

Outlook for Biofuel Feedstock Supply

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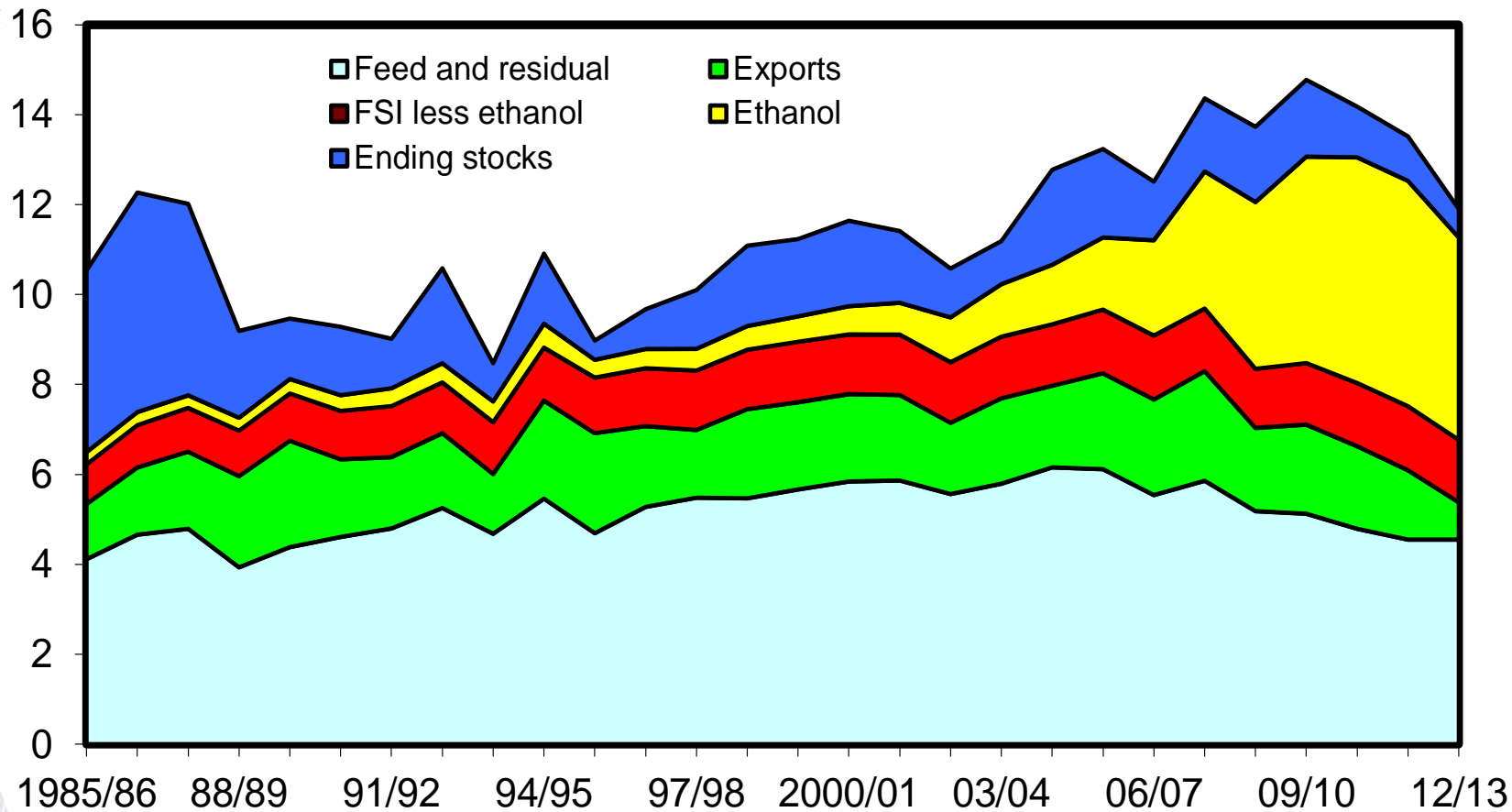
Introduction

- Ethanol is a Major Use for Corn
- The U.S. corn market has been transformed by ethanol.
- This season, projected corn for ethanol, accounts for 40.0% of the total use.
- Feed and residual, historically the leading use for corn, is projected at 40.4%.
- Current tight corn supply is expected to ease in coming years with increased corn production.



