



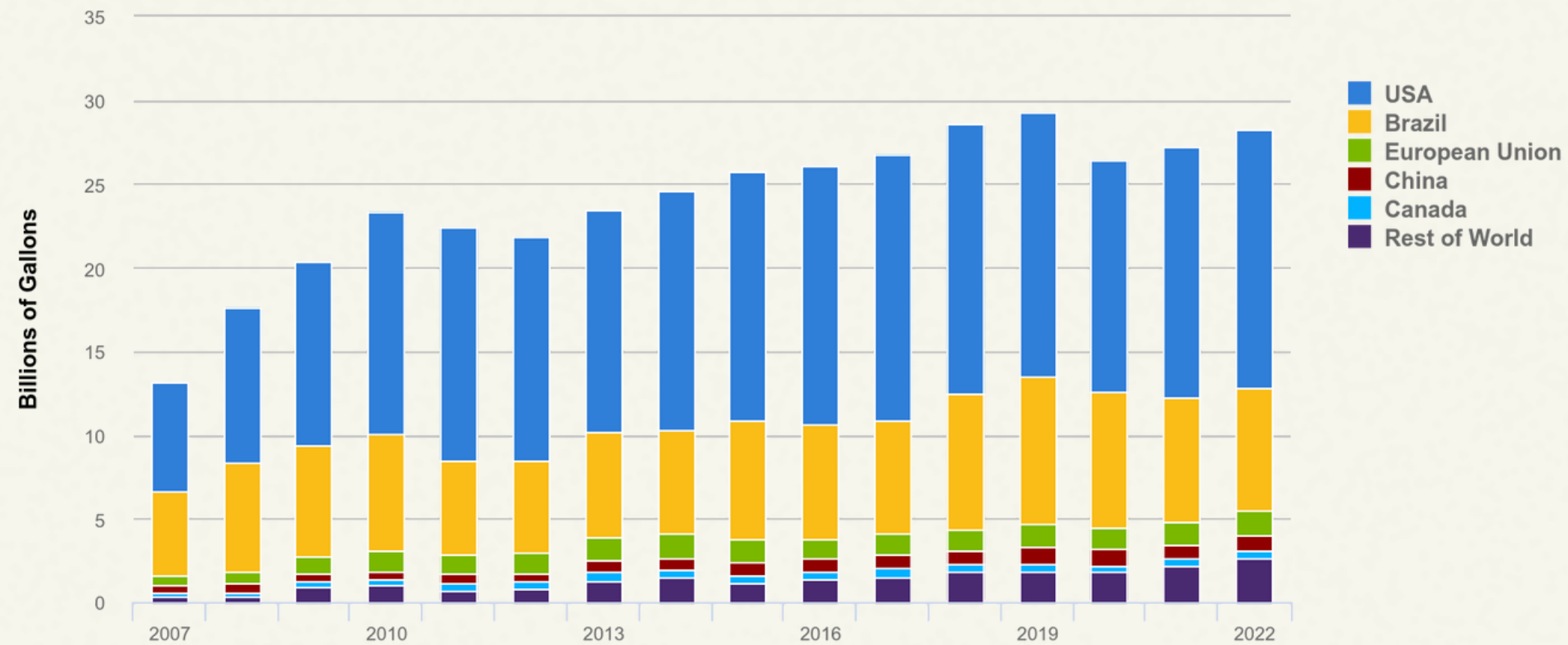
# ECO GRAINS

Sustainable BioEnergy Solutions

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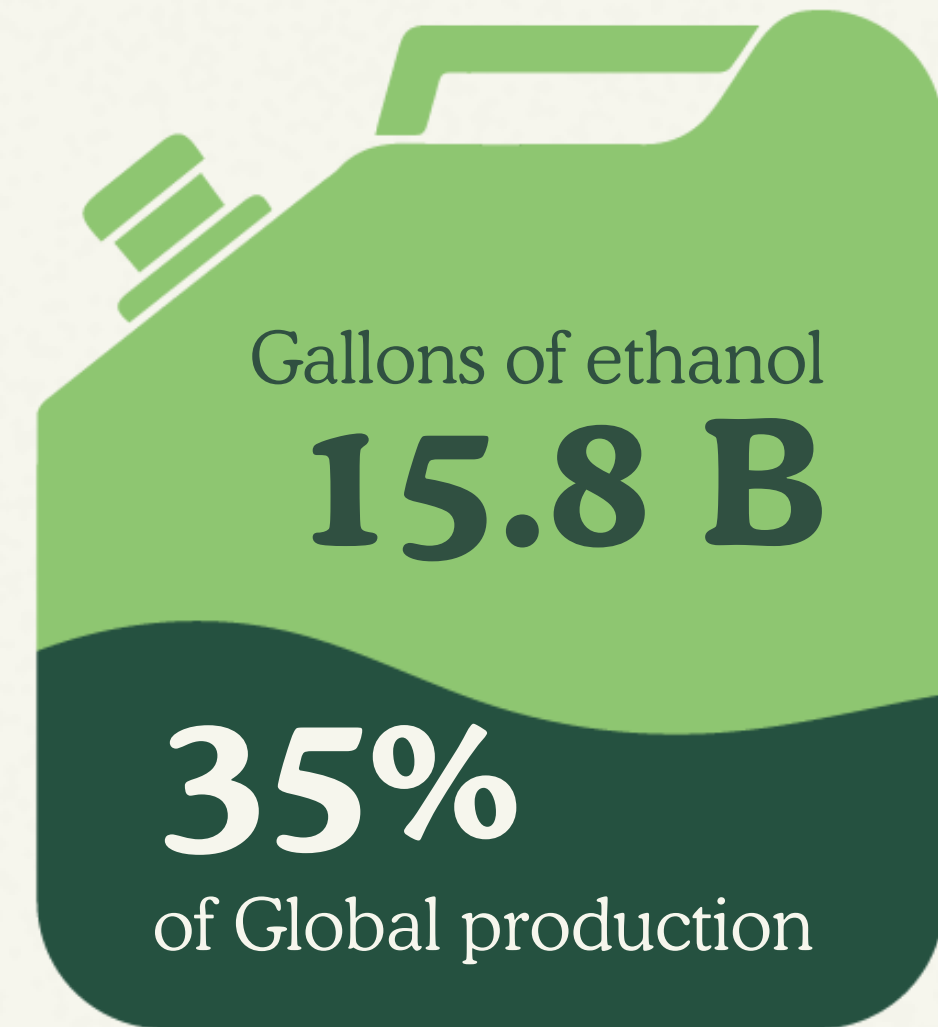
# The US is the leading producer of Ethanol globally

