CECE CONGRESS 2016
5 to 7 October 2016 Prague, Czech Republic

INDUSTRY IN TRANSFORMATION
DRIVERS OF SUCCESS

www.cece-congress.eu
#2016CECECongress
Engine Project Team

PT Chair - Jason Ong
EU Stage V
Regulation (EU) 2016/1628 – Stage V

Directive 97/68/EC

Regulation (EU) 2016/1628
- Scope extension
- New emissions limits
- Enhancing provisions

European Commission Goals
- Strive alignment with (higher) US EPA standards, where appropriate
- Address health-damaging evidence of ultrafine particulate matter
- Catch up with on-road technology trends
- Harmonise requirements across EU
- Simplification & closing loopholes in legislation
Key aspects

• Regulation – Simultaneous application across EU member states.
• Simplification of administrative procedures
• New transition scheme, with staggered introduction dates
• Monitoring of emissions from in-service engines
• Type-approval also for gas-fuelled engines (partial/mono)
• Eliminating existing "grey-zones" (field testing, sep. shipment, ATEX,...)
• Early type-approval for Stage V
INDUSTRY IN TRANSFORMATION
DRIVERS OF SUCCESS

2014
- Adoption by Legislators (Friday 16th Sept)
- Entry into force of NRMM Regulation (Thursday 6th October)

2015
- Adoption by Commission

2016
- Application of NRMM Regulation
- Repeal of Directive 97/68/EC
## Emission Limits – Land based NRMM

<table>
<thead>
<tr>
<th>CI engines &lt; 56kW &amp; Engines &gt;56kW</th>
<th>Directive 97/68</th>
<th>New NRMM proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions in g/kWh</td>
<td>Stage</td>
<td>CO</td>
</tr>
<tr>
<td>CI engines 0 - 8 kW</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CI engines 8 - 19 kW</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CI engines 19 - 37 kW</td>
<td>IIIA</td>
<td>5,5</td>
</tr>
<tr>
<td>CI engines 37 - 56 kW</td>
<td>IIIIB</td>
<td>5,0</td>
</tr>
<tr>
<td>CI engines 56 - 75 kW</td>
<td>IIIA</td>
<td>5,0</td>
</tr>
<tr>
<td>Engines 75 – 130 kW</td>
<td>IV</td>
<td>5,0</td>
</tr>
<tr>
<td>Engines 130 – 560 kW</td>
<td>IV</td>
<td>3,5</td>
</tr>
<tr>
<td>Engines P &gt; 560 kW</td>
<td>IIIA</td>
<td>3,5</td>
</tr>
</tbody>
</table>

### Limit values in line with US legislation
- CI engines 56-130kW
- Engines >560kW

### Limit values more stringent than US legislation
- CI engines 0-8kW
- CI engines 8-19kW
### Mandatory dates of application of Stage V – Placing on the market of engines

**Date of application**
- 1.1.2017
- 1.1.2018
- 1.1.2019
- 1.1.2020
- 1.1.2021

**Mandatory dates of application of Stage V – EU Type-Approval of engines

**Introduction timing

- **Entry into force (DA & IA adopted)**
- **Floating date!**

**New NRMM Regulation**

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
<th>YEAR 4</th>
<th>YEAR 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SI engines 19-56 kW</td>
<td>• Engines 56-130 kW</td>
<td>• Engines for rail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CI engines &lt;19 kW</td>
<td>• Engines inland waterway vessels &gt;300kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engines &gt;560 kW</td>
<td>• SI engines &lt;19 kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SI engines for ATV &amp; SBS</td>
<td>• CI engines 19-56 kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SI engines for snowmobiles</td>
<td>• Engines 130-560 kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SI engines &lt;19 kW</td>
<td>• Engines inland waterway vessels 19-300kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CI engines 19-56 kW</td>
<td>• Engines 130-560 kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engines &gt;560 kW</td>
<td>• Engines for rail</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SI engines for snowmobiles</td>
<td>• Engines &gt;560 kW</td>
<td></td>
</tr>
</tbody>
</table>

* Floating date!
Some areas where CECE was active in advocacy

<table>
<thead>
<tr>
<th>Topic</th>
<th>CECE position</th>
<th>Final text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction dates</td>
<td>Support for the Commission proposal and resist calls for earlier introduction.</td>
<td>No changes made</td>
</tr>
<tr>
<td>Staggered approach</td>
<td>Support for the Commission proposal, resist calls for single introduction point.</td>
<td>No changes made</td>
</tr>
<tr>
<td>Duration of the transition period</td>
<td>Propose an extension of 6 months comparing to the Commission proposal (total 2 years)</td>
<td>Extension of 6 months agreed</td>
</tr>
<tr>
<td>Removal of replacement engines provision</td>
<td>Maintain unlimited replacement engine provision or no less than 25 years</td>
<td>20 years</td>
</tr>
<tr>
<td>SMEs definition</td>
<td>No more than 100 units/year</td>
<td>100 units/y</td>
</tr>
<tr>
<td>Retrofitting</td>
<td>Retrofitting should not become part of the scope of the new Regulation. We should not weaken the environmental objectives of Stage V.</td>
<td>Review clause for retrofitting included</td>
</tr>
<tr>
<td>Introduction of voluntary schemes for further emission reduction</td>
<td>Resist introduction of voluntary schemes with lower emission limits.</td>
<td>Removed</td>
</tr>
</tbody>
</table>
Current CECE activity

• Continuously reviewing the progress and content of the Delegated and Implementing Acts.

• Contributing to a joint working group, together with other associations (FEM, CEMA, CECE, EUROMOT, EU-nited, EGMF), the aim of which is to create OEM guidance and FAQs for the implementation of Stage V.
Low Emissions Zones and Retrofitting.
Background

• Directive 2008/50/EC on Ambient Air Quality requires EU Member States to ensure that the concentration in ambient air of certain pollutants, including mass concentration of very small particulate matter (PM10 and PM2.5), does not exceed certain limit values.

• Where there is a risk that the levels of pollutants will exceed one or more of the alert thresholds specified in the Directive, Member States must draw up action plans to reduce the risk or limit the duration of such an occurrence.

• More and more action plans establish Low Emission Zones (LEZ) in cities and inner city areas, resulting in stricter emission limits particularly for cars and heavy duty vehicles. However, non-road mobile machinery (NRMM) used in construction sites is also increasingly being included.
Current CECE activity

• Gathering information on behalf of our members of such low emissions zones (LEZ) and collating these into a form that can be used as a reference.

• Creating a position paper containing CECE proposals for low emissions zones and retrofitting policy for local regulators.

• Preparing to actively engage with the Commission on any study resulting from the review clause (Art.60)* on retrofitting that is included in the new Regulation (EU) 2016/1628.

*This clause directs Commission to prepare a report to Parliament and Council by 31st December 2018 regarding the possible implementation of measures for installation of retrofit devices on used machines. The report should address technical measures as well a financial incentive schemes.
CECE CONGRESS 2016
5 to 7 October 2016 Prague, Czech Republic

INDUSTRY IN TRANSFORMATION
DRIVERS OF SUCCESS

www.cece-congress.eu
#2016CECECongress