U.S. corn utilization

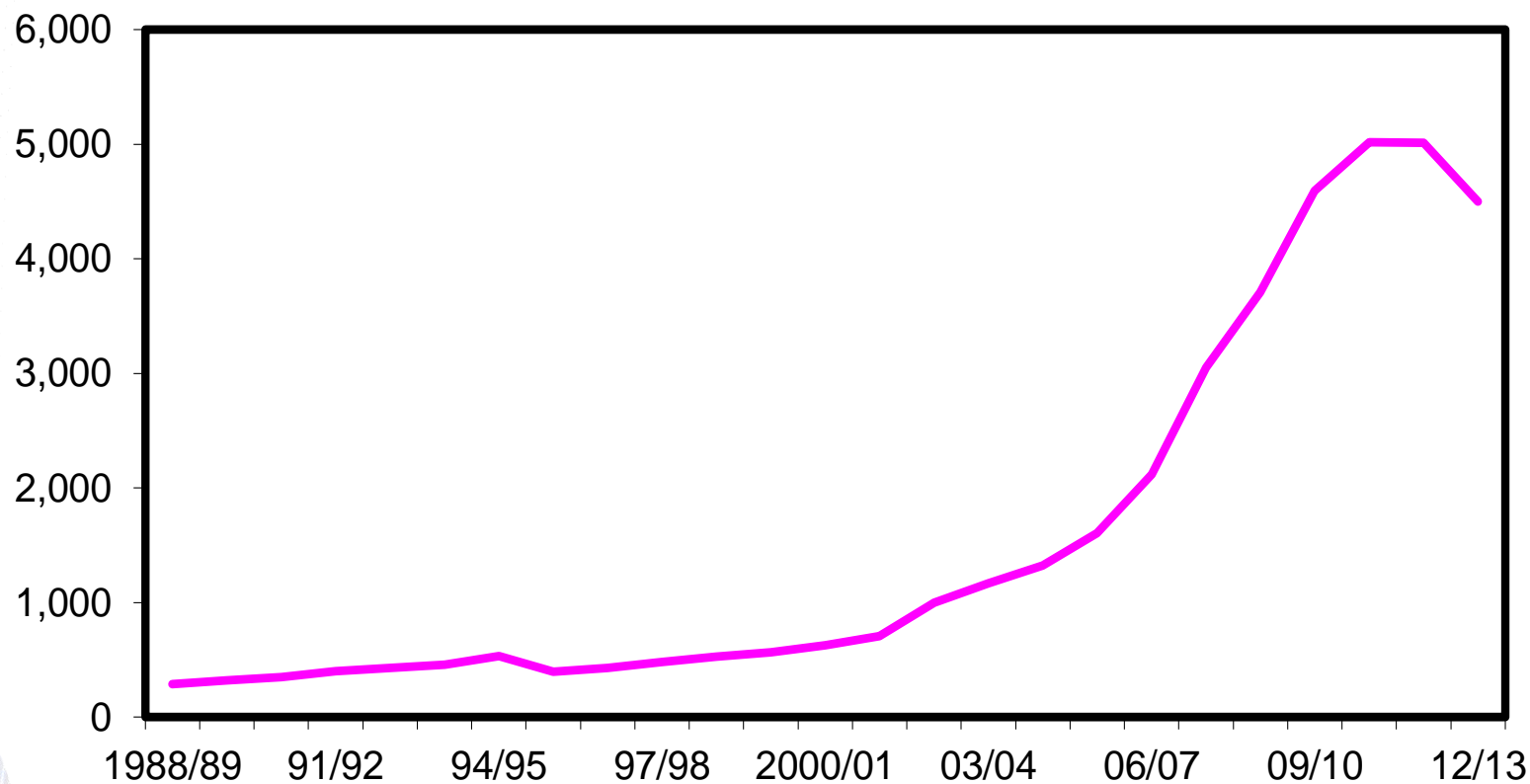
Bil. bu



Source: USDA, World Agricultural Outlook Board, *WASDE*.

