

FUELING THE ECONOMY

While the U.S. economy experienced turbulence in 2022, the ethanol industry's financial performance was strong and biorefineries continued to stimulate crucial economic activity in communities across the country. Consumer price inflation was the highest in decades, spurred in part by record gasoline prices that put a damper on fuel demand. However, the ethanol content of gasoline (i.e., the ethanol "blend rate") continued to increase due to its cost-competitiveness and the expanded availability of E15 and flex fuels. And, as international markets also faced high fuel prices and tight supplies, ethanol exports rose sharply. As a result, ethanol production increased to more than 15.4 billion gallons and has now almost rebounded to pre-pandemic levels.

Ethanol industry gross profits remained solid in 2022, as production increased and ethanol prices were roughly 8 percent higher than 2021. Notably, ethanol's wholesale discount to gasoline reached more than \$1 per gallon at times, creating very favorable blending economics for fuel

marketers. Prices of distillers grains and corn oil increased even more sharply amid elevated commodity prices. U.S. ethanol producers processed more than 5.3 billion bushels of corn worth a record \$38 billion, deepening ethanol's role as the most important value-added market for farmers.

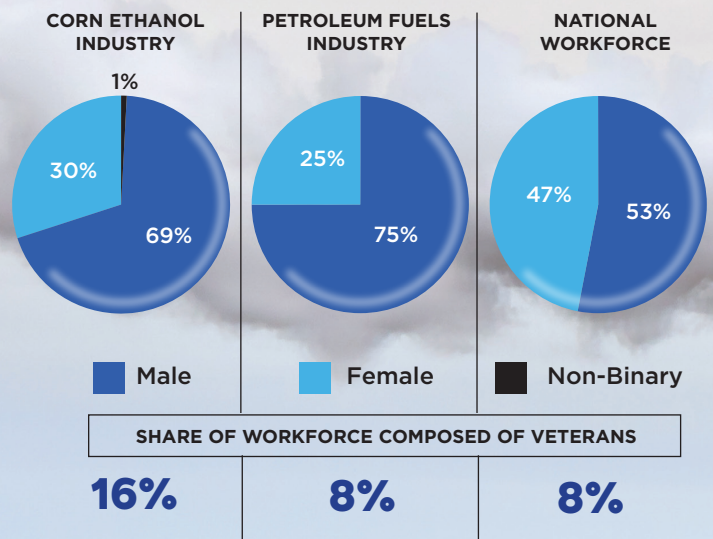
The impact on the national economy went well beyond the direct effects within the ethanol industry and agriculture sector. Ethanol production added over \$57 billion to gross domestic product; supported more than 420,000 direct, indirect and induced jobs; and generated nearly \$35 billion in income for American households. This economic activity resulted in more than \$12 billion in federal, state and local taxes.

Ethanol and the 2022 Economy

Direct Jobs 78,802
Indirect/Induced Jobs 342,876
Household Income \$34.8 billion
GDP Contribution \$57 billion

Source: ABF Economics LLP

WORKFORCE DEMOGRAPHICS



Source: U.S. Dept. of Energy data



Going forward, the industry is poised to contribute even more to the economy, given the robust Renewable Fuel Standard volume requirements proposed for 2023-2025, the implementation of the Inflation Reduction Act, plans by more retailers to offer E15, and the emergence of promising new uses such as sustainable aviation fuel and green chemicals.

Ethanol's Value-Added Proposition

Based on average prices and product yields in 2022, a typical dry-mill ethanol plant was adding approximately **\$2.44** of additional value—or **34%**—to every bushel of corn processed.

Corn Cost per Bushel

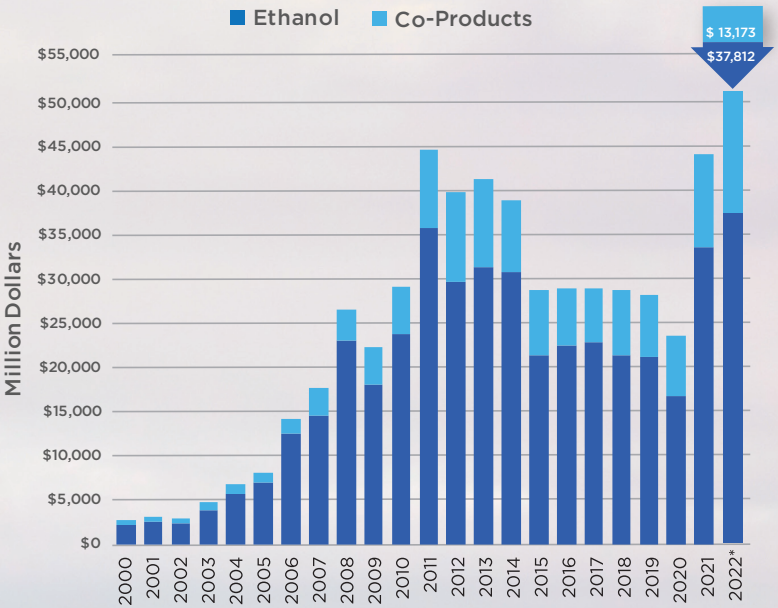
\$ 7.15



Value of Outputs per Bushel	
Ethanol	\$ 7.10
Distillers Grains	\$ 1.85
Corn Distillers Oil	\$ 0.64
TOTAL	\$ 9.59

Estimate based on Jan.-Oct. 2022 data

GROSS VALUE OF U.S. ETHANOL INDUSTRY OUTPUT



Source: RFA based on U.S. Energy Information Admin. and U.S. Dept. of Agriculture data *Forecast

