



Quantifying the Impact of Vehicle and Motor Fuel Provisions from the Energy Policy Act on the Sustainability and Resilience of U.S. Cities

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EPRC6, Santa Fe, New Mexico

September 8–9, 2016

NREL/PR-6A20-67065

Energy Policy Act (EPAAct) alternative fuel vehicle (AFV) programs and goals

Research questions:

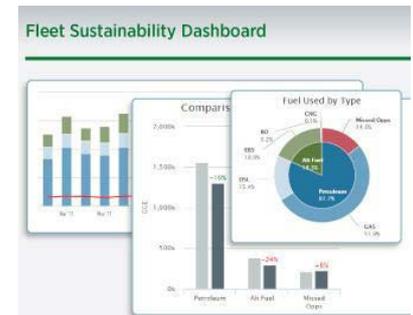
- Did EPAAct help create markets for alternative fuels and vehicles?
- How much have EPAAct programs helped people and the environment?

EPA Act Alternative Fuel Vehicle Programs

- State and Alternative Fuel Provider (SAFP) Fleet program
 - Covered fleets must comply with AFV acquisition requirements
 - Alternative fuel provider fleets include electric and natural gas utilities
- Sustainable Federal Fleets program
 - Federal fleets must comply with alternative fuel use requirements
- Clean Cities
 - Voluntary program supports nearly 100 local coalitions working to advance alternative fuels and advanced vehicles