## Global Ethanol Production by Country

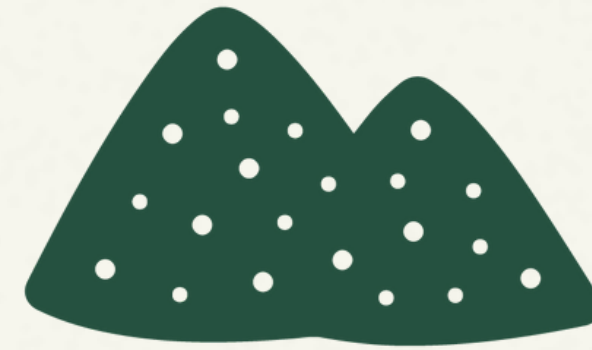
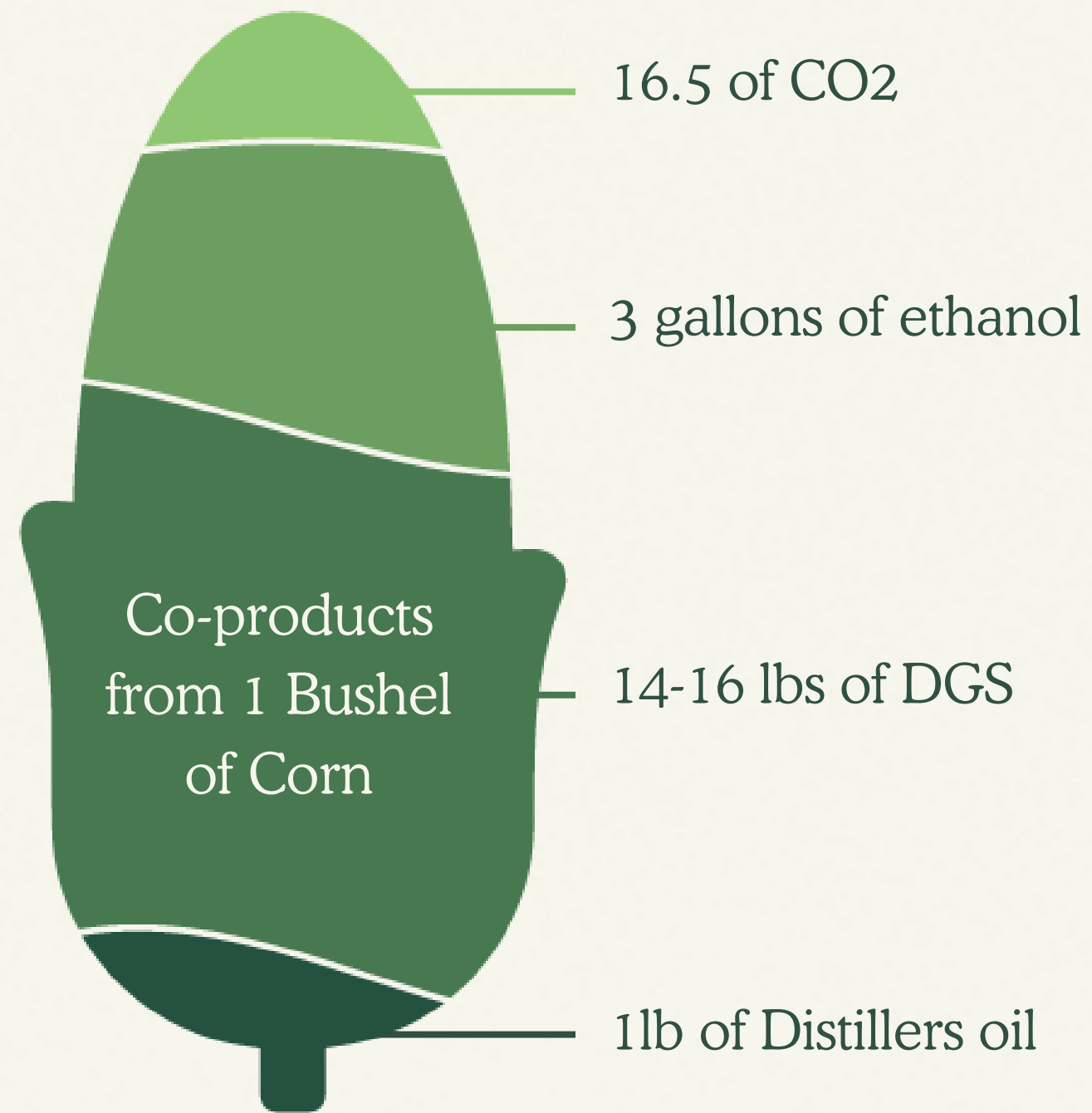


