



## Board Action Area 6: Blending

As ethanol production ramps up to meet renewable fuel levels required by the new RFS, we must ensure that retail markets can deliver large volumes of ethanol to U.S. consumers. The E10 market will be saturated in the next few years and the number of E85 fueling stations and flex-fuel vehicles (FFVs) will likely not grow fast enough to accommodate the higher volumes of ethanol. One potential option for increasing U.S. market opportunities is to raise the amount of ethanol allowed in gasoline to beyond 10 percent (see Figure 5). In order to allow E15, E20, or other intermediate blends\* to be used in regular vehicles – that is, non-FFVs – we must first understand how these fuels could affect emissions, catalyst durability, driving performance, and materials compatibility, among other factors.

To that end, DOE, in partnership with the EPA, is undertaking an Intermediate Blends Test program to evaluate the potential impacts of intermediate blends on the existing vehicle fleet as well as on smaller engines such as those in lawn mowers, tractors, and other small off-road engines. This program will begin to provide the data needed for Federal fuel registration and approval for the use of intermediate blends of ethanol and gasoline in today's vehicles.

Further increasing the demand for blended ethanol can be expedited by resolving inconsistencies in state interpretations of American Society for Testing and Materials (ASTM) fuel standards when ethanol is blended with gasoline. It will also be important to ensure that the distribution infrastructure is in place to effectively deliver intermediate blends to consumers.

\* E10, E15, E20 and E85 denote the percent of ethanol blended with gasoline (10%, 15%, etc.).