epact.energy.gov

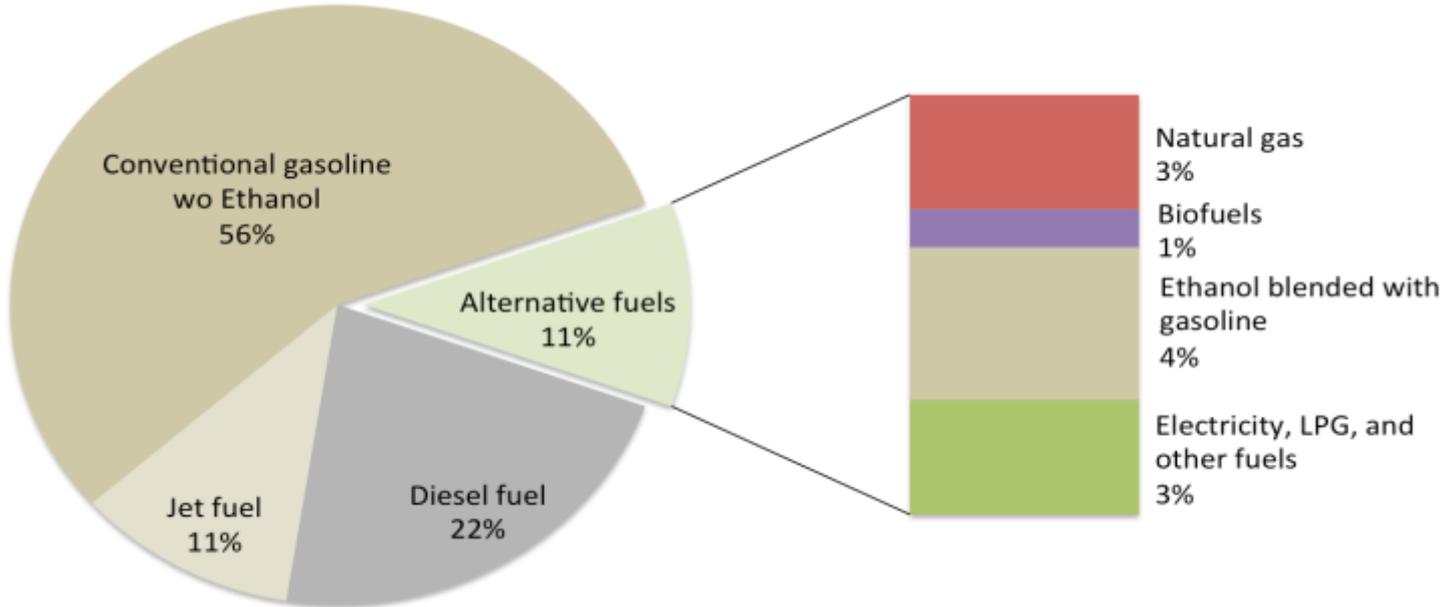


federalfleets.energy.gov



cleancities.energy.gov

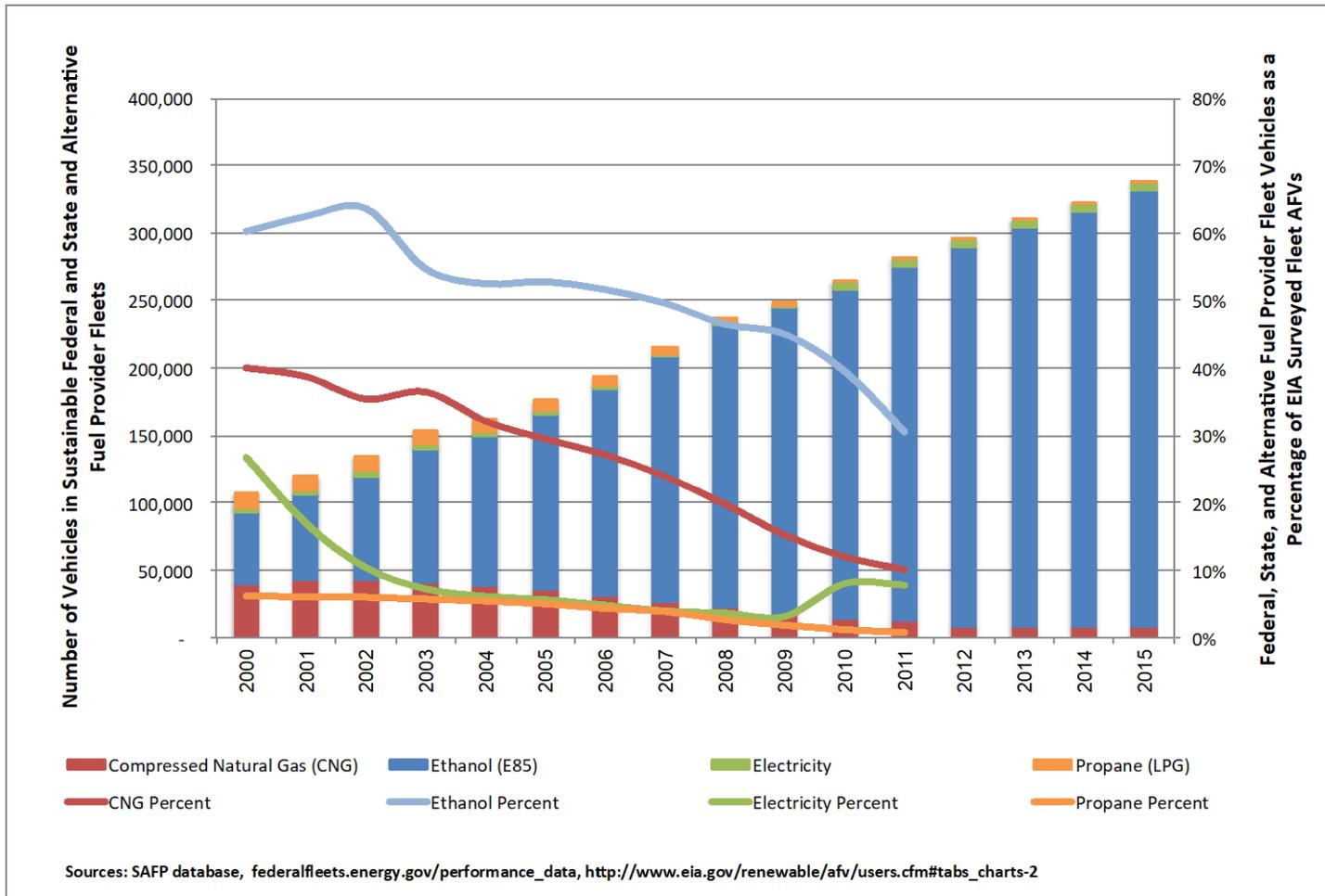
EPAct Alternative Fuels in Context



Source: 2014 Transportation Energy Use, http://www.eia.gov/Energyexplained/?page=us_energy_transportation