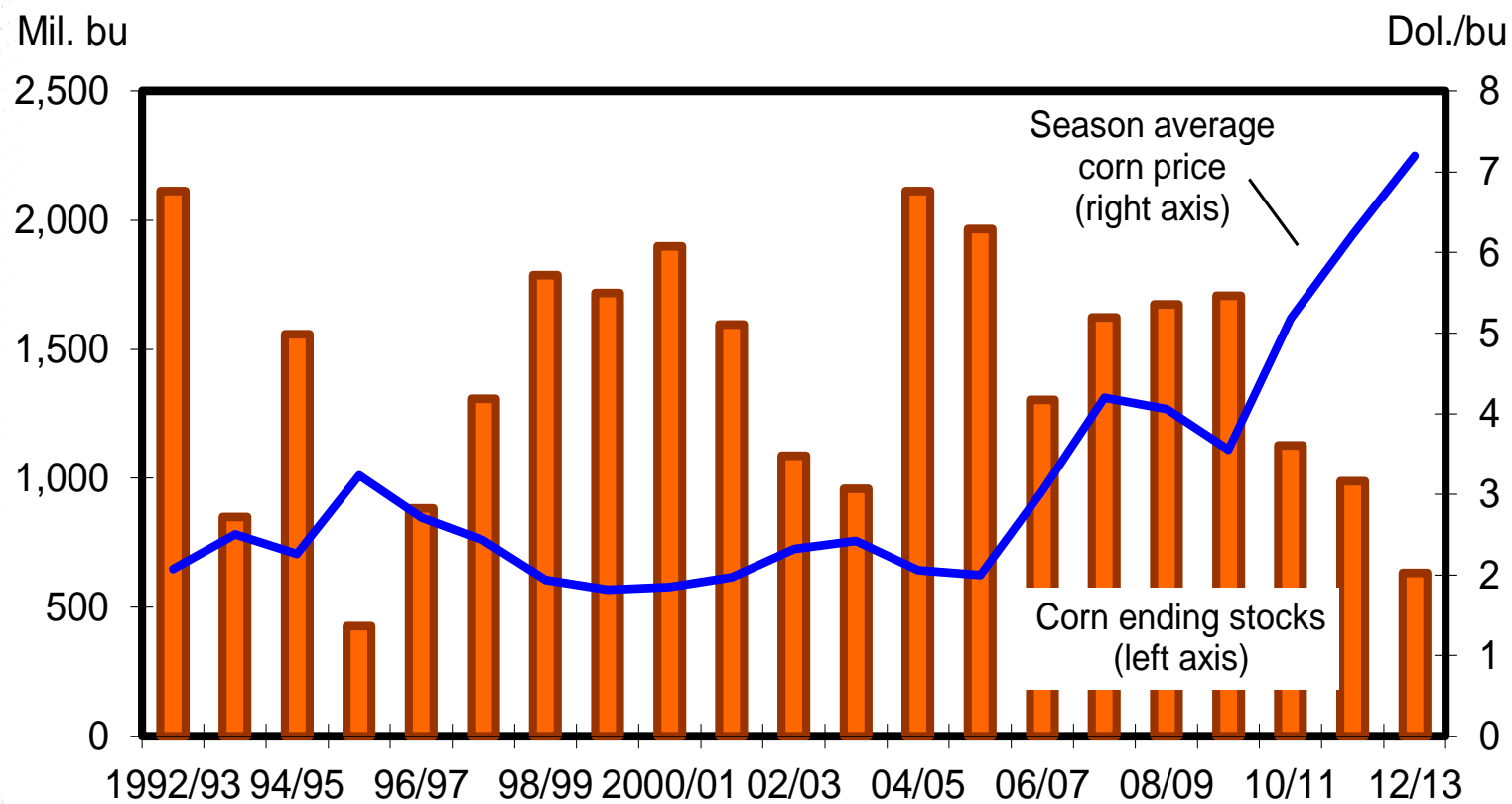
U.S. corn use for ethanol

Mil. bu



Source: USDA, World Agricultural Outlook Board, *WASDE*.

U.S. corn prices reach record highs as stocks remain tight



Source: USDA, World Agricultural Outlook Board, WASDE.

What is the Baseline?

- **10 year annual projections for agriculture**
 - Long-term projections made in conjunction with Department's budget baseline projections
 - Departmental annual long-term projections publication in February
 - Covers major U.S. and international agricultural markets
- **Projections, not forecasts**
 - Conditional, long-run scenario
 - Neutral assumptions for macro, policy, weather
- **Prepared by USDA interagency committees**
 - Composite of models & judgment-based analysis

Baseline Assumptions

- **Neutral assumptions**
 - Normal weather
 - Agricultural policy
 - Continuation of current farm policies
 - Macroeconomic conditions
 - No business cycles



Baseline Coverage

- **Covers major agricultural commodities**
 - Domestic markets
 - Supply, use, and prices
 - International markets and trade
- **Includes aggregate agricultural sector measures**
 - Food prices
 - Farm income
 - Agricultural trade value