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## US Ethanol Production



# DDGS is an important co-product of Ethanol production



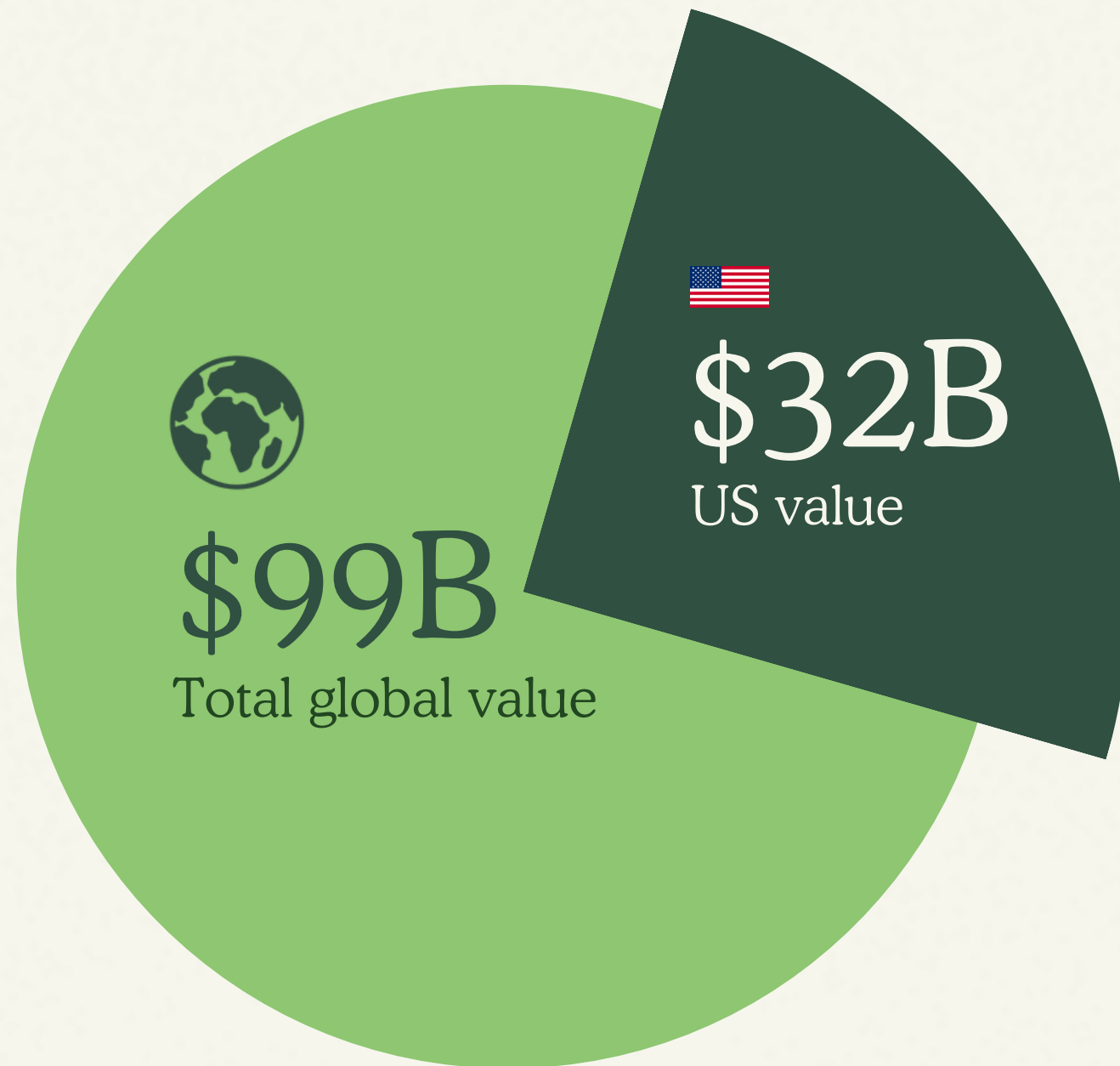
USA produced 38MT of DDGS (54% of global)