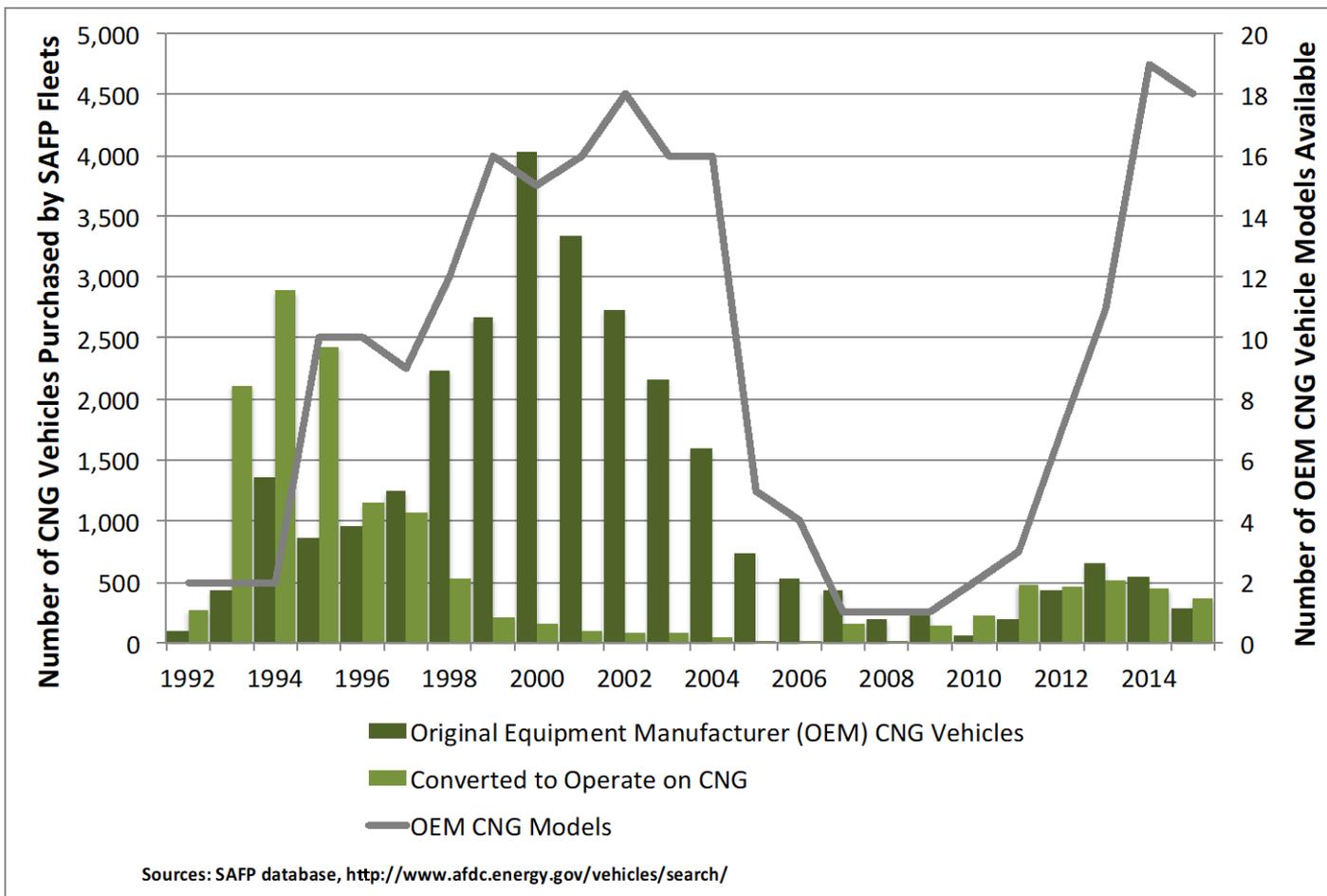
	Million GGE in 2014		
	National	EPAct SAFP and Federal Fleet Programs	EPAct Programs Percentage of National Total
Alternative fuel (EPAct fuels)			
Natural gas (CNG, LNG)	6,720	4	0.07
Biofuels excluding ethanol blended with conventional gasoline (biodiesel, E85)	2,240	34	1.52
Electricity, propane, and other fuels (electricity, propane, hydrogen)	6,720	1	0.01