USDA Interagency Process

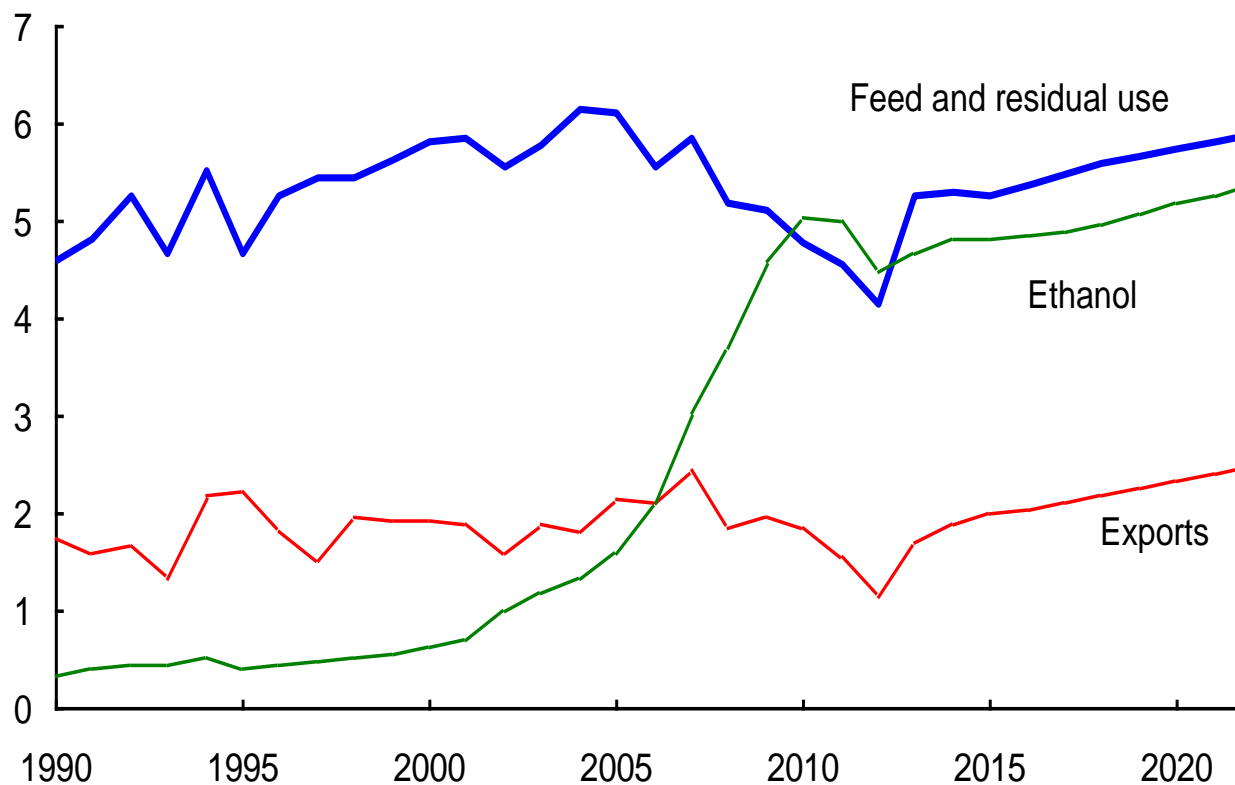
- 12 interagency commodity committees
 - 4 to 5 agencies on each committee
 - Short-term projections, monthly
 - Long-term baseline projections, annually
 - Meetings to reach consensus projections
 - Chaired by the World Agricultural Outlook Board
- Much interaction and flow of information between interagency committees
 - Consistency checks
- Interagency baseline committee
 - 10 agencies
 - Coordinates baseline process
 - Assumptions, review, clearance

Baseline Projection for Corn Impacted by Ethanol Market

- Ethanol production expansion to slow through 2023
 - Reflects declining overall U.S. gasoline consumption
 - Most gas is 10% ethanol blend
- Projection incorporates infrastructural and other growth constraints in the E15 market
 - E85 market is taken into account
- About 35 % of *total* corn use expected to go to ethanol production through 2023.