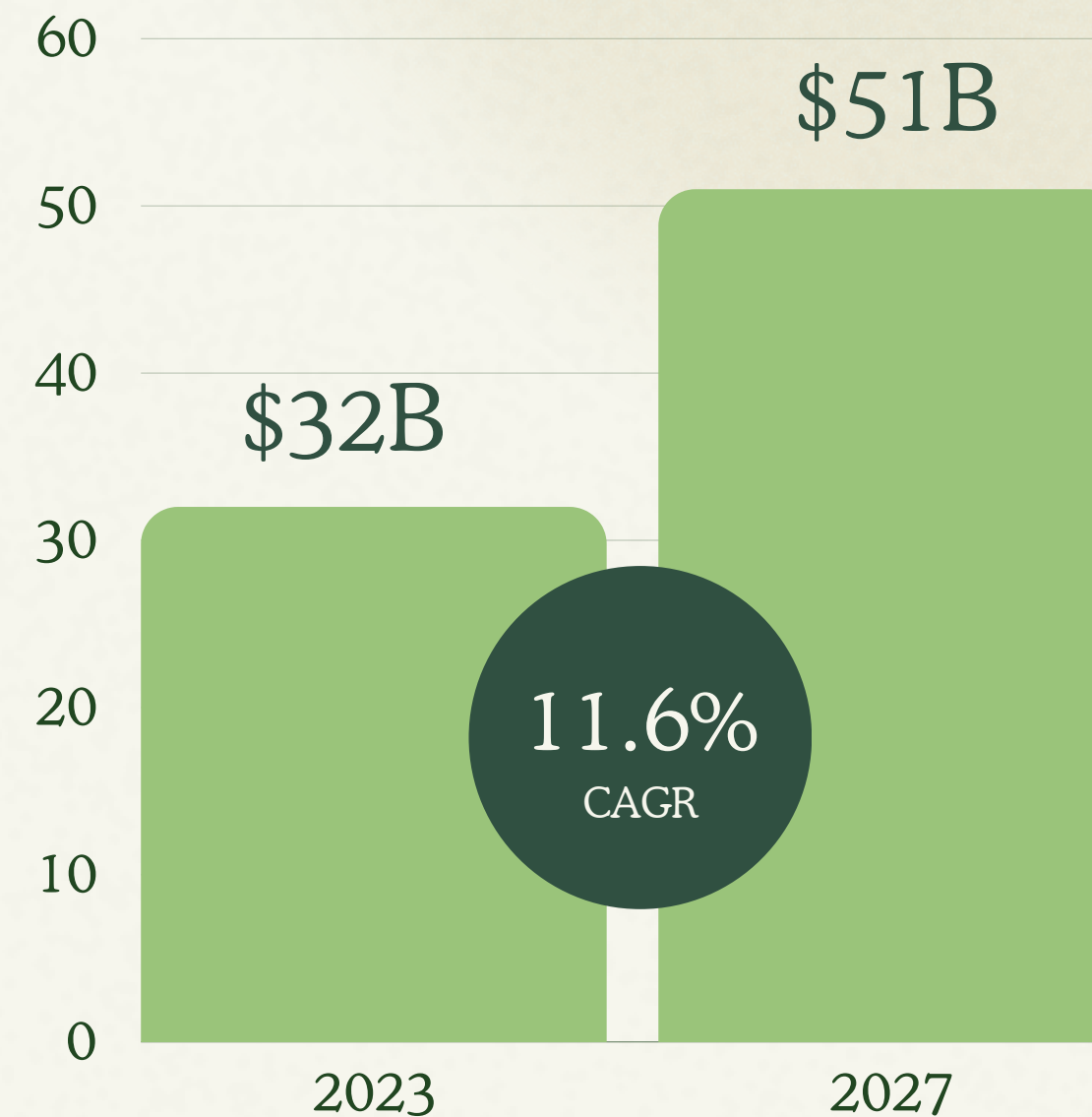
DDGS is primarily used as high-protein livestock feed

