.

Supporting documentation required

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

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

Important Notes to Product Providers

Please ensure that you read the "Important Notes for Product Providers" section at the end of this document prior to submitting documentation.

General eligibility criteria

(applicable to all Enterprise Communication Equipment)

No.	Condition	Supporting Documentation Requirement
1.	Internal power supplies must achieve an 80 PLUS gold standard ⁴ or scientific equivalent	<p>Accredited certification that the product achieves an 80 Plus Gold Standard</p> <p><u>OR</u></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard, and demonstrating that the product achieves an 80 Plus Gold Standard. Test reports should be of the format described in the 'Important notes for Product Providers' section of this document.</p> <p>Accepted Standard:</p> <p>80 Plus Gold Standard</p> <p>See note on 'Scientific Equivalence' in the Important notes for Product Providers section of this document.</p>

⁴ The 80 PLUS performance specification requires multi-output power supplies in computers and servers to be 80% or greater energy-efficient at 20%, 50% and 100% of rated load with a true power factor of 0.9 or greater.

No.	Condition	Supporting Documentation Requirement
2.	External power supplies must be Energy Star-compliant ⁵ or scientific equivalent	<p>Accredited certification that the product is Energy Star Compliant</p> <p><u>OR</u></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard, and demonstrating that the product is Energy Star compliant. Test reports should be of the format described in the 'Important notes for Product Providers' section of this document.</p> <p>Accepted Standard:</p> <p>Energy Star</p> <p>See note on 'Scientific Equivalence' in the Important notes for Product Providers section of this document.</p>

⁵ The Energy Star compliance certification for external power supply is issued by the United States Environmental Protection Agency (EPA) in recognition of a product's compliance with defined efficiency levels as set out in the relevant EPA specification for external power supplies.

Router – specific eligibility criteria

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

No.	Condition	Supporting Documentation Requirement
3.	Must achieve an ECR-VL ⁶ energy consumption rating with variable load of less than or equal to 2 W/Gpbs	<p>Accredited certification that the product achieves an ECR-VL energy consumption rating with variable load of less than or equal to 2W/Gbps</p> <p>OR</p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard, and demonstrating that the product achieves an ECR-VL energy consumption rating with variable load of less than or equal to 2W/Gbps. Test reports should be of the format described in the 'Important notes for Product Providers' section of this document.</p> <p>Accepted Standard: ECR Specification: Energy and Performance Assessment</p>
4.	Must have variable-load energy-management capabilities	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.

⁶ As per ECR Specification V2.1.1

Switch – specific eligibility criteria

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

No.	Condition	Supporting Documentation Requirement
5.	Must achieve an ECR-VL energy consumption rating with variable load of less than or equal to 1.5W/ Gpbs	<p>Accredited certification that the product achieves an ECR-VL energy consumption rating with variable load of less than or equal to 1.5W/Gbps</p> <p><u>OR</u></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard, and demonstrating that the product achieves an ECR-VL energy consumption rating with variable load of less than or equal to 1.5W/Gbps. Test reports should be of the format described in the 'Important notes for Product Providers' section of this document.</p> <p>Accepted Standard: ECR Specification: Energy and Performance Assessment</p>
6.	Must have variable-load energy-management capabilities	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.

Firewall – specific eligibility criteria

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

No.	Condition	Supporting Documentation Requirement
7.	Must achieve an ECR energy consumption rating of less than or equal to 1W/ Gpbs	<p>Accredited certification that the product achieves an ECR energy consumption rating of less than or equal to 1W/Gbps</p> <p><u>OR</u></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard, and demonstrating that the product achieves an ECR energy consumption rating of less than or equal to 1W/Gbps. Test reports should be of the format described in the 'Important notes for Product Providers' section of this document.</p> <p>Accepted Standard: ECR Specification: Energy and Performance Assessment</p>
8.	Must have variable-load energy-management capabilities	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.

Optical Transmission Equipment – specific eligibility criteria

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

No.	Condition	Supporting Documentation Requirement
9.	Must achieve an ECR energy consumption rating with variable load of less than or equal to 3W/Gbps	<p>Accredited certification that the product achieves an ECR energy consumption rating with variable load of less than or equal to 3W/Gbps</p> <p><u>OR</u></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard, and demonstrating that the product achieves an ECR energy consumption rating with variable load of less than or equal to 3W/Gbps. Test reports should be of the format described in the 'Important notes for Product Providers' section of this document.</p> <p>Accepted Standard: ECR Specification: Energy and Performance Assessment</p>
10.	Must have variable-load energy-management capabilities	Official and published manufacturer's technical data sheet or brochure that demonstrates the requirements of the condition.

Important notes for product providers

General

There should be a clear link between the product submitted and all supporting documentation. This will typically take the form of a *product code* or *product name* that can be cross-referenced between the submitted product and the relevant supporting documentation.

If product codes/names have been changed since publication of the supporting documentation, then you must provide official evidence of this with the supporting documentation supplied.

If there is any deviation from these requirements, the supporting documentation will not be 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 ACA criteria or help documentation makes reference to compliance with appropriate rather than specific standards, the onus is on the product provider to ensure that the 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 it is subsequently found that any product submitted does not meet the performance or specification criteria, it will cease to be considered eligible for the ACA.

Note: When supplying the supporting documentation through the online process, you must ensure, when demonstrating compliance with the relevant condition, that the correct page number(s) of the document is referenced. When referencing more than one page number, add an explanatory note.

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 ACA criteria conditions allow for scientifically equivalent tests and/or standards to be used.

If 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 ACA condition or help documentation.

In such applications, the onus is on the product submitter to demonstrate satisfactory equivalence of the standards. Submissions which reference such supporting documentation may take longer to process. If the product provider does not provide satisfactory evidence of equivalence, then the product will not be considered eligible for the ACA. **All documentation must be in English**, or include adequate translation.

Note: Where specific standards are cited in a condition or in the ACA 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.

Representative testing

Where test information is required for a range of technically similar products (e.g. configurations of one base product), then – in exceptional instances – a form of representative testing may be used once *agreed in advance* with SEAI.

Such testing is where only representative products are tested from a technically similar group or range of products. Representative testing may form an acceptable basis for supporting documentation if:

- A clear correlation can be demonstrated between the tested product and a technically similar non-tested product
- and*
- Such a correlation clearly demonstrates the compliance of the non-tested product

Note: Where representative testing is used for a group or range of products, if the tested or representative product is removed from the list of eligible products then all related products are also removed.