

# Mid-Level Ethanol Evaluation Program

**Goal**  
Government/Industry collaborative effort that adds data to determine an appropriate ethanol blend point for base fuel

**EPA Oversight/Prescription for testing a new fuel or additive**

Good start, but much more testing was required

- Clean Air Act Section 211(f)(4)**
- Exhaust Emissions
  - Evaporative Emissions
  - Durability
  - Driveability

**AAMA/IAAM request to 2010 appropriations conferees for \$17M in additional funding for vehicle testing**

Initial screen testing by government, industry & academia

USCAR creates initial framework for comprehensive vehicle test program

Coordinating Research Council (auto/oil) leads effort to expand depth and breadth of test program

Mid-Level Ethanol Research Coordination Group created to identify overlaps, gaps & opportunities for collaboration & funding

**Initial studies:**

- Australia/Orbital – Exhaust emissions, durability, materials compatibility
- MN/RFA – Driveability, materials compatibility
- MCAR - Driveability
- ACE – Exhaust emissions
- Stockholm University – Evaporative effects
- CRC – Permeation, Phase 1 - Catalyst Durability
- DOE – Exhaust emissions, driveability, small/non-road engines
- Rochester Institute of Technology – Exhaust emissions

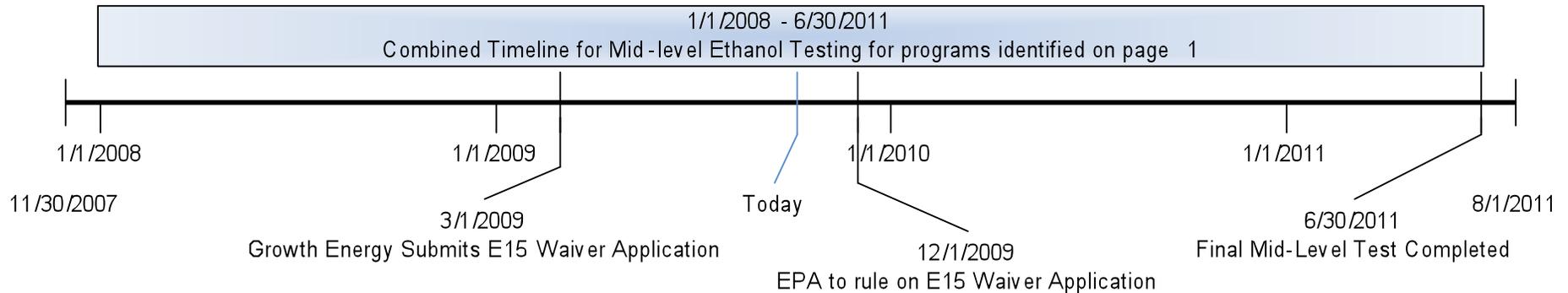
**Numerous Tests Underway**

- Catalyst/Exhaust Emissions Durability – GM/ORNL Champion, Phase 2 Useful Life (100K+ miles) testing underway at three contracted test labs
- Engine Durability – GM/Chrysler/NREL Champion, contractor selected, testing kickoff 10/2/09
- Evaporative Emissions Durability – Chrysler/GM Champion, contractor selected, 1 month to kick off
- Vehicle Fuel Storage & Handling – Ford/NREL Champion, component evaluation phase 1 near completion, Phase 2 under development
- On-Board Diagnostics (OBD) Evaluation – Honda Champion, In-use testing phase 1: results being assessed, Phase 2 under development
- In-Use Vehicle Driveability – Chevron/NREL Champion, five distinct driveability test programs either completed or underway
- Emissions Inventory and Air Quality Modeling – Chevron Champion, modeling to be conducted with results from above described testing
- Cold Ambient Operation & Exhaust Emissions – Toyota Champion, test program definition being finalized.

**Numerous government/industry experts engaged:**

- Auto: Chrysler, Ford, GM, Honda, Mitsubishi, Nissan, Toyota, VW & AAMA/IAAM
- Oil: BP, Chevron, ConocoPhillips, ExxonMobil, Marathon, Shell & API
- Ethanol – RFA
- Motorcycle – MIC
- Marine – NMMA
- Small Engine – EMA
- Outdoor Power Equipment – OPEI
- DOE & National Labs – NREL, ORNL
- EPA

## Mid-level Ethanol Testing Timeline and Legend



### Legend (for abbreviations on page 1)

- AAM – Alliance of Automobile Manufacturers
- ACE – American Coalition for Ethanol
- AIAM – Association of International Automobile Manufacturers
- API – American Petroleum Institute
- CRC – Coordinating Research Council
- DOE – Department of Energy
- EMA – Engine Manufacturers Association
- EPA – Environmental Protection Agency
- MCAR – Minnesota Center for Automotive Research
- MIC – Motorcycle Industry Council
- MN – Minnesota
- NMMA – National Marine Manufacturers Association
- NREL – National Renewable Energy Laboratory
- OPEI – Outdoor Power Equipment Institute
- ORNL – Oak Ridge National Laboratory
- RFA – Renewable Fuels Association
- USCAR – United States Council for Automotive Research

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