

# Infrastructure Platform

## Introduction

The Infrastructure Platform is a new platform within the Biomass Program. It was implemented in FY 2007 in response to growing concerns about how current infrastructure capacity could handle a growing supply of biofuels.

In order to achieve large-scale market adoption of biofuels, significant infrastructure challenges, including distribution, storage, materials compatibility, fuel dispensing and vehicle end use, must be addressed. In terms of the overall biofuels supply chain, the infrastructure platform focuses on the distribution of fuels from the biorefinery to use in vehicles. Feedstock logistics, including transport of feedstocks to the biorefinery, is covered under the Biomass Program's Feedstocks Platform. Work conducted under the infrastructure platform is broken down by fuel type, with current projects focused primarily on ethanol.

Given the fact that the E85 market has been slow to develop, DOE, in close collaboration with EPA and DOT, is evaluating the performance, materials and emissions impacts of E15 and E20. Beginning in FY 2007, the infrastructure platform began testing of intermediate ethanol blends on legacy vehicles and small engines, and this continues to be the platform's area of focus in terms of funding. If intermediate blends prove to be acceptable based on a variety of different environmental, performance and other criteria and are approved by EPA, these intermediate blends could be used nationwide in all types of vehicles, thereby reducing the need for substantial near-term increases in E85 fueling stations and flexible-fuel vehicles (FFVs). Adequate infrastructure will need to be in place to handle increased ethanol blends.

## Platform Performance Goal

To develop a systematic approach to build an adaptable cost-effective infrastructure system that will ensure widespread biofuels use for transportation applications.

## Objectives

- Reduce the cost of transportation and distribution of biofuels to levels that are cost-competitive with gasoline transportation and distribution (approximately \$0.15/gallon) by 2022.
- Facilitate the development of nationwide capability to transport and distribute up to 35 billion gallons of biofuels by 2017.

## FY 2007 Accomplishments

FY 2007 marked the beginning of the Infrastructure Platform within the Biomass Program. The platform will have a formal budget beginning in FY 2007. Its accomplishments since its inception are as follows:

- Began testing intermediate blends of ethanol (i.e., E15 and E20) on small engines and vehicles in collaboration with the Department of Energy's Vehicle Technologies Program. Testing considers emissions, catalyst durability, drivability, and materials compatibility in legacy fleet vehicles, as well as full useful life emissions and durability testing on small engines. A report with preliminary results of testing on small engines was provided to the Environmental Protection Agency in October 2007.
- Began formal collaboration with industry at the Infrastructure Planning Workshop in October 2007.

## **Budget**

The Infrastructure Platform will not have its own budget line item until FY 2009. However, expenditures in this area in FY 2007 were \$0.75 million and in FY 2008 were about \$8 million.

## **2008 Plans**

- Continue testing of intermediate ethanol blends on vehicles and small engines. The Biomass Program and Vehicle Technologies Program are expanding their current test plan of small engines to include marine, motorcycles and snowmobiles. A progress report with results from testing of small engines and some vehicles is expected in summer 2008.
- Continue conducting an infrastructure mapping exercise to outline various scenarios for achieving the volumes required by the Renewable Fuel Standard (RFS). The mapping exercise will consider the implications of various acceptable ethanol blend levels, location of FFVs and fueling stations, and pipeline development, among other factors that will ultimately affect achievement of the RFS.
- Conduct a Pipeline Feasibility Study in coordination with the Department of Transportation to scope out the feasibility of constructing pipelines dedicated to the transportation of ethanol.

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