EPA Programs Provided Consistent Early Markets for AFVs



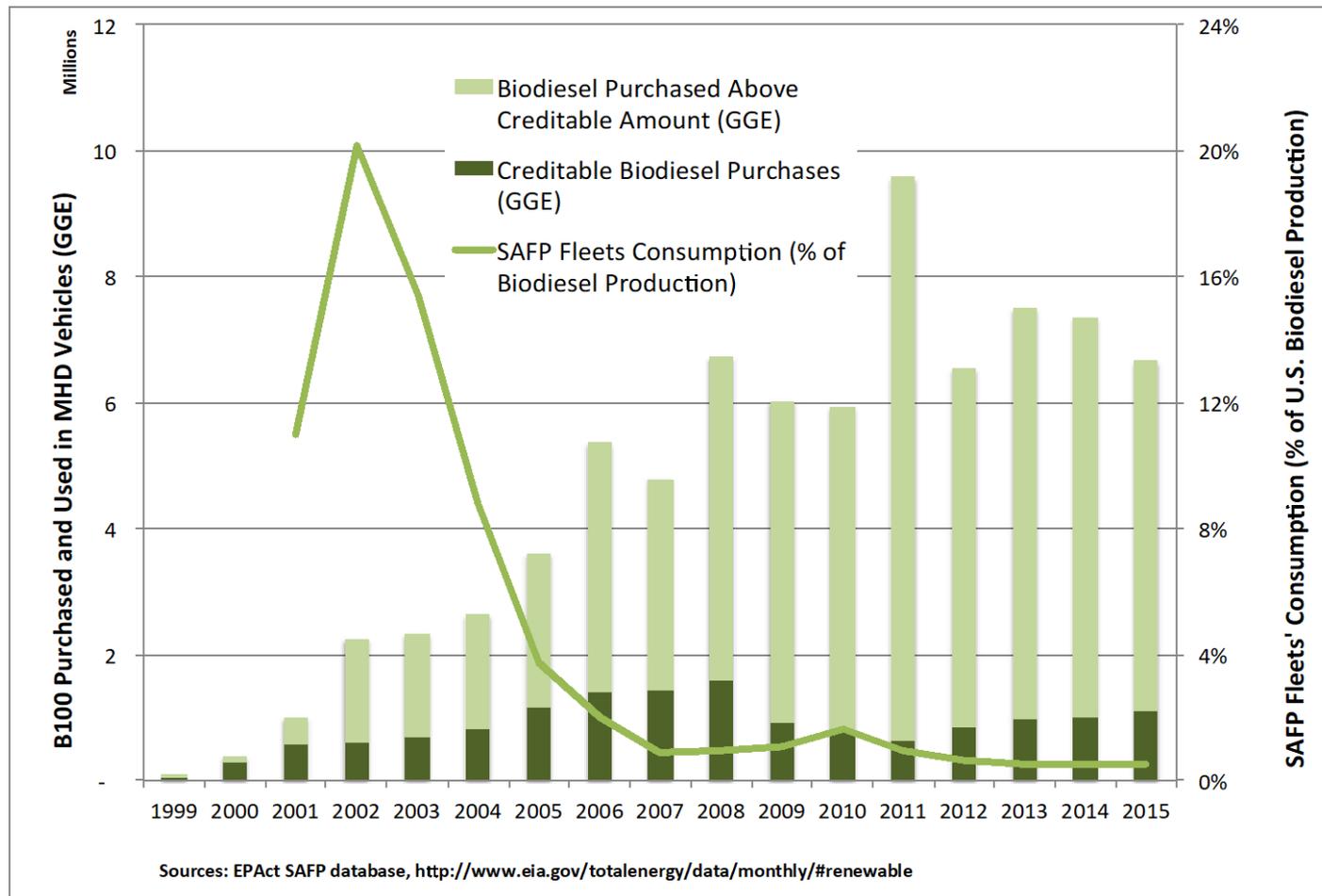
The number of AFVs in EPA programs has increased steadily, but the EPA programs' fraction of the total number of AFVs tracked by the Energy Information Administration (EIA) nationally has decreased significantly