# Global Bioethanol market to reach \$157B by 2027

## Production Contribution (2023)



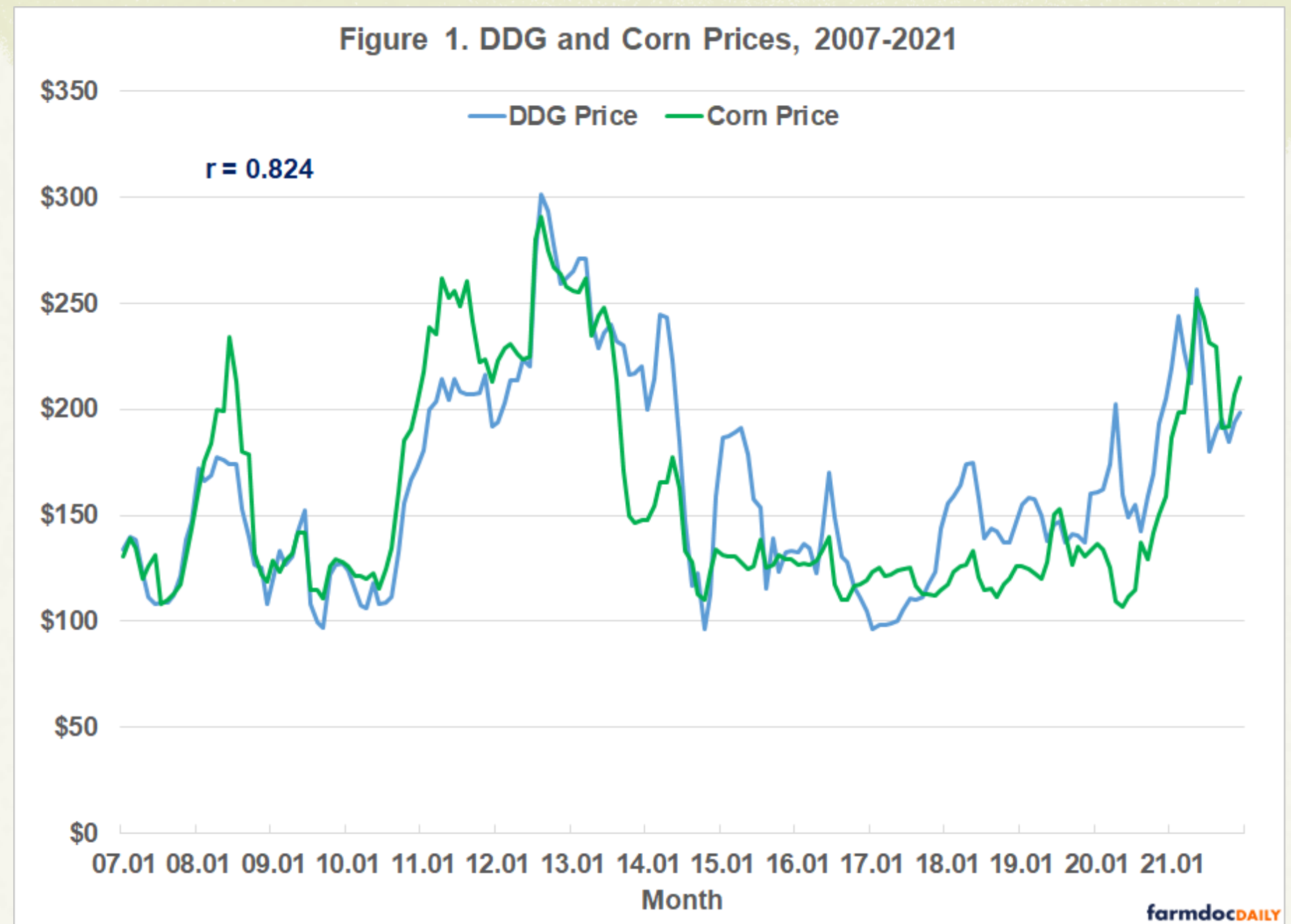
## US Market growth 2023 - 2027



# DDGS market remains volatile amid rising production

After performing a statistical analysis, we were able to determine that the variability in metric tons of ethanol explains **93.74% of the variability in metric tons of DDGS**

Thus, DDGS production in the US is expected to increase along with ethanol production as there is an increased interest in aviation fuels.



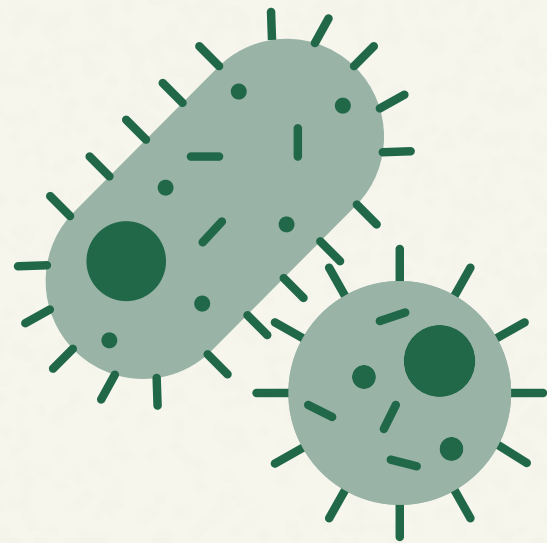
Prices of DGS and corn from 2007 to 2021

DGS is  
currently  
**undervalued**  
and  
**underutilized**  
in the US



# Our proposed technology - reimagining DGS utilization

Sandia National Labs developed a patented technology that is optimized for **simultaneously converting both the sugar and protein fractions of Distiller's Grains (DGS) into fusel alcohols.**



**Genetically engineered**  
a two-strain E. coli co-  
culture system



The **three-step process** involves acid pretreatment, 52 hour fermentation with the E. coli co-culture system, and centrifuging to separate out the fusel alcohol mixture.

