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International Data Revisions and the *Short-Term Energy Outlook* Forecast

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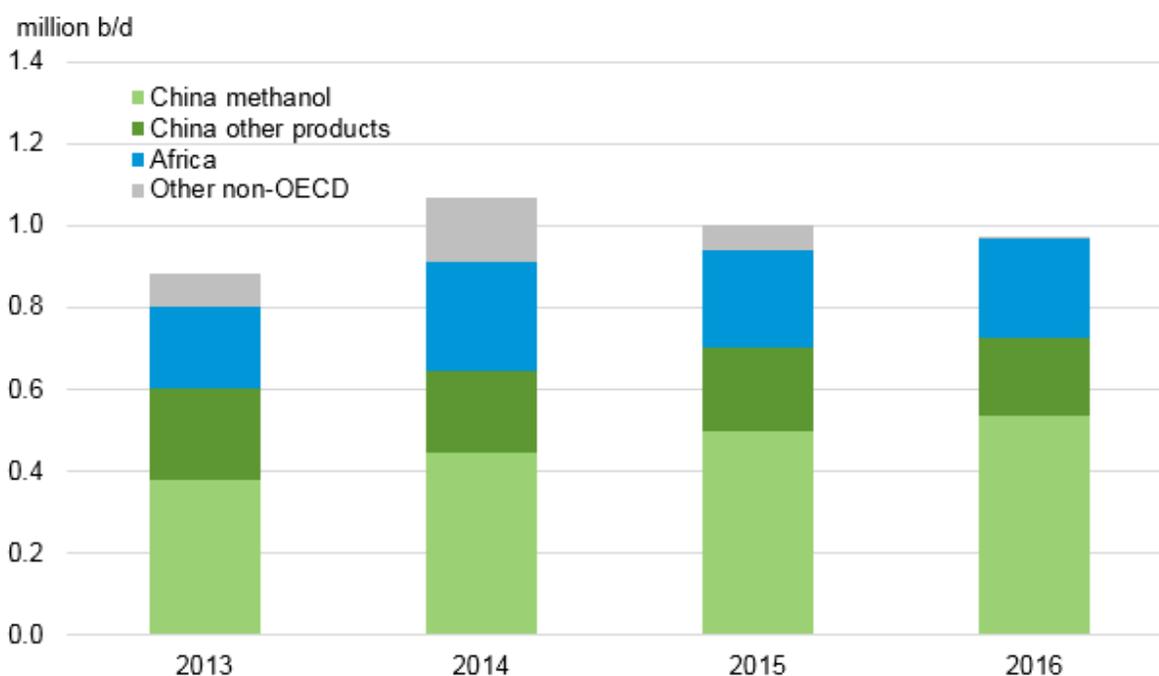
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Overview

Beginning with the February *Short-Term Energy Outlook* (STEO), EIA incorporated revisions to historical international liquids consumption data into the STEO's international liquid fuels market balances. These revisions are carried forward through the STEO forecast balances. After completing a re-assessment of energy use for a broad range of countries for the period 2013-14, EIA updated its historical data, with the largest changes occurring in China and other non-OECD countries, particularly the African region (Figure 1). Changes were driven by an analysis of methanol use in China and the incorporation of more detailed information on the refined product markets in China and other non-OECD countries, which recently became available to EIA (described further in the Other Changes section).

Figure 1. Non-OECD liquid fuels consumption, February STEO versus January STEO, 2013-16



Source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, February 2017.

The main effect of this change on the forecasted STEO liquid fuels market balances is that the higher consumption in 2014 raises the baseline to which the STEO forecast benchmarks. As the assumed annual growth rates for forecast liquid fuels consumption have remained unchanged for 2015-18, the higher baseline 2014 data raises overall consumption through the forecast period. With higher consumption only partially offset by additional production, the implied inventory builds (total global supply minus total global consumption) for 2015 and 2016 are smaller than previously forecast.

In the February STEO, EIA now estimates that global liquid fuels inventories built by an average of 1.8 million barrels per day (b/d) in 2015 and by 0.8 million b/d in 2016. Those estimates are 0.2 million b/d and 0.1 million b/d lower, respectively, than in the January STEO. EIA now estimates the global oil markets will be relatively balanced in 2017 with moderate inventory builds reemerging in 2018, as the

