



Green Jobs Waiver

A plan to create jobs, expand domestic energy and reduce greenhouse gas emissions through a higher ethanol blend



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About Growth Energy

Beliefs – We Believe....

- Ethanol is our nation's growth energy. It's renewable, realistic and clean-burning.
- Our country is in an economic crisis and that a strong biofuels industry will create jobs and stimulate economic growth
- In greener and cleaner fuels through 21st century technology and innovation
- Biofuels will stimulate the growth of sustainable agriculture on a worldwide basis providing crops for both food and fuel
- That an energy independent America is achievable and that the advancement of ethanol is the most important first step to making it a reality



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Our Message

- Ethanol is America's best renewable fuel, reliable and affordable now. It's high-tech, homegrown and on the verge of innovative breakthroughs that will make it even cleaner and greener for the long-term.
- Ethanol is vital to achieving greater American energy independence. It is today's only viable and available fuel that can be substituted for gasoline. Unlike oil, ethanol is renewable – it will never run out. As science moves from making ethanol from corn to producing it from corn cobs and other plant materials, ethanol will continue to be a sustainable and effective energy solution for the world. America's dependence on foreign oil causes enormous problems for Americans every day – raising the prices on everything from gas to groceries and sending money and jobs overseas.
- Ethanol is America's green growth energy solution to our foreign oil problem.



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The Need to Address the Ten Percent Ethanol “Arbitrary Cap” or “Blend Wall”

- EPA interpretation limits the amount of ethanol that may be blended with gasoline to 10 percent – thereby limiting distribution of ethanol to 10 percent of the nation’s gasoline supply.
- Current domestic use of gasoline is approximately 140 billion gallons – meaning a theoretical maximum of 14 billion gallons of ethanol may be used each year.
- Logistical and infrastructure limitations make it impossible to blend ethanol into every single gallon of gasoline--market is essentially capped at 12.5 billion gallons.
- Blend barrier precludes investment in additional ethanol capacity, and precludes investment in second generation biofuels like cellulosic ethanol because there will be no market for these new fuels.



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The Clean Air Act Allows For Introduction of New Fuel Blends

- Clean Air Act prohibits introduction into commerce of any new fuel additive that is not “substantially similar” to existing commercial fuel additives.
- The term “substantially similar” is not defined by the Clean Air Act.
- In 1991, EPA issued an interpretive rule that for a fuel additive to meet the definition of “substantially similar,” the fuel must contain no more than 2.7 percent oxygen by weight.
- Ethanol contains 35 percent oxygen by weight. Therefore, any ethanol-gasoline blend with more than 7.7 percent ethanol does not meet this EPA interpretation.
- E15 contains approximately 5.25 percent oxygen. E13 is 4.55% oxygen.
- The Clean Air Act allows introduction of new fuel additives under section 211(f)(4) that provides that a fuel manufacturer may ask EPA to “waive” the prohibition on new fuel additives if the fuel additive “will not cause or contribute to a failure of any emission control device or system . . . to meet its certification emission standards.”
- Since 1978, EPA has granted 11 waivers for a range of different fuel additives.
- The first waiver EPA granted in 1978 was for use of E-10. Since that time, more than 40 billion gallons of E-10 have been used in the U.S.



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Options to Address the Cap

Options to lawfully introduce an ethanol blend above 10 percent include:

- (1) Change the Clean Air Act to expressly allow higher blends
- (2) Change EPA's 1991 interpretation of "substantially similar"
- (3) Pursue a waiver pursuant to the Clean Air Act.

We are pursuing the legal framework set forth in the Clean Air Act, which has been used successfully many times in the past, to allow the use of higher ethanol blends.



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EPA's Standard of Review

- To obtain a waiver, an applicant must submit an application to EPA that includes information that demonstrates that the fuel additive will not cause or contribute to the failure of emission control systems.
- According to the federal courts, waiver decisions are narrow in scope and should be:
 - “Based on one criterion: a fuel additive’s effect on emission standards and Congress was specific as to how EPA was to evaluate that criterion: it was to assess whether the additive’s emission products causes or contributes to an emission control device’s ability to comply with the Act’s emission standards.” Ethyl Corp. v. EPA, 51 F.3d 1053, 1058 (D.C. Cir. 1995).
 - Emissions increases below applicable emission standards and emission of non-regulated pollutants are not relevant to the waiver process. Motor Vehicle Mfrs Ass’n v. EPA, 768 F.2d 385, 390 (D.C. Cir. 1985).
- Recognizing that it would be “virtually impossible” to test all vehicle emission control systems, EPA and the courts recognize that statistical sampling and emissions evaluations based on a representative fleet are sufficient. e.g., Ethyl Corp. at 1064, Arconal Waiver (1979).
- Where an applicant does not have sufficient test data, EPA and the courts have found that an applicant may instead provide a reasonable theory which predicts the emission effects of an additive, and need only conduct a sufficient amount of testing to demonstrate the validity of the theory. e.g., Ethyl Corp. at 1064, TC-11064 Waiver (1980).



The Application Relies on Multiple Recent Studies that Support the Use of E15

- Growth Energy's Waiver Application seeks to allow use of up to 15 percent ethanol.
- The waiver does not *mandate* use of more ethanol – it simply allows introduction of a slightly higher blend.
- The Waiver Application includes two-volumes of recent studies by independent third-party researchers regarding the fuel additive's emission effects derived from testing.
- The studies thoroughly evaluated the impact of E15 and higher blends on emissions, materials compatibility, durability and drivability.
- Testing involved more than 85 vehicle and engine types and thousands of hours of testing and evaluations by Federal, state and non-governmental organizations.
- The studies demonstrate that vehicles are fully capable of using E15 fuel blends without any failure of emission control systems.



