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Weekly Outlook: Ethanol Production and Corn Consumption Prospects for 2016

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Estimates from the U.S. Energy Information Administration (EIA), indicate that U.S. production of fuel ethanol totaled 14.313 billion gallons during the 2014 calendar year. That is 1.02 billion gallons more than produced in 2013 and about 384 million gallons more than the previous record production in 2011.

For the first nine months of 2015, EIA monthly estimates indicate that domestic ethanol production was 3.6 percent larger than during the same period in 2014. Weekly EIA estimates indicate that ethanol production in October and November this year exceeded that of a year ago by 3.1 percent. Production in December is expected to be slightly smaller than the record monthly production of 1.295 billion gallons in December 2014. For the year, ethanol production will likely be at least three percent larger than in 2014, reaching about 14.745 billion gallons. Production at that level will require about 5.25 billion bushels of feedstock, mostly corn, for conventional ethanol production in 2015.

Estimates of domestic ethanol consumption are based on EIA estimates of the volume of fuel ethanol production, imports, exports, and changes in domestic stock levels. Consumption was a record 13.444 billion gallons in 2014. Of that total, about 13.353 billion gallons was conventional ethanol made almost entirely from corn. Consumption during the first nine months of 2015 was four percent larger than during the same period last year. Consumption for the year, then, is on pace to reach 13.982 billion gallons, with about 13.897 billion gallons being conventional ethanol.

Domestic ethanol consumption during the year ahead will be influenced by two related factors. The first follows from the biofuels volume requirements in the EPA final rulemaking for 2014-2016 RFS standards released on November 30. Those standards require 18.11 billion gallons of biofuels consumption in 2016, 1.18 billion more than required in 2015 and 710 million gallons more than in the preliminary rulemaking released in May. The requirement for advanced biofuels was set at 3.61 billion gallons, 730 million more than the 2015 requirement and 380 million more than required in the preliminary rulemaking. The difference between the total and the advanced requirement is the implied requirement for conventional

biofuel (ethanol). The conventional requirement is referred to as an implied requirement since it can also be satisfied with discretionary blending of advanced biofuels. That implied requirement is at 14.5 billion gallons for 2016, up from 14.05 billion gallons in 2015 and 14.0 billion gallons in the preliminary rulemaking for 2016. The second and related factor that will influence domestic ethanol consumption is the expected level of domestic gasoline consumption since the blending requirements are actually enforced as a fraction of gasoline consumption. Based on EIA projections, consumption is expected to increase from 139.38 billion gallons in 2015 to 139.96 billion gallons in 2016. That expected increase of 580 million gallons follows an expected increase of 2.9 billion gallons in 2015. The conventional ethanol mandate of 14.5 billion gallons, then, reflects an expected small increase in the E-10 blend wall and a "push" to include larger quantities of higher ethanol blends (E-15 and E-85) in the domestic fuel supply.

If the 2016 gasoline consumption forecast is correct, the E-10 blend wall will be 13.996 billion gallons. Since some gasoline is consumed without ethanol and some with higher ethanol blends, the effective E-10 blend wall is thought to be 13.856 billion gallons (9.9 percent of gasoline consumption). A portion of the 13.856 billion gallons will be provided in the form of advanced ethanol, including cellulosic, but mostly imported Brazilian ethanol. The EPA projects consumption of advanced ethanol in 2015 at only 85 million gallons. We estimate that about 70 million gallons of that total will be Brazilian ethanol. That consumption is projected to increase to 249 million gallons in 2016 based on much larger imports of Brazilian ethanol in response to changing fuel standards in California. That would leave the conventional ethanol E-10 blend wall at 13.607 billion gallons. In addition to E-10, however, some ethanol will be consumed in higher blends, mostly E-85. The EPA has projected E-85 consumption in 2016 at 400 million gallons. That would be equivalent to 296 million gallons of ethanol, assuming an average blend of 74 percent ethanol. Total consumption of conventional ethanol, then, would be projected at 13.903 billion gallons, essentially the same as consumed in 2015. The difference between the RFS requirement of 14.5 billion gallons and the projected consumption of 13.903 billion gallons (597 million gallons) would have to be met with some combination of retirement of RINs stocks, additional quantities of E-85, or blending of additional quantities of advanced biofuels.

If ethanol exports in 2016 are near the level of 2015 and there is no change in the level of ethanol stocks in 2016, the projected level of domestic consumption of conventional ethanol in 2016 points to about the same requirement for conventional ethanol feedstock (mostly corn) in 2016 as in 2015. This outcome is very different from the initial reaction that an increase in the implied conventional ethanol requirement from the preliminary to final rulemaking for 2016 of 500 million gallons would result in a measurable increase in feedstock consumption.

The projected level of domestic conventional ethanol consumption in 2016 developed here could be conservative for two reasons. First, the projection of domestic gasoline consumption appears conservative. A more plausible scenario with continued low gasoline prices might be for gasoline consumption to be about two billion gallons larger than the current EIA projection. Second, the projection of ethanol imports may be too aggressive, depending on how California fuel policy unfolds. On the other hand, the EPA projection of E-85 consumption in 2016 may be a bit too high.

Domestic conventional ethanol consumption in 2016 could be about 200 million gallons larger than projected, requiring an additional 70 million bushels of feedstock. Still, feedstock consumption would be only slightly larger than in 2015. A larger increase in feedstock consumption will require some combination of a larger increase in domestic gasoline consumption, larger consumption of higher ethanol blends, and an increase in ethanol exports.

References

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