EPA Act SAFF Fleets Anticipated Markets for CNG AFVs



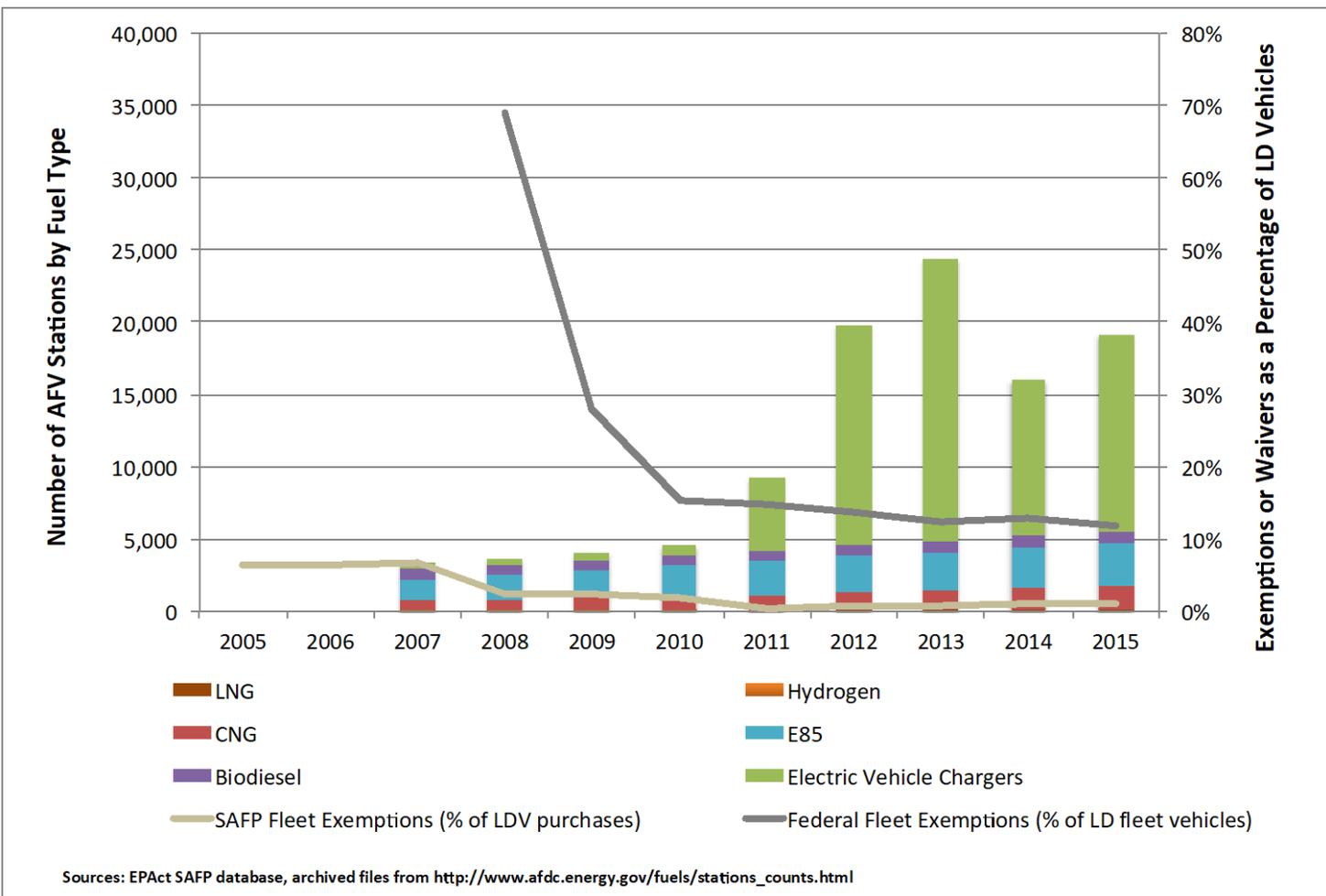
EPA Act SAFF fleets converted vehicles to operate on compressed natural gas (CNG), which might have motivated manufacturers to offer more models

