Enhancements to MEPS and MELS with effect from 1 November 2019

1) Minimum Energy Performance Standards (MEPS) for incandescent bulbs will be raised to 2-ticks

<table>
<thead>
<tr>
<th>Product</th>
<th>Wattage (W)</th>
<th>Current MEPS</th>
<th>Revised MEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incandescent Bulb*</td>
<td>25 - 200</td>
<td>$P_{\text{max}} = 0.8 \times (0.88\sqrt{\phi} + 0.049\phi)$</td>
<td>$P_{\text{max}} = 0.24\sqrt{\phi} + 0.0103\phi$</td>
</tr>
</tbody>
</table>

*With Edison screw and bayonet lamp caps, which are designed to be connected directly to the 230V A.C. mains by means of a socket or connector

$P_{\text{max}}$ is maximum allowable power consumption  
$\phi$ is light output in lumen

2) MEPS will be introduced for fluorescent lamp ballasts

<table>
<thead>
<tr>
<th>Product</th>
<th>MEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorescent Lamp Ballast</td>
<td>Energy Efficiency Index (EEI) B1</td>
</tr>
</tbody>
</table>

This will only apply to ballasts used in conjunction with general purpose lamps. The following fluorescent lamp ballasts will not be covered under MEPS.

a) Ballasts integrated in lamps (e.g. for HID lamp),

b) Ballasts used primarily in D.C. circuits,

c) Ballasts *not* used primarily for general lighting purposes (e.g. ballasts for exit signs, laboratory, ultraviolet, industrial process applications), and

d) Ballasts for luminaires that are mounted permanently in furniture which cannot be tested independently from luminaires

Suppliers of regulated ballasts are required to register their companies and their products with NEA and produce test reports to demonstrate compliance. More information on the registration and testing requirements are provided in Annex A.

3) Mandatory Energy Labelling Scheme (MELS) will be introduced for the following:

a) **Compact Fluorescent Lamps without integrated ballasts (CFLni)** with G24d lamp cap;

b) **Linear Fluorescent Lamps (LFL)** with diameter of 26mm (T8) and length 0.5m – 1.5m, and

c) the **LED direct replacements**\(^1\) of (a) and (b).

\(^1\) For LED direct replacements of T8 LFL, it refers to double-capped LED lamps that comply with the IEC 62776 safety specifications. These are designed for direct replacement and do not require any internal modification of the original LFL-T8 luminaire.
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Regulated CFLni and LFL-T8, and their direct LED replacements must meet the following lamp survival and lumen maintenance requirements before they can be registered for supply in Singapore.

<table>
<thead>
<tr>
<th>Lamp Types</th>
<th>CFLni [Lamp cap: G24d]</th>
<th>LFL [Dia. 1-inch (T8 lamp)] 0.5 – 1.5m</th>
<th>LED direct replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamp survival</td>
<td>90% at 2,000h</td>
<td>95% at 1,000h (Measured) 90% at 6,000h (Declared)</td>
<td></td>
</tr>
<tr>
<td>Lumen maintenance</td>
<td>80% at 2,000h</td>
<td>85% at 1,000h (Measured) 80% at 6,000h (Declared)</td>
<td></td>
</tr>
</tbody>
</table>

The energy label and proposed rating system are shown below.

**Tick Rating System**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Rated Lamp Efficacy, $\eta = \frac{\phi}{P}$ (lm/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-tick</td>
<td>$\eta \geq 135$</td>
</tr>
<tr>
<td>2-tick</td>
<td>$110 \leq \eta &lt; 135$</td>
</tr>
<tr>
<td>1-tick</td>
<td>$\eta &lt; 110$</td>
</tr>
</tbody>
</table>

where $P$ is the rated lamp power

$\phi$ is the rated luminous flux in lumen

The regulated products must be affixed with an energy label on the lamp packaging before they can be supplied in Singapore. For LFL, alternative means of displaying the energy labels are acceptable (e.g. in the form of list/chart showing multiple lamp models and their corresponding energy labels, on shelf price tag) as long as the energy label is displayed at prominent locations near the applicable lamps at the retail stores.

Suppliers of regulated CFLni and LFL-T8, and their direct LED replacements are required to register their companies and the regulated products with NEA. More information on the registration and testing requirements are provided in Annex A.
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IMPORTANT NOTE: Lighting suppliers which are affected by the enhancements of MEPS and MELS for the regulated products mentioned in S/N 1 to S/N 3 will be given a 1-year grace period from November 2019 to October 2020 to:

a) Clear existing stocks of incandescent bulbs imported before 1 November 2019 that do not meet the revised MEPS of 2-tick;
b) Clear existing stocks of fluorescent lamp ballasts imported before 1 November 2019 that do not meet MEPS of EEI Class B1; and
c) Register and label existing stocks of CFLni with G24d lamp cap and LFL-T8, and their direct LED replacements under MELS.

4) Energy labels shall be displayed in all print and digital materials, such as brochures, advertisements and online purchasing platforms, used by the retailers and suppliers to promote regulated appliances. This is in addition to the current MELS requirement that requires suppliers to affix energy labels on regulated appliances.

If the energy label cannot be seen clearly in the print and digital materials, the tick rating shall be shown in text as prominently as the main text. Examples of how the energy label or tick rating can be displayed is shown below:

Example of how an energy label can be displayed next to a promoted product
Example of how the tick rating can be displayed next to a promoted product
Enhancements to MEPS and MELS with effect from 1 November 2019

Annex A

Registration
Importers and manufacturers of regulated products that are covered under these requirements must register themselves and their products with NEA.

Please refer to the following links for more information on the registration process:

a) Registration of suppliers
b) Registration of products

Note: The registration portal for lamp ballasts, CFLni, LFL and the direct LED replacements will open from mid-2019.

Registration Fees
Supplier registration: No Charge
New product registration: $38 per family of model
Renewal: $20 per family of model

Each registration is valid for 3 years.

Test Standards

<table>
<thead>
<tr>
<th>Products</th>
<th>CFLni [Lamp cap: G24d]</th>
<th>LFL [Dia. 1-inch (T8 lamp)] 0.5 – 1.5m</th>
<th>LED direct replacement</th>
<th>Ballast</th>
</tr>
</thead>
</table>

*Only relevant clauses of IEC 62612 apply.

Test reports from the following laboratories are acceptable:

a) Manufacturers' in-house test laboratories;

b) Test laboratories that have been accredited by the Singapore Accreditation Council (SAC) to carry out the test in accordance with the applicable test standards; or

c) Overseas test laboratories that have been accredited by their local accreditation bodies and have signed a Mutual Recognition Arrangement with SAC to carry out the test in accordance with the applicable test standards.