The Environmental and Economic Benefits of American-Made E15 Fuel

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Energy Resources Center

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Technology Impact

**Corn Yield - USDA**
- Bushels/acre
- 2005: 148
- 2010: 153
- 2016: 175

**Ethanol Yield**
- Gallons/bushel
- 2005: 2.70
- 2010: 2.79
- 2016: 2.90

**Fuel Per Land Area**
- Gallons/acre
- 2005: 400
- 2010: 426
- 2016: 506
Increase in Corn Ethanol Use

U.S. Corn and Ethanol Production

- U.S. Corn Production (Billion Bushels)
- U.S. Ethanol Production (Billion Gallons)

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Decrease in Air Toxins

Ambient and Emission Trends of Toxic Air Contaminants in California

Figure 3. Statewide annual average concentrations and emissions inventory (EI) trends for six toxic air contaminants. EI data were available starting in 1996. (a) Benzene (1990–2012), (b) 1,3-Butadiene (1990–2012), (c) Perchloroethylene (1990–2012), (d) Hexavalent Chromium (1991–2012), (e) Formaldehyde (1996–2012), (f) Acetaldehyde (1996–2012).
New Emissions Study for 5 Major Global Cities including Beijing/Tianjin

The University of Illinois at Chicago International Biofuels and Emissions Analysis Model (iBEAM)
We will need very high annual Electric Vehicle Sales to Turn over Existing Vehicle Stock

- Whitmore global EV adoption model: Annual EV vehicle sales will account for between 20% to 60% by the year 2030 converting to 7% and 22% of total vehicle stock depending on the policy scenario.
- Roland Berger report cites annual new vehicle sales of EVs by 2030 of 19% (3% Battery Hybrid plus 3% Plug-in Electric Vehicle plus 1% Full Hybrid and 11% Mild Hybrid) which would correspond more closely with the slower adoption scenario by Whitmore.
- China recently introduced a new vehicle energy score with aggressive targets of 10 percent of low or zero emissions vehicle sales per auto manufacturer starting in 2019, rising to 12 percent in 2020.

Source: Whitmore, Adam: How fast could the market for electric vehicles grow?
• Even in Highly Developed Cities Emissions Reductions from Immediate Ethanol Adoption Outweigh Electric Vehicle Benefits for Decades
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