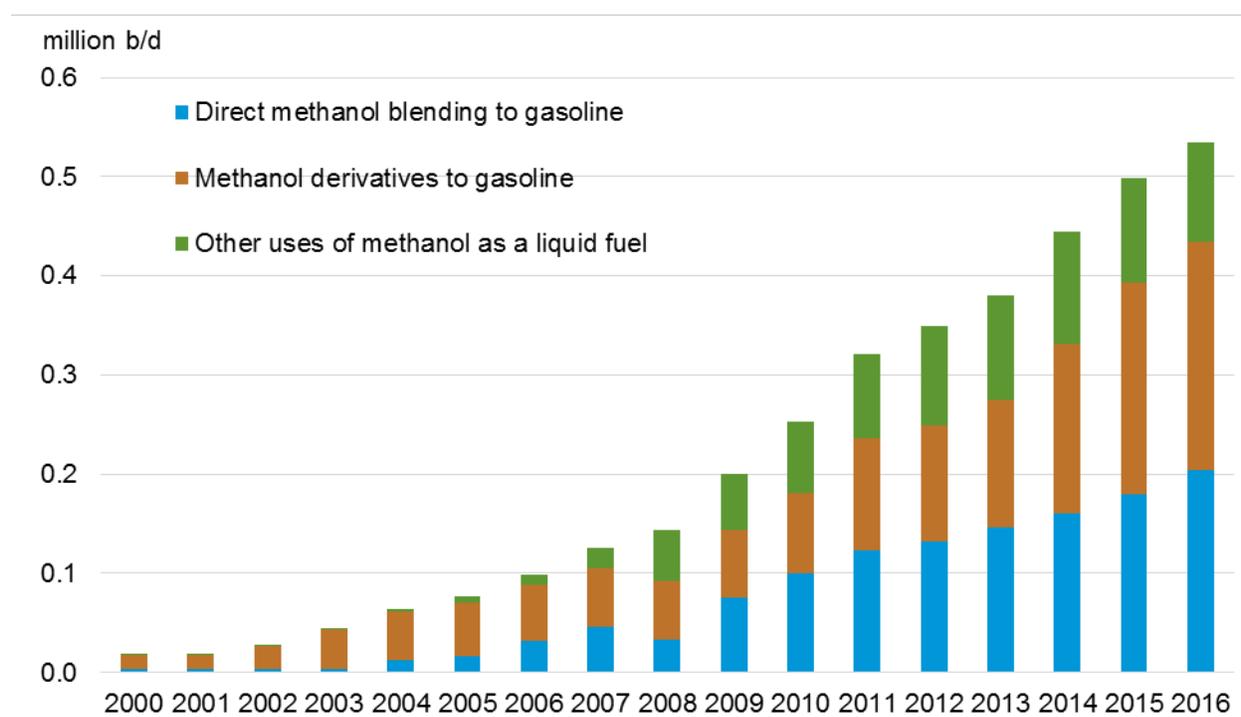
rate of U.S. production growth increases. EIA forecasts implied global inventory draws of 0.1 million b/d in 2017 and a build of 0.2 million b/d in 2018.

Methanol consumption in China

EIA recently completed a re-assessment of energy use in China. This review consisted of a closer look at the refined products markets in China, and also a sectoral analysis of energy use. The sectoral analysis of energy use suggested that previous data for liquid fuel use in China's transportation sector were underestimated. EIA research indicated that part of the reason for the underestimation of transportation sector consumption of liquid fuels stemmed from the use of methanol and its derivatives that were increasingly added into China's gasoline and liquefied petroleum gas (LPG) streams. As a result, EIA commissioned Argus Media group to complete a study to evaluate the energy use of methanol and its derivatives in China. The estimates developed in this study have now been incorporated into EIA's petroleum and other liquids consumption data for China.

The study indicated China's use of methanol for energy and fuel alternatives has increased since 2000 (Figure 2), reaching more than 500,000 b/d in 2016. Methanol is blended into the gasoline pool, either directly or by using a methanol derivative, methyl tertiary butyl ether (MTBE), to increase octane levels. In addition, dimethyl ether (DME), another methanol derivative, is blended into the LPG stream in China as a low-cost substitute and consumed in the domestic LPG cylinder market. To account for these increasing uses of methanol and its derivatives, China's historical liquid fuels consumption has been revised up by the amounts shown in Figure 2.

Figure 2. Annual methanol consumption in China, 2000-16



Source: EIA and Argus Media group, *China Methanol to Energy Study*, January 2017.

Because EIA adjusted data for both historical consumption and supply of methanol, these changes largely did not affect estimates of implied global inventory changes in either history or the forecast. The majority of China's methanol supply uses domestic coal supplies as a feedstock, although natural gas and coking gas are used to lesser extents as feedstocks. Small amounts of Chinese methanol supplies are also imported.

Other changes

In addition to the methanol updates in China, EIA also made upward revisions to historical petroleum liquids consumption for China and Africa from 2013-14, based on closer examinations of refined product markets in these regions using more detailed data sources. As a result of these changes (and the methanol updates in China), 2014 global petroleum liquids consumption is now almost 1.0 million b/d higher than previously estimated.

For China, EIA revised petroleum liquids consumption higher by an average of 210,000 b/d from 2013-14 compared with EIA's previous data. This change was in addition to the methanol adjustments, and was made after EIA received detailed data on Chinese refined product markets from several sources, including China's Energy Statistical Yearbook 2014 and other sources released in 2016.

For Africa, EIA revised petroleum liquids consumption higher by an average of 230,000 b/d from 2013-14 compared with EIA's previous data. Changes to Africa's historical consumption make up the majority of non-OECD changes outside of China, and they were also made after EIA received more granular data on African countries, including the UN Energy Statistics Yearbooks 2013-14 released in 2015-2016.

Unlike the higher methanol consumption in China, the higher levels of Chinese and African refined products consumption were not matched with additional supply. The higher levels of consumption without corresponding supply offsets implies that markets were tighter during the 2010-14 period than previous data indicated. It also implies that estimated inventory builds in 2015 and 2016 were not as large as previously estimated.

Finally, EIA re-estimated seasonal petroleum consumption patterns for China and Saudi Arabia, resulting in changes to forecast seasonal patterns of consumption in those countries that will result in smaller forecast seasonal stock draws and builds. Further re-estimates of seasonality for other regions will be incorporated into subsequent STEO projections.