

## Accelerated Capital Allowances Eligibility Criteria

### **Category: Information and Communications Technology (ICT)**

### **Technology: Heat Rejection**

*ICT Heat Rejection is defined as equipment that is designed to achieve very high operational cooling efficiencies, and which is used to transfer heat from ICT Precision Cooling equipment to the external atmosphere.*

**ICT Heat Rejection equipment is considered to include the following:**

#### Air Cooled Liquid Chilling Packages

Air Cooled Liquid Chilling Packages generate a chilled water supply loop for water based precision cooling equipment and can include an integral free cooling system.

#### Water Cooled Liquid Chilling Packages

Water Cooled Liquid Chilling Packages generate a chilled water supply loop for water based precision cooling equipment.

#### Mechanical Draught Cooling Towers

Forced and induced Mechanical Draught Cooling Towers are wet systems which transfer heat from Water Cooled Liquid Chilling Packages by means of fan induced air circulation and can be used (in suitable ambient conditions) in parallel with Air Cooled Liquid Chilling Packages as a free cooling system.

#### Dry Air Coolers

Dry Air Coolers transfer heat from Water Cooled Liquid Chilling Packages by means of fan induced air circulation and can be used (in suitable ambient conditions) in parallel with Air Cooled Liquid Chilling Packages as a free cooling system

### **Eligibility Criteria Overview**

In order to be included on the ACA Specified List, the specific ICT Heat Rejection equipment must meet *all* of 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 ICT Heat Rejection equipment)

No.	Condition
1.	All equipment and/or components must be CE marked as required by the specific EU directive(s).

2.	<p>Each system must include the following optimisation functions:</p> <ul style="list-style-type: none"> <li>• Optimise operating parameters to match changes in load requirements</li> <li>• Where applicable, be capable of communicating with other control and cooling equipment for the purposes of free cooling</li> </ul>
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### Liquid Chilling Packages specific Eligibility Criteria

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

No.	Condition
3.	<p>Meet the cooling performance criteria for the applicable Thermal Load Capacity, measured by the Energy Efficiency Ratio (EER) of the <u>unit</u> at 100% (full) load capacity, as indicated in Table 1.</p> <p><b>and</b></p> <p>the European Seasonal Energy Efficiency Ratio (ESEER), as indicated in Table 1.</p>
4.	<p>Air cooled EER values must be obtained according to the test procedure EN14511 and standard rating conditions EN14511-2 Table 10 "Standard rating conditions, Water", or scientific equivalent, as follows:</p> <ul style="list-style-type: none"> <li>• Outdoor Unit – Water entering 12°C, leaving 7°C</li> <li>• Outdoor Unit - Air entering 35°C Dry Bulb</li> </ul>
5.	<p>Water cooled EER values must be obtained according to the test procedure EN14511 and standard rating conditions EN14511-2 Table 8, or scientific equivalent, as follows:</p> <ul style="list-style-type: none"> <li>• Outdoor Unit – Chilled Water Side – Water entering 12°C, leaving 7°C</li> <li>• Outdoor Unit – Heat Rejection Side - Water entering 30°C, leaving 35°C</li> </ul>
6.	<p>Air and water cooled ESEER values must be according to the test procedure EN14511, or scientific equivalent, and the rating conditions as indicated in Table 2, to follow.</p>

**Table 1.: Minimum cooling performance values**

Type	Thermal Load Capacity (kW)	EER	ESEER
Air Cooled Liquid Chilling Package	100 to 1500	≥2.7	≥4.25
Water Cooled Liquid Chilling Package	100 to 3500	≥4.65	≥6.55

**Notes:**

Energy Efficiency Ratio (EER) is calculated as follows:

$$\text{EER} = \frac{\text{Net rejection capacity (kW)}}{\text{Effective power input (kW) in cooling mode}}$$

European Seasonal Energy Efficiency Ratio (ESEER) is calculated as follows:

$$\text{ESEER} = A * \text{EER}_{100\%} + B * \text{EER}_{75\%} + C * \text{EER}_{50\%} + D * \text{EER}_{25\%}$$

With the following weighting coefficients:

$$A = 0.03 ; B = 0.33 ; C = 0.41 ; D = 0.23$$

**Table 2.: ESEER test conditions**

Part Load Ratio	Air temperature (°C)	Water temperature (°C)	Weighting coefficients
100	35	30	3 %
75	30	26	33 %
50	25	22	41 %
25	20	18	23 %

----- End of ACA 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:

### Heat rejection product type

As part of the product submission you must first select which type of Heat Rejection your product is. Only one type can be chosen per product.

### Thermal capacity

The thermal capacity in kW of the heat rejection product is required as a value for the product submission. It must be entered as whole number only (do not include kW symbol). There should also be no spaces or full stops after the number submitted.