EPAct SAFF Fleets Provided an Early Market for Biodiesel



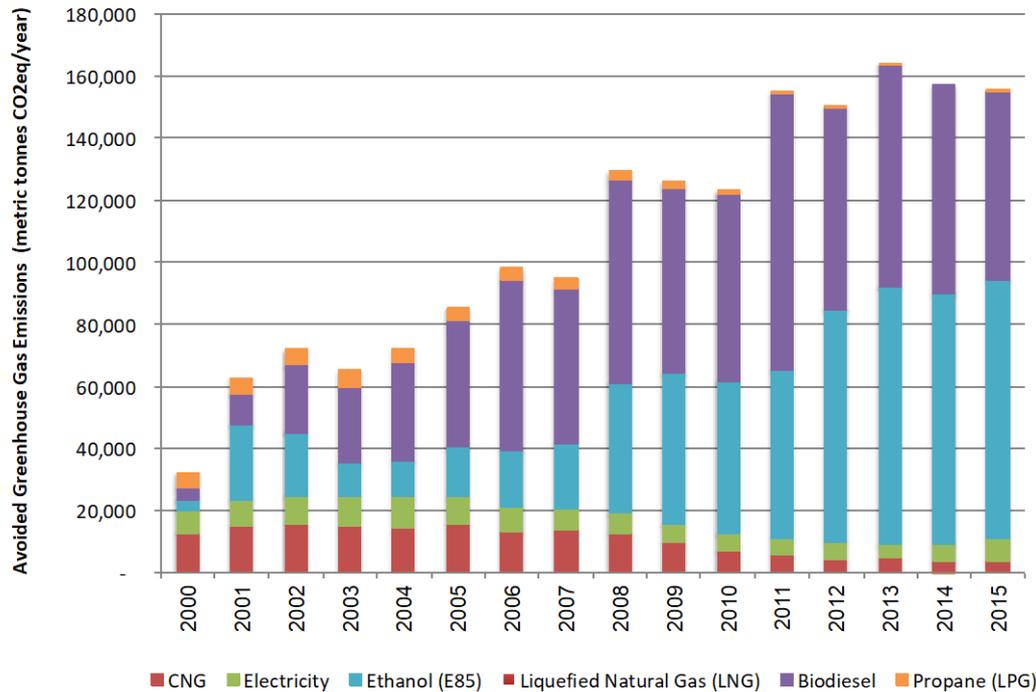
EPAct SAFF fleets consistently used more biodiesel than they were able to get credit for

Increased Fuel and AFV Availability Has Helped the EPA Act Fleets



EPA Act fleets have sought fewer exemptions because of the increased availability of alternative fuels and AFVs

