GAO Highlights

Highlights of GAO-14-249, a report to congressional requesters

March 2014

PETROLEUM REFINING

Industry's Outlook Depends on Market Changes and Key Environmental Regulations

Why GAO Did This Study

The U.S. petroleum refining industry—the largest refining industry in the world—experienced a period of high product prices and industry profits from the early 2000s through about 2007. Since the recession of 2007 to 2009, the industry has been in transition.

Federal and state agencies regulate petroleum refining and the use of petroleum products to protect human health and the environment, as well as for other purposes. EPA, DOT, and California recently proposed or strengthened five key regulations, including EPA and DOT's coordinated fuel economy and GHG vehicle emission standards, and EPA's RFS, which has required that refiners and others ensure transportation fuels include increasing amounts of renewable fuels such as ethanol produced from corn.

GAO was asked to provide information on the domestic petroleum refining industry. This report examines: (1) major changes that have recently affected the industry and (2) the future of the industry. GAO reviewed information including studies by agencies and consultants and company financial filings; interviewed stakeholders, including agency officials and representatives of refiners and environmental organizations; and reviewed forecasts by the Energy Information Administration and others.

What GAO Recommends

GAO recommends that EPA identify the underlying causes of delays in issuing RFS standards and implement a plan to issue RFS standards on time. EPA generally agreed with GAO's findings and recommendations.

View GAO-14-249. For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

What GAO Found

Stakeholders GAO contacted and information reviewed by GAO identified the following three major changes that have recently affected the domestic petroleum refining industry:

- *Increased production.* U.S. and Canadian crude oil production have increased, leading to lower costs of crude oil for some refiners. After generally declining for decades, monthly U.S. crude oil production increased over 55 percent compared with average production in 2008.
- *Declining consumption.* Domestic consumption of petroleum products declined by 11 percent from 2005 through 2012, resulting in a smaller domestic market for refiners.
- *Key regulations.* Two key regulations—the Environmental Protection Agency's (EPA) and Department of Transportation's (DOT) coordinated fuel economy and greenhouse gas (GHG) vehicle emission standards, as well as EPA's Renewable Fuel Standard (RFS)—have contributed to declining petroleum-based fuel consumption. For some refiners, compliance with the RFS increased costs in the first half of 2013, though costs have since declined to some degree from their peak. According to some stakeholders GAO contacted, this was primarily due to RFS requirements exceeding the capability of the transportation fuel infrastructure to distribute and the fleet of vehicles to use renewable fuels. Moreover, EPA has missed the statutory deadline to issue regulations establishing annual RFS blending standards since 2009. EPA has not systematically identified the underlying causes of these delays or changed its approach in order to avoid them. A late RFS contributes to industry uncertainty, which can increase costs because industry cannot plan and budget effectively, according to some stakeholders.

Stakeholders GAO contacted and information reviewed generally suggested that the U.S. refining industry's outlook depends on the following factors:

- *Domestic consumption.* Future consumption of petroleum products is uncertain, with projections ranging from stable to slightly increasing through 2020 but not returning to consumption levels of the past. Forecasts GAO reviewed suggest higher future refinery production in scenarios with higher domestic consumption.
- *Costs of key regulations*. The extent to which requirements in the key regulations increase costs for refiners will affect the industry's outlook. For example, future costs to comply with RFS may depend on the annual renewable fuel volumes EPA sets and whether EPA issues annual RFS standards on time. In general, increasing costs may be absorbed by refiners (i.e., by reducing their profits), be passed on to consumers through higher prices, or both.
- *Foreign markets.* The U.S. refining industry has increasingly relied on foreign markets. Exports grew from 7 percent of production in 2007 to 17 percent in 2012. The extent to which domestic refiners export their products will depend on the competitiveness of U.S. refiners. Factors that may affect competitiveness include domestic environmental regulations, levels of U.S. and Canadian crude oil production, and the balance between global refining capacity and demand for petroleum products.