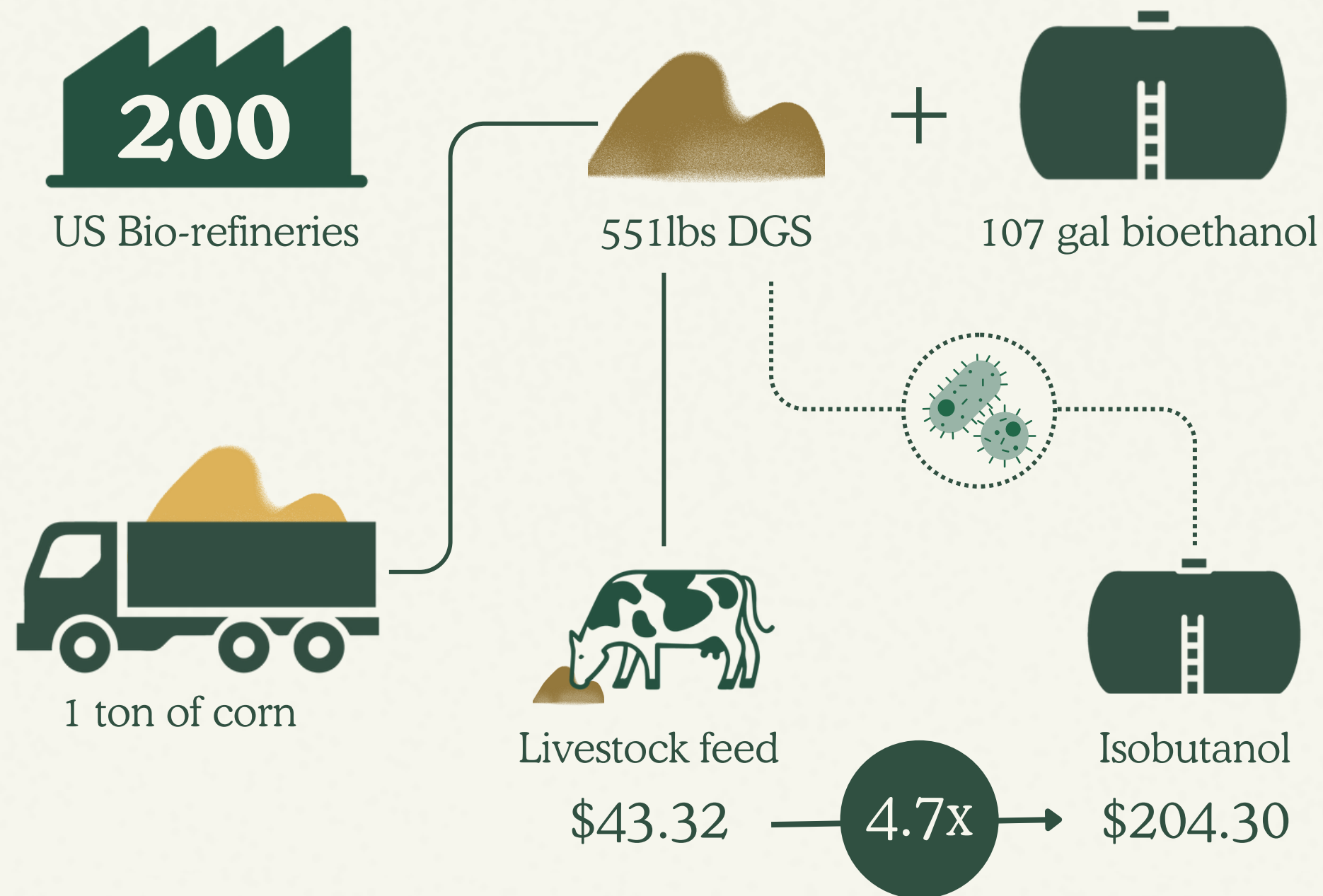


**more fuel products** can be produced from the same amount of corn

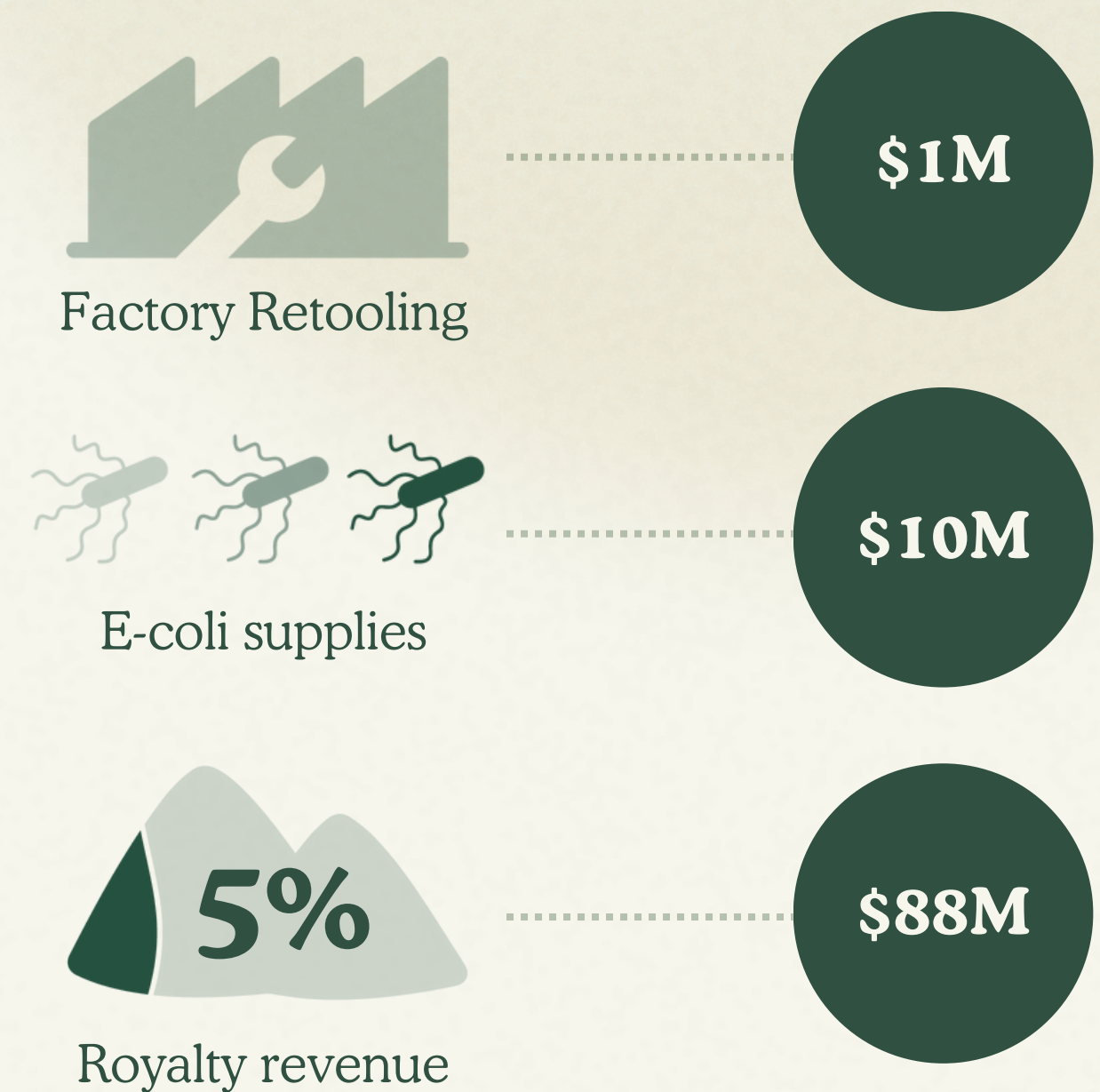
This one-pot method makes the bioethanol process **more economically feasible** by converting low-value animal feed into high-value biofuels.