EPAcT Fleets Helped the Environment and Economy



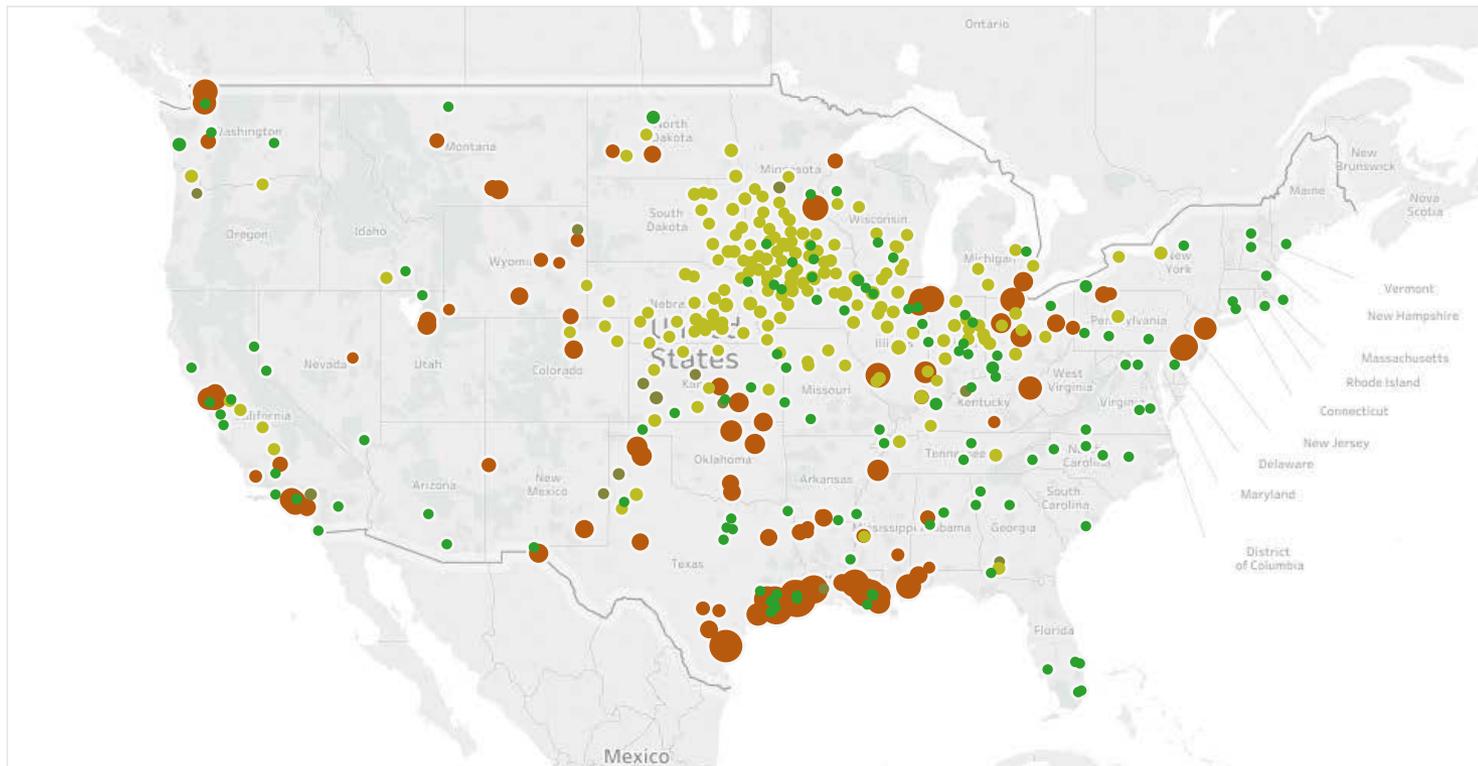
Sources: EPAcT SAFP database, http://federalfleets.energy.gov/performance_data

EPAcT fleets' greenhouse gas (GHG) savings have been equivalent to removing almost 30,000 vehicles from the road per year in recent years

EPAcT Fleets Biofuels	Total Jobs (multiple of jobs/GGE for gasoline or diesel)	Total Yearly Economic Benefit (multiple of gasoline or diesel)
Ethanol	5.3	4.2
Biodiesel	2.5	2.1
Cellulosic Ethanol	5.9	4.6

SAFP fleets' use of biofuels directly and indirectly supported more than 130 jobs and more than \$20 million in economic activity each year