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Recent Studies Demonstrate No Increase in Tailpipe Emissions

DOE (2008)

- Peer-reviewed study on representative fleet of vehicles and SNREs found no significant changes in tailpipe emissions at higher blends including E15 and E20.

EERC/MCAR (2007)

- Studied eight blends from E10 to E85 and found all blends met CAA standards for tailpipe emissions.

RIT (2008)

- Evaluated E20 on 10 legacy vehicles (with between 30,000 and 120,000 miles)
- After 75,000 collective miles driven in real-world conditions--CO, NO_x and total hydrocarbons emissions decreased when using E-20.

SAE (2006)

- Confirming emission reductions of NO_x, total hydrocarbons, and CO2 at higher ethanol blends up to E20.



Catalytic Converters

“Catalytic converter manufacturers use the same process for manufacturing converters for gasoline or gasoline alcohol vehicles . . . In summary, catalytic converters for flex fuel vehicles and non flex fuel vehicles are the same.”

Doug Mancini
Former Delphi and Ford Motor Company Engineer



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Recent Studies Demonstrate No Discernable Change In Evaporative Emissions

NREL (2003)

- Volatility of E10 and E15 is almost identical (RVP).

CRC (2006)

- Evaluated effects of E0, E6, E20 and E85 on evaporative emissions and found no statistically significant increase in diurnal permeation rates between E6 and E20.

MN/RFA (2008)

- Four studies on numerous and representative metals, elastomers, plastics and fuel pumps and sending units found E20 will not impair representative materials thereby leading to evaporative emissions.



Recent Studies Demonstrate Compatibility with Fuel Systems

SAE J1681

- Automotive industry guidelines in place since early 1990s prescribe 15 percent methanol blend for qualifying all materials for vehicle use.
- As methanol produces greater negative effects than ethanol on materials, materials that have been tested with this blend are fully capable of using E15.

MN/RFA (2008)

- Four studies on numerous and representative metals, elastomers, plastics, and fuel pumps and sending units found E20 will not impair materials used.



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Recent Studies Demonstrate No Concerns with Drivability

MN/RFA (2008)

- Study evaluated 40 pairs of vehicles fueled with E0 and E20 by trained drivability raters using standard industry drivability tests and found similar performance and no drivability concerns when using E20.

RIT (2008)

- Evaluated E20 on 10 legacy vehicles (with between 30,000 and 120,000 miles)
- After 75,000 collective miles driven in real-world conditions found vehicle ran as well or better on E20 and no degradation of performance on E20.

MCAR (1999)

- One-year study of fifteen in-use cars and trucks manufactured between 1985 and 1996 operating on E10 and E30 showed no drivability concerns with higher blend.

DOE (2008)

- Found no drivability or operability issues with any ethanol blends including E15 and E20.



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What about small engines?

- Waiver application “requests approval for use of an ethanol-gasoline blend containing up to 15 percent ethanol by volume” – not a mandate that all gasoline contains 15% ethanol.
- According to the DOE Study on higher blends issued in fall of 2008, small engines performed no worse on E15 than they did on E0.



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What about fuel dispensers?

- Underwriters Laboratories supports that existing dispensers can be used with ethanol blends up to 15 percent
- "UL determined that there is no significant incremental risk of damage between E10 and fuels with a maximum of 15 percent ethanol. This conclusion was reached after careful examination of the effects of varying levels of ethanol on components," said John Drengenberg, Consumer Affairs Manager for UL. (Feb. 2009)



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In total . . .

- This application includes more independent studies and data than any waiver application EPA has granted in the past.
- There is no legitimate basis to deny a waiver for E15 based on the extensive recent third-party studies that demonstrate that E15 will not cause failure of emission control devices or systems or result in discernable or negative difference in emissions, compatibility, or drivability.
- Results are not surprising given similar composition of E15 to E10 (sole difference is 5% more ethanol in place of gas in mixture, similar in lead, sulfur, volatility etc.) and 30 years and 40 billion gallons of positive experience with E10.



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E15 Will Result in Many Benefits

Energy Independence

- Move to E15 could offset need to import 7 billion gallons of gasoline annually – equivalent to 70% of Saudi Arabia's 2007 imports.

Environmental Improvements

- Reduces harmful tailpipe emissions including hydrocarbons, carbon monoxide, and nitrogen oxides (DOE, RIT, Stockholm)
- Reduces smog
- Prevents drilling in sensitive areas
- Reduces potential for surface and groundwater contamination
- Reduces greenhouse gas emissions – up to 59% GHG reduction compared to gasoline
- Reduce over 60 million tons of CO2 per year or the equivalent of taking 10.5 million vehicles off the road

Economic Benefits

- Based on third-party study, move to E15 will result in one time impact of 260,000 new construction related jobs and \$36.8 billion associated with facility construction
- Annual economic impact of 136,101 full time jobs and \$24.4 billion.



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The Waiver Application and Process

- Growth Energy's waiver application will be submitted to EPA on March 6.
- The application contains a narrative description of how recent and relevant studies satisfy the Clean Air Act requirements necessary for EPA to grant the waiver and includes two volumes of studies in support of the waiver.
- EPA will review the application and must make a decision regarding the application within 270 days of receipt of the application.
- Waiver gives EPA room to approve a fuel blend between 10 and 15%.
- EPA will solicit public comment regarding the application at some point prior to making its decision.
- We welcome your review of the application, would be pleased to answer any questions you may have, and would appreciate your support of the requested waiver with written comments during the comment period.



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Thank you!



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