# EcoGrains is unlocking 371% more revenue from DDGS

## Current value chain + Ecograins

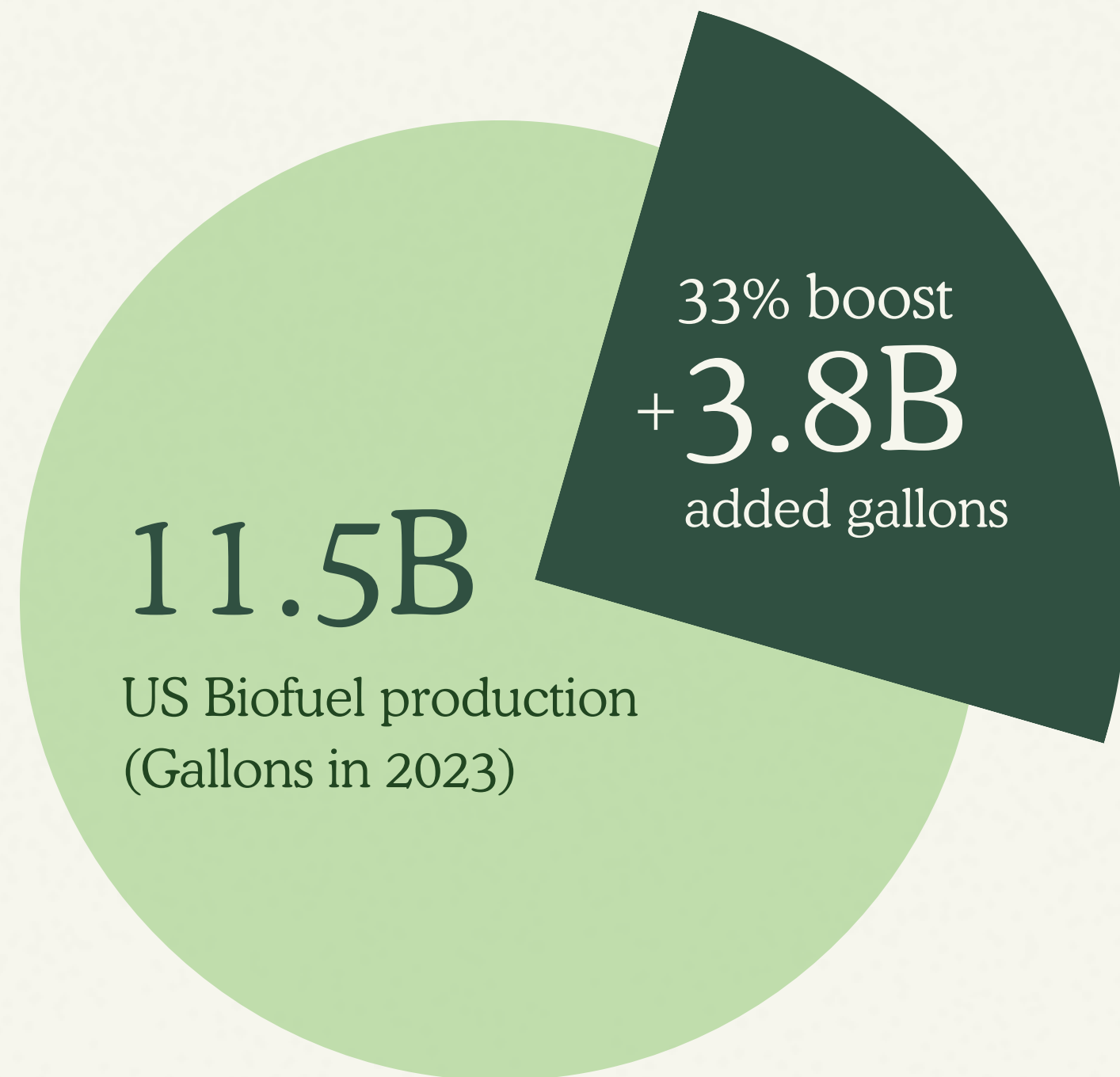


## EcoGrains channels and Revenues



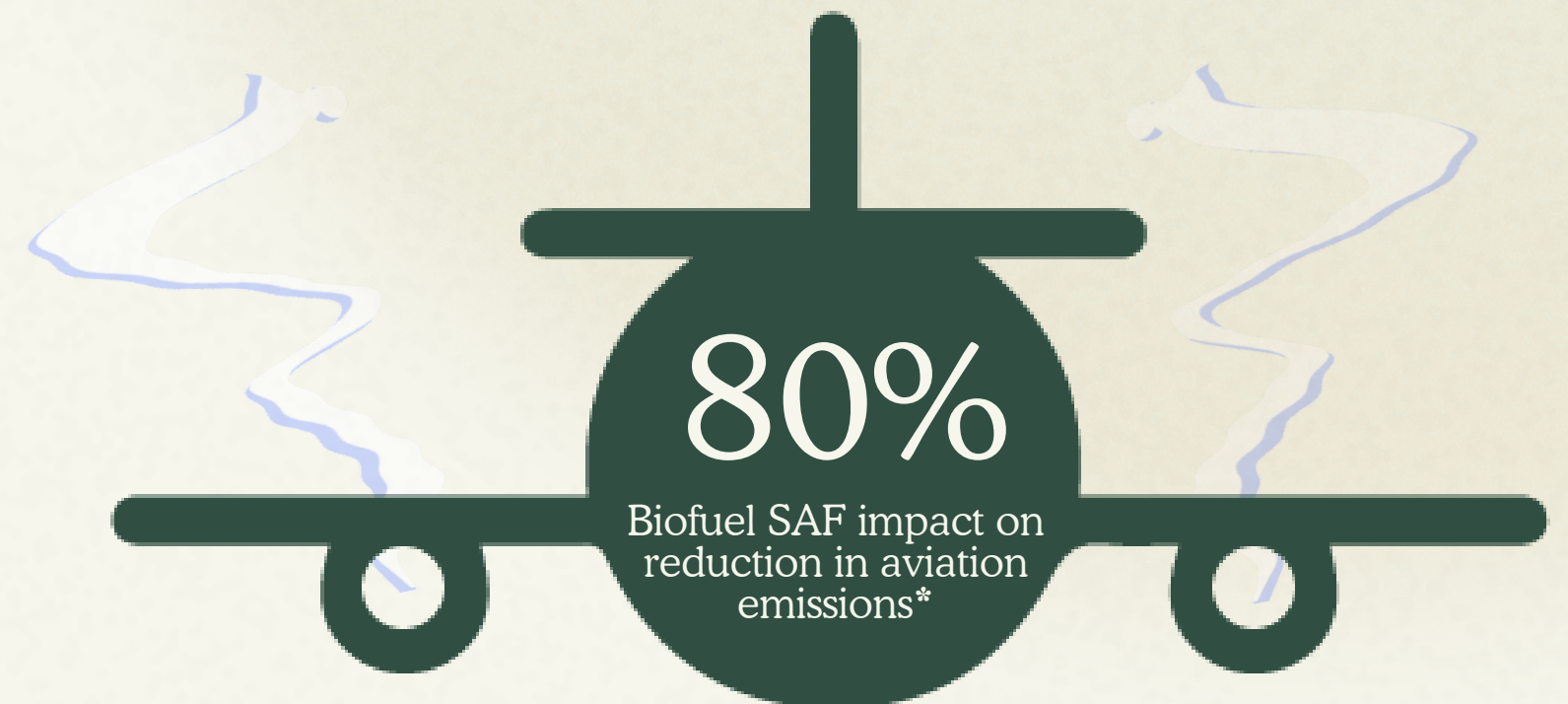
A Force for Good

## EcoGrains will boost US biofuel cost competitiveness



A Force for Good

## Boosting greener Sustainable Aviation Fuels (SAF)



Isopentanol, when used as a component in aviation fuels or as a standalone SAF, can help reduce GHG (greenhouse gas) emissions compared to conventional jet fuels.

# Next steps for EcoGrains



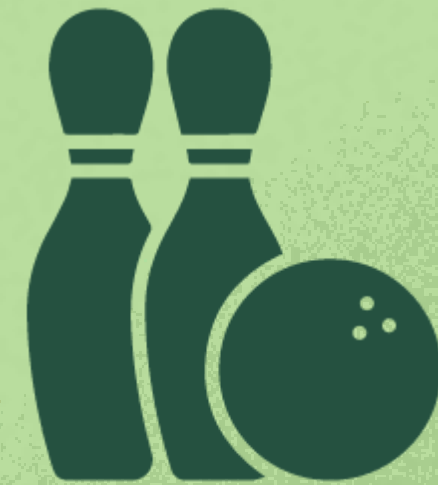
## Funding

Acquire funding to help move from lab to industrial scale testing for potential implementation



## Partnerships

Acquire partnerships with Biorefineries to add to portfolio and license technology



## Secondary markets

Following MVP units and initial pilot program, move to secondary markets by partnering with small batch distilleries.