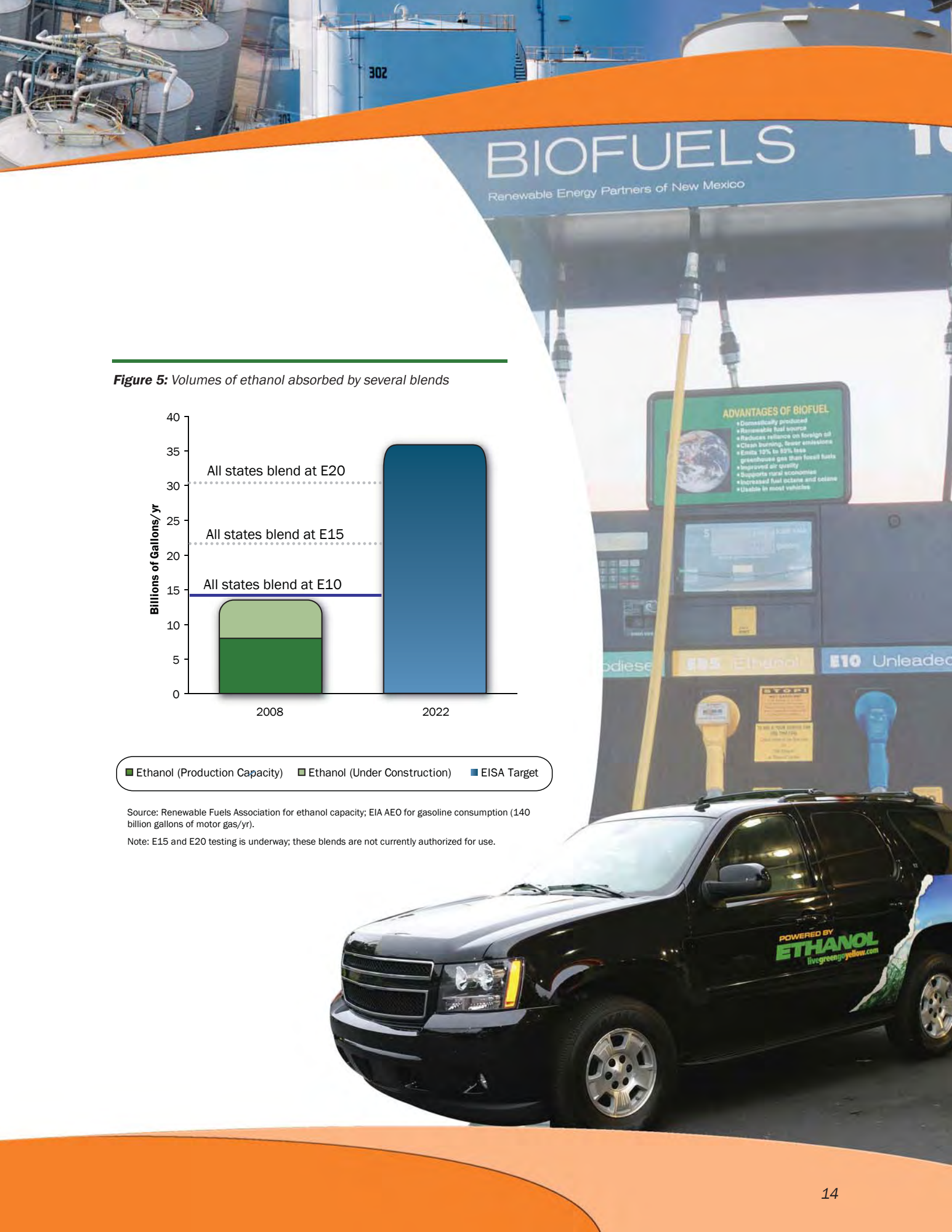
### Next Steps

Necessary steps to increase the availability of blended ethanol:

- Air quality impacts of higher blends need to be quantified. While E10 helps reduce overall vehicle emissions of criteria pollutants, the impact of higher blends on emissions is not currently well understood. There is a need to understand how higher fuel blends may affect state and local air quality situations or attainment of National Ambient Air Quality Standards (NAAQS).
- Ethanol use and limitations on use may be a function of the fleet's ability to legally and technically absorb higher volumes of ethanol, and that is a function of both fuel and vehicle allowances and constraints.
- Materials used in current infrastructure (tanks, piping, dispensers, etc.) may not be compatible with higher blends.

### **Biomass R&D Board Actions**

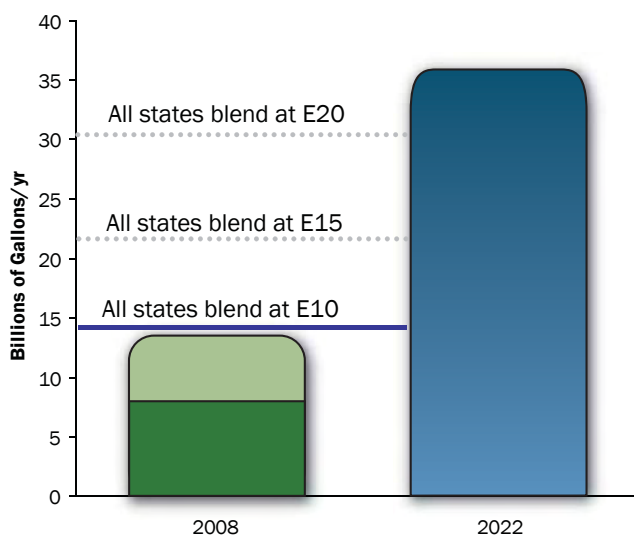
- The Board has approved a statement on ethanol blend policy (see Figure 6).
- As noted, the Board's member agencies are conducting an interagency testing program to evaluate the impact of intermediate blends on vehicle emissions and material compatibility to support potential fuel supplier waiver applications. Initial test results are targeted to be available in Fall 2008.
- The Board will work with state and local agencies to ensure full national penetration of E10 through resolving obstacles posed by state regulations and the private sector.



# BIOFUELS

Renewable Energy Partners of New Mexico

**Figure 5:** Volumes of ethanol absorbed by several blends



■ Ethanol (Production Capacity) ■ Ethanol (Under Construction) ■ EISA Target

Source: Renewable Fuels Association for ethanol capacity; EIA AEO for gasoline consumption (140 billion gallons of motor gas/yr).

Note: E15 and E20 testing is underway; these blends are not currently authorized for use.

# Figure 6: Board Ethanol Blends Policy Statement

## Alleviating Oil Dependency and Greenhouse Gas Emissions on an Accelerated Basis Through Biofuels Deployment

The interagency Biomass Research and Development Board, on behalf of its respective agencies, is committed to the President's goal of reducing petroleum-based gasoline usage in the United States by 20 percent in the next 10 years ("the Twenty-in-Ten" initiative). Our national fuel infrastructure must accommodate the current and future growth of domestic biofuel production and delivery. As we develop the technology for the next generation of biofuels, it is essential that we enable both full utilization of increased biofuels production and nationwide retail access, while minimizing disruptions, cost and infrastructure challenges, and potential environmental, health and safety impacts. In addition to the present and projected growth of E10 and E85 sales, federal fuel registration and national market access for intermediate ethanol blends of gasoline (defined as blends between 10% and 85% ethanol, e.g., E12, E15, E20) that meet applicable statutory and regulatory requirements represent a critical pathway to meet the Twenty-in-Ten goal. The Board will continue to monitor and assess closely issues regarding the development, availability, and potential impacts of intermediate ethanol blends of gasoline.