U.S. corn: Feed and residual use, ethanol, and exports

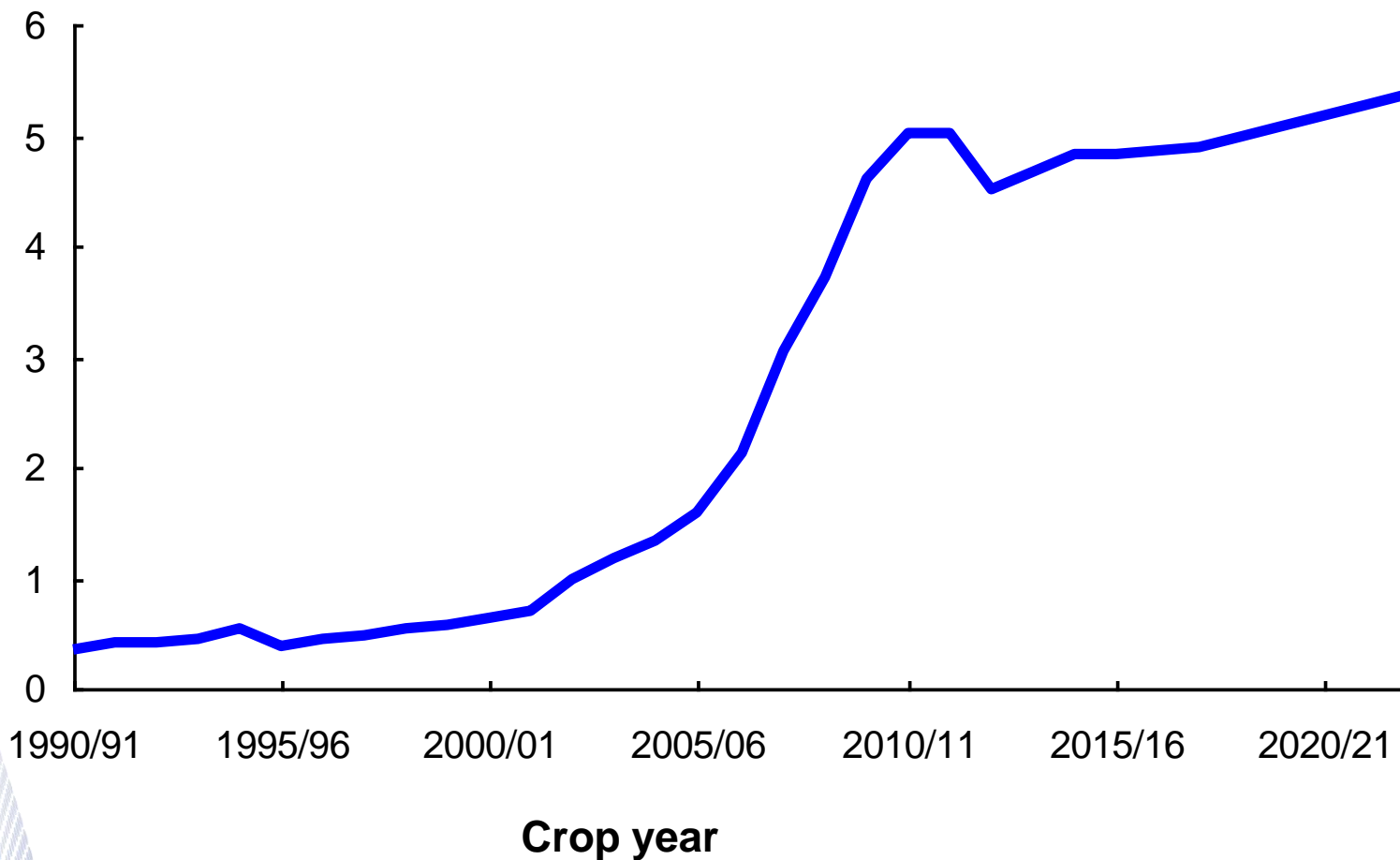
Billion bushels



Source: USDA Agricultural Projections to 2022, February 2013.

U.S. corn use projections: Corn-based ethanol expansion slows

Billion bushels



Source: *USDA Agricultural Projections to 2022*, February 2013.

Soybean Oil Baseline Projection

- Soybean oil used to produce methyl esters (biodiesel) in the United States to grow 6.3 billion pounds by 2023
 - Represents about 29% of total use of U.S. soybean oil
- Forecast production of 800 million gallons of soy-based biodiesel by 2022
- Government mandates spur growth
 - 2013: 1.28 million gallons of biomass-based diesel
 - Renewable Fuel Standard's advanced biofuel mandate (3.75 bil. gal in 2014, 21 bil. gal in 2022).