### EER

The EER for the product is required as a value for the product submission. It must be entered as number only without units. There should also be no spaces or full stops after the number submitted. The figure must comply with the criteria requirements for minimum EER values.

## Supporting documentation required

Described below is the list of documents that are accepted as proof of compliance for the specific ICT Heat Rejection Equipment condition.

**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 to Product Providers" section at the end of this document prior to submitting documentation.

## General Conditions

(Applicable to all Heat Rejection equipment)

No.	Condition	Supporting Documentation Requirement
1.	All equipment and/or components must be CE marked as required by the specific EU directive(s).	<p>Official and published manufacturer’s technical data sheet or brochure that demonstrates CE marking compliance.</p> <p><b>OR</b></p> <p>A copy of an official signed declaration on headed paper which confirms CE marking compliance.</p> <p>Official declarations should explicitly state the product for which CE marking is being confirmed (i.e. do not provide a letter simply stating general compliance with the relevant ACA Condition).</p> <p>Where a document is used to demonstrate conformance for a number of products or range of products it should clearly specify each individual product covered by that document.</p>
2.	<p>Each system must include the following optimisation functions:</p> <ul style="list-style-type: none"> <li>• Optimise operating parameters to match changes in load requirements</li> <li>• Where applicable, be capable of communicating with other control and cooling equipment for the purposes of free cooling</li> </ul>	Official and published manufacturer’s technical data sheet, or brochure, that demonstrates compliance with the requirements of the condition.

### Liquid Chilling Packages specific Eligibility Criteria

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

No.	Condition	Supporting Documentation Requirement
3	Meet the cooling performance criteria for the applicable Thermal Load Capacity, measured by the Energy Efficiency Ratio (EER) of the unit at 100% (full) load capacity, as indicated in Table 1, and the European Seasonal Energy Efficiency Ratio (ESEER), as indicated in Table 1.	Official and published manufacturer's technical data sheet, or brochure, that demonstrates compliance with the requirements of the condition.
4.	<p>Air cooled EER values must be obtained according to the test procedure EN14511 and standard rating conditions EN14511-2 Table 10 "Standard rating conditions, Water", or scientific equivalent, as follows:</p> <ul style="list-style-type: none"> <li>• Outdoor Unit – Water entering 12°C, leaving 7°C</li> <li>• Outdoor Unit - Air entering 35°C Dry Bulb</li> </ul>	<p>Accredited certification that the equipment EER values have been obtained by testing according to the named standard.</p> <p><b>OR</b></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard. Test reports should be of the format described in the 'Important notes to Product Providers' section of this document.</p> <p>Accepted Standard: EN14511</p> <p>See note on 'Scientific Equivalence' in the Important notes to Product Providers section of this document.</p>
5.	<p>Water cooled EER values must be obtained according to the test procedure EN14511 and standard rating conditions EN14511-2 Table 8, or scientific equivalent, as follows:</p> <ul style="list-style-type: none"> <li>• Outdoor Unit – Chilled Water Side – Water entering 12°C, leaving 7°C</li> <li>• Outdoor Unit – Heat Rejection Side - Water entering 30°C, leaving 35°C</li> </ul>	<p>Accredited certification that the equipment EER values have been obtained by testing according to the named standard.</p> <p><b>OR</b></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard. Test reports should be of the format described in the 'Important notes to Product Providers' section of this document.</p> <p>Accepted Standard: EN14511</p> <p>See note on 'Scientific Equivalence' in the Important notes to Product Providers section of this document.</p>

No.	Condition	Supporting Documentation Requirement
6.	Air and water cooled ESEER values must be according to the test procedure EN14511, or scientific equivalent, and the rating conditions as indicated in Table 2, to follow.	<p>Accredited certification that the equipment ESEER values have been obtained by testing according to the named standard</p> <p><b><u>OR</u></b></p> <p>Evidence of official testing by manufacturer or independent test lab carried out according to the principles outlined in the named standard. Test reports should be of the format described in the 'Important notes to Product Providers' section of this document.</p> <p>Accepted Standard: EN14511</p> <p>See note on 'Scientific Equivalence' in the Important notes to Product Providers section of this document.</p>

## 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 ACA criteria or help documentation reference 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 ACA.

**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 compliance with the relevant condition is being demonstrated. An explanatory note should also be given where more than one page number is referenced.

### Test Report

A test report must comprise of the following elements:

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, and a 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. 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 ACA 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 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 utilised once agreed in advance with SEI. Such testing is where only representative products are tested from a technically similar group or range of products. Provided a clear correlation can be demonstrated between the tested product and technically similar non-tested product, and that such a correlation clearly demonstrates the compliance of the non-tested product, representative testing may form an acceptable basis for supporting documentation.

**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.