Off-Road Compression-Ignition Engines
Small Spark-Ignition Engines
Large Spark-Ignition Engines

Q/A and Update

2007 EMA Certification Workshop
April 24, 2007
OFCI – Flexibility Program

Engine Mfr’s Reporting Requirements

• Letter requesting E.O. for flex engines
• Statement that assures flex engines are materially identical to previously certified engine family
• Flex engine certified to FEL greater than the STANDARD must be offset with ABT credits
• Estimated national production of flex engines produced
• Mid-Year and End-of-Year updates of flex engines produced
### OFCI – Flexibility Program

#### Engine Mfr’s Labeling Requirements

Provide draft label & **one time** actual production label

<table>
<thead>
<tr>
<th>Trade Mark</th>
<th><strong>IMPORTANT EMISSIONS INFORMATION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Corporate Name</td>
</tr>
<tr>
<td></td>
<td>THIS ENGINE COMPLIES WITH CALIFORNIA EMISSION REQUIREMENTS UNDER TITLE 13, CCR 2423(d). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS CITED MAY BE A VIOLATION OF STATE LAW SUBJECT TO CIVIL PENALTY. [Insert Family Name]</td>
</tr>
</tbody>
</table>

Specifications: any adjustments

Emission Control Systems: DOM: month and year

Engine Displacement: \( cm^3 \), liters  Operating Fuel:
OFCl – Flexibility Program

Equipment Mfr’s Requirements - Tier 2/3

• For each power category produced:
  - Verify compliance with the requirements
  - Based on actual national production
  - Final Report—Available December 31 of the year following the last year of allowances

• Keep records for 2 years after final year of allowance usage
Equipment Mfr’s Reporting Requirements - Tier 4

• Prior to January 1, notify ARB of intent to participate

• Annually report for each category:
  (By **March 31**, of following year)
  ✦ Flex engines sold as a percent of total U.S. directed production
  ✦ Cumulative yearly totals
  ✦ Keep records for **5 years** after final year of allowance usage

• Meet labeling requirements in accordance to CCR Title 13, 2423, 2424
Equipment Mfr’s Labeling Requirements

Provide draft label & **one time** actual production label

<table>
<thead>
<tr>
<th>Trade Mark</th>
<th>EMISSIONS CONTROL INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Corporate Name</td>
</tr>
<tr>
<td></td>
<td>THIS EQUIPMENT [or identify the type of equipment]</td>
</tr>
<tr>
<td></td>
<td>HAS AN ENGINE THAT MEETS CALIFORNIA STANDARDS UNDER 13, CCR 2423(d)</td>
</tr>
</tbody>
</table>

Contact Name:  
Email Address:  
DOM: month and year  
Telephone Number:
Auxiliary Emissions Control Devices

Provide justification for AECD:

• **During** engine start-up
• **For** engine protection
• **AECD occurs** during certification test cycle
Auxiliary Emission Control Devices

- Use EPA’s template for AECD submission

AECD document must include:
- General function
- Sensor locations
- Operational hierarchy
- Parameters sensed and threshold values
- Occurrence in test procedure

ARB & EPA will collaborate during review process
OFCI – Rebuilding Practices

• Rebuilt Original Engines
• Rebuilt Replacement Engines
• Rebuilt New Engines
Replacement Engines (OFCI, SSIE)

- A newly produced engine
- Does not meet the current standards
- To be used to repower existing equipment
Replacement Engines (OFCI, SSIE)

Manufacturer Responsibilities

- Meet replacement engine criteria
- Meet labeling requirements
- May NOT use this provision to circumvent current regulations
Replacement Engines (OFCI, SSIE)

Manufacturer’s Reporting Requirements

• Annually report actual number of replacement engines produced for California at the end of each model year
• Report even if zero produced
• Engine models
• Description of the physical and performance characteristics
Replacement Engines (OFCI, SSIE)

Sample Label Format

<table>
<thead>
<tr>
<th>Trade Mark</th>
<th>IMPORTANT EMISSIONS INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Corporate Name</td>
</tr>
</tbody>
</table>

THIS ENGINE DOES NOT COMPLY WITH CALIFORNIA AND FEDERAL OFF-ROAD OR ON-HIGHWAY EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE FOR AN ENGINE MANUFACTURED PRIOR TO JANUARY 1 [Insert appropriate year] IS A VIOLATION OF CALIFORNIA AND FEDERAL LAW SUBJECT TO CIVIL PENALTY
# Small Spark - Ignition Engines

## Engine – Equipment Matching

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Will ARB Certify?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>Equipment</td>
</tr>
<tr>
<td>2007</td>
<td>2007</td>
</tr>
<tr>
<td>2006</td>
<td>2007</td>
</tr>
<tr>
<td>Previous</td>
<td>2007</td>
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</tbody>
</table>

California Environmental Protection Agency

Air Resources Board
# Small Spark - Ignition Engines

## Evaporative Emissions Requirements

<table>
<thead>
<tr>
<th>Engine $\geq 225$ cc</th>
<th>Equipment</th>
<th>Acceptable Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2008</td>
<td>Actively Purged Carbon Canister</td>
</tr>
<tr>
<td>(Non-integrated)*</td>
<td>2008</td>
<td>Carbon Canister with purge port capped</td>
</tr>
<tr>
<td>2007 or 2006</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Engine manufacturer does not supply the fuel tank with the engine.*
Large Spark-Ignition Engines

2007 Model Year and Later

Certification Requirements:

• Steady State Emissions
• Transient Emissions
• Field Testing
• Evaporative Emissions
• Engine Diagnostic System
Large Spark Ignition Engines

Field Testing

To Demonstrate Compliance:

• Use Transient / Discrete-Mode / Ramped-Modal Testing Data
  OR

• Portable Emission Measurement System (PEMS)
  - Follow 40 CFR Part 1065, Subpart J
Any Questions ??