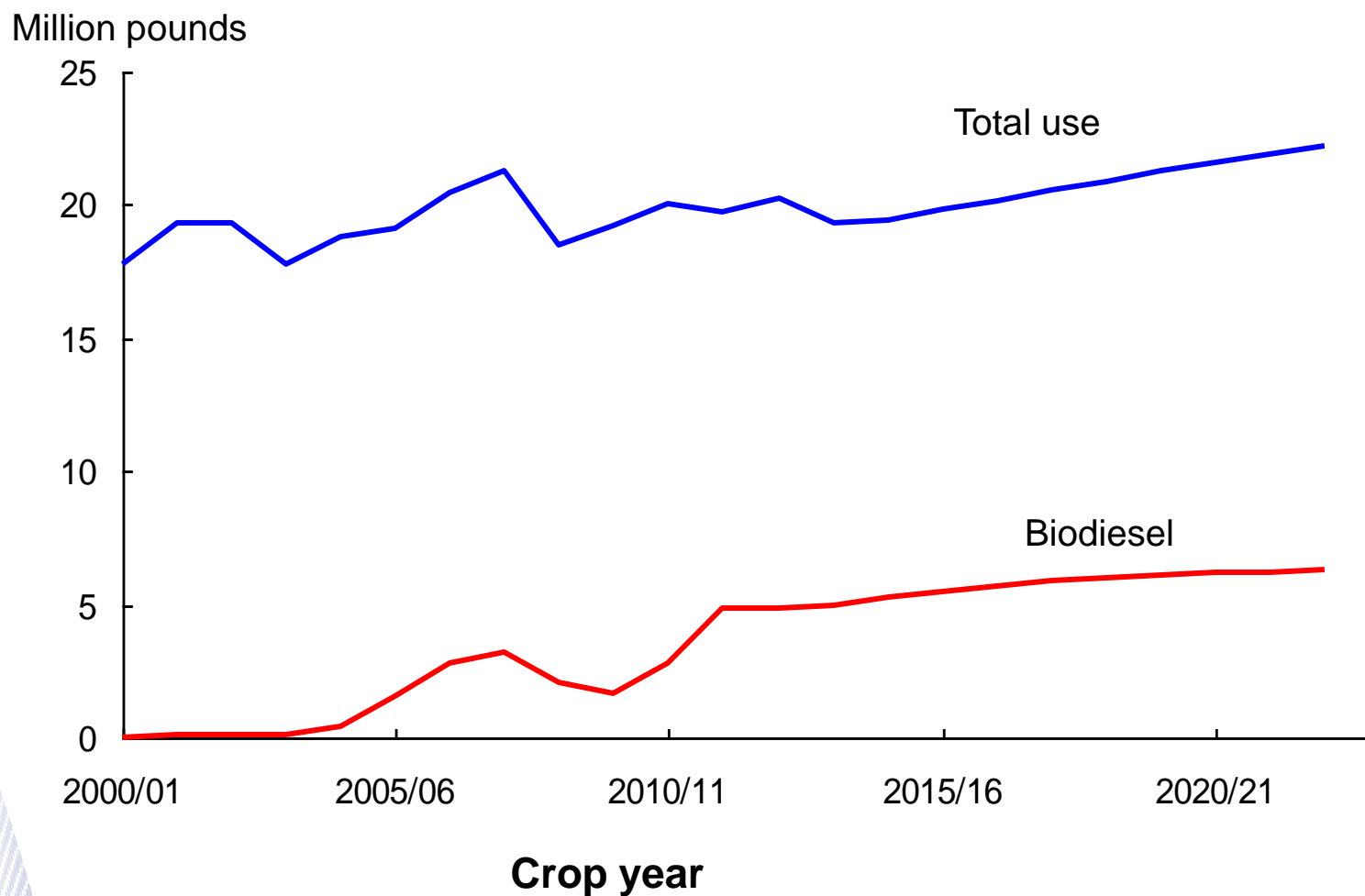


Soybean Oil Baseline Projection

- Corn oil co-products from ethanol plants (including corn oil extracted from distillers grains), other first-use vegetable oils, animal fats, and recycled vegetable oils are also used as feedstocks to produce biodiesel
- Growth in the food use of soybean oil slows as projected imports expand for other vegetable oils



U.S. soybean oil use projections:



Source: USDA Agricultural Projections to 2022, February 2013.

Summary

- Return to normal corn yields will alleviate current tight supplies and ethanol production will rebound.
- Declining gasoline consumption will slow future ethanol expansion.
- Soy-based biodiesel production boosted by mandate.
- Biodiesel will be used to meet advanced mandate.