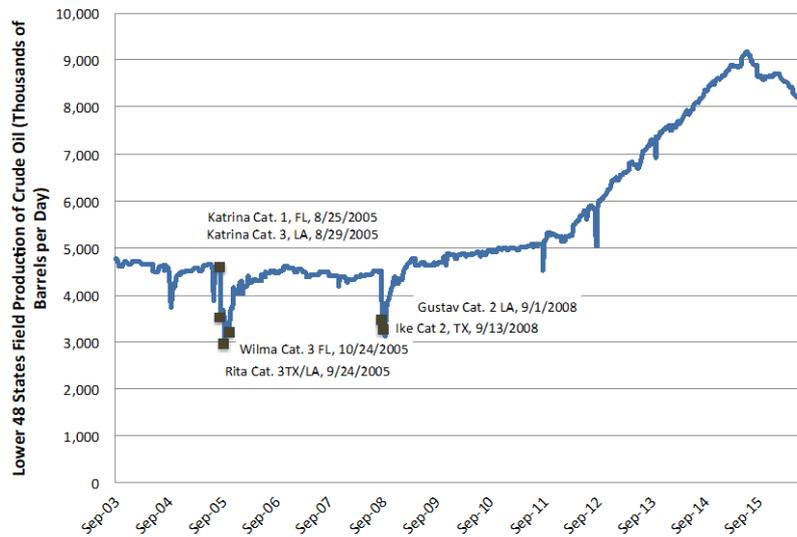
Geographically Dispersed Biofuels Plants Increase Resilience



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Greater geographic distribution of smaller production plants makes biofuels less vulnerable to disruptions from weather events than conventional gasoline and diesel supplies

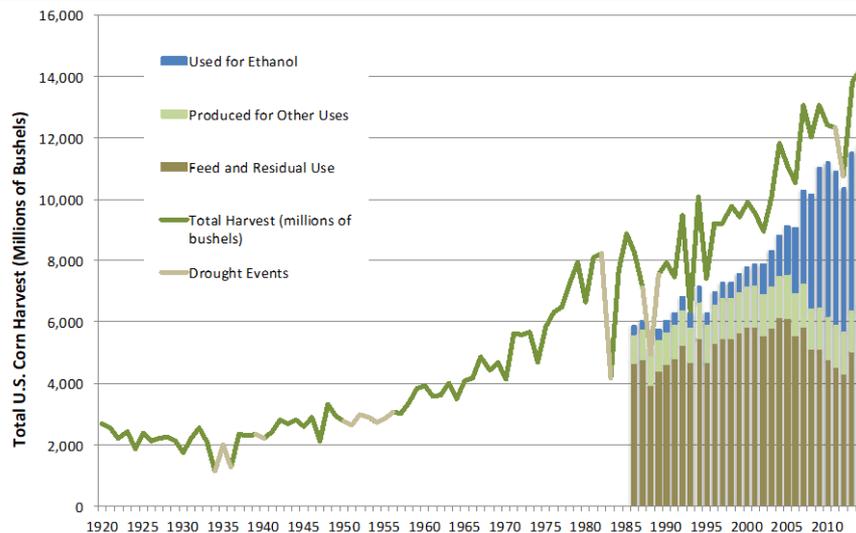
In the Future, Biofuels Will Be Produced from Cellulosic Materials



After Hurricanes Katrina and Rita:

- 27 refineries went offline
- 90% of oil production in the Gulf of Mexico remained shut-in after 12 weeks

Vulnerabilities of conventional fuel production are difficult to address



DOE and industry partners have addressed longer-term weather and climate vulnerabilities of biofuels production with research in cellulosic feedstocks

- Successful opening of a 30-million gallon-per-year plant in 2015

EPA's fleets' acquisitions of AFVs and use of alternative fuels:

- Provided early and reliable demand for both AFVs and alternative fuels, especially ethanol and biodiesel
- Alternative fuel production benefitted the economy by supporting more than 130 jobs and \$20 million in economic activity annually

GHG savings in recent years are equivalent to removing almost 30,000 vehicles from the road annually

Biofuels are likely to be more sustainable and resilient than the petroleum fuels they are replacing

Acknowledgments

This work was authored by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308. Funding provided by the DOE Office of Energy Efficiency and Renewable Energy Vehicle Technologies Program and EPA's State and Alternative Fuel Provider Program.

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Thank You!

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