U.S. Ethanol Fall 2022 Perspectives

September 2022

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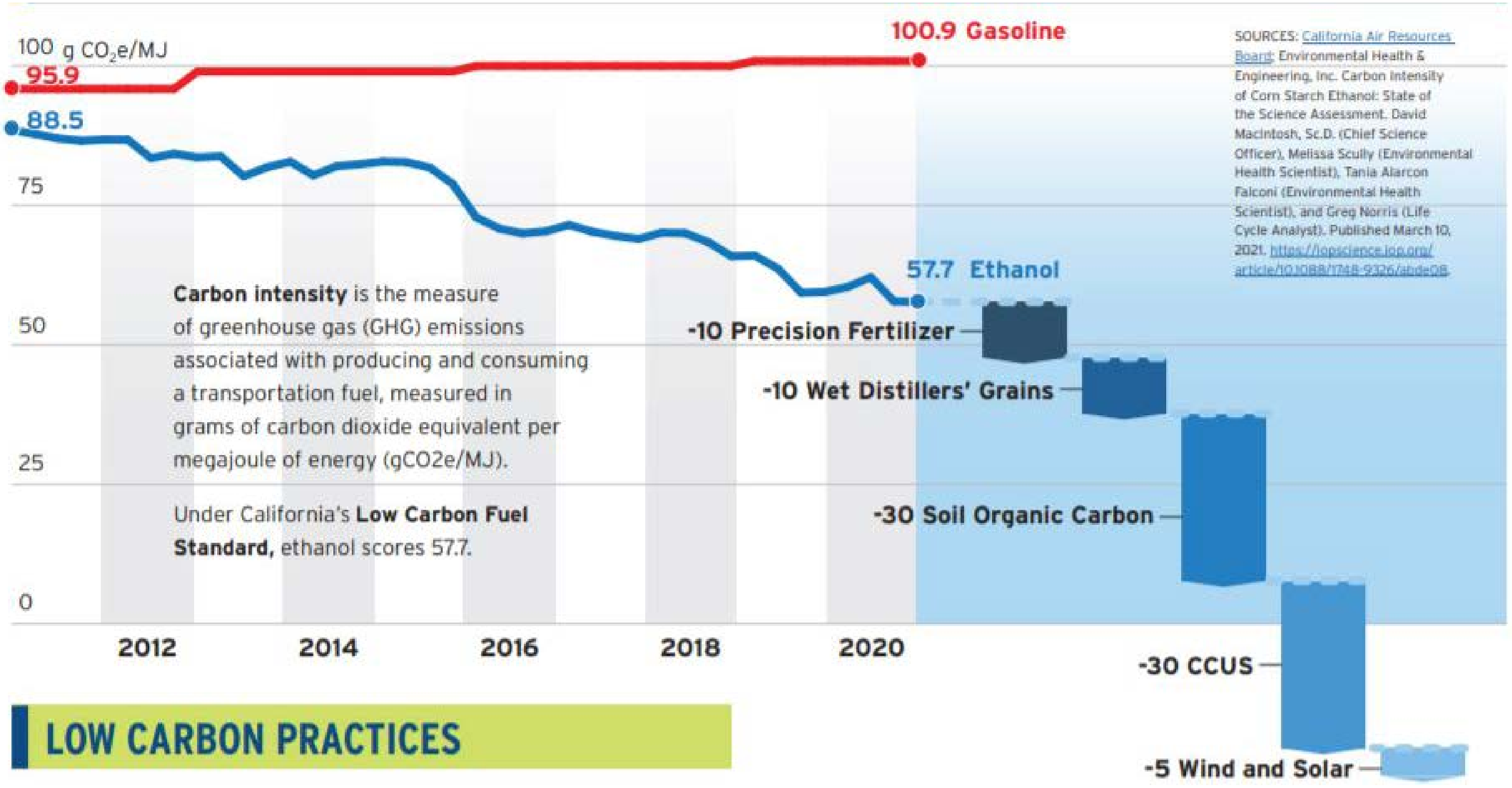
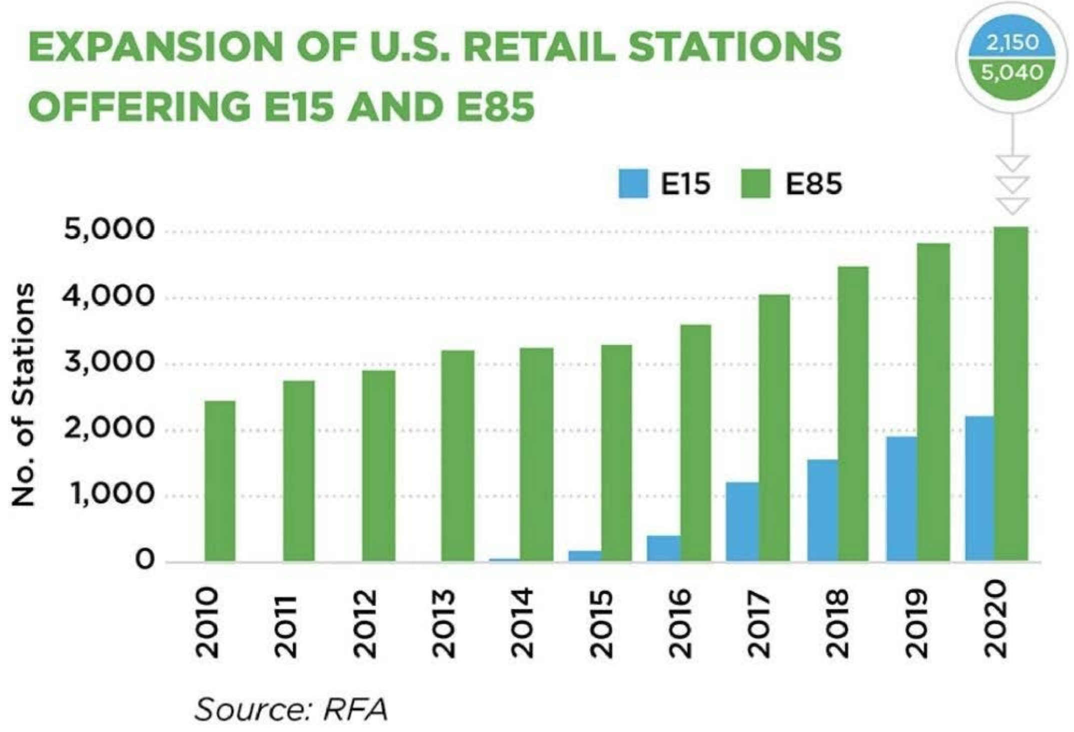
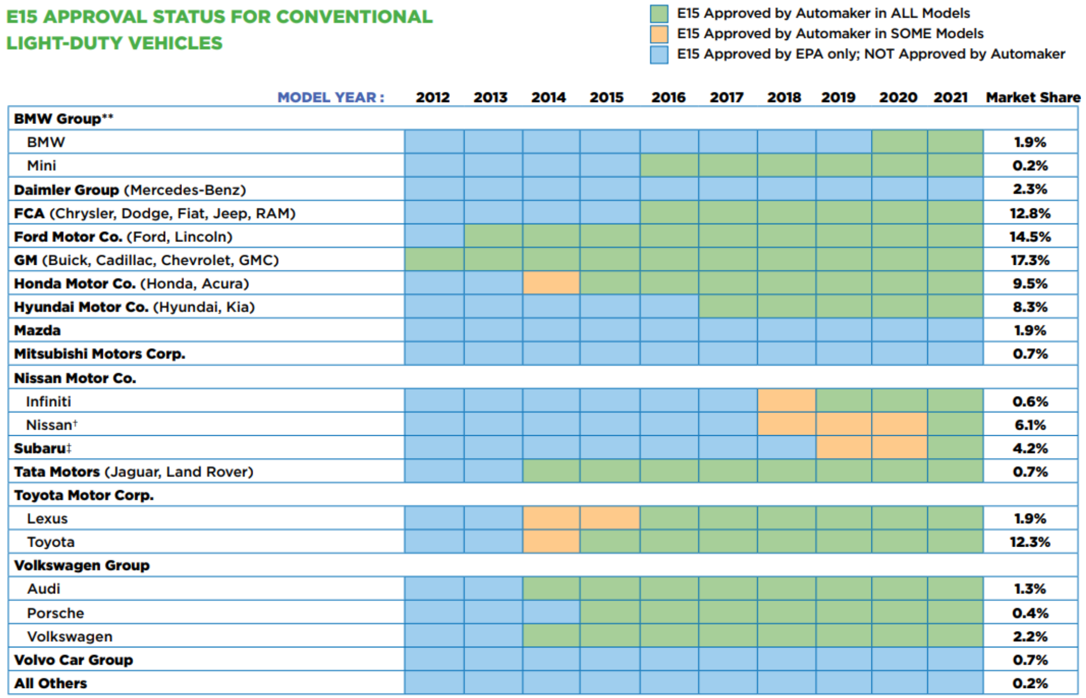
Carbon Intensity of Ethanol Continues to Approach Net Zero

- Average **44-52% lower** CI than gasoline.
- **~57%** in CA market
- Continued improvements in plant efficiency and farming practices to reach **70%** by 2030 and **100%** by 2050



Growing Adoption of Higher Ethanol Blended Fuels





- Increased number of stations providing E15 since 2014
- E15 is approved by in all U.S. vehicles 2001 or newer.
- Biden Admin’s decision to expand sales of E15 in summer months to combat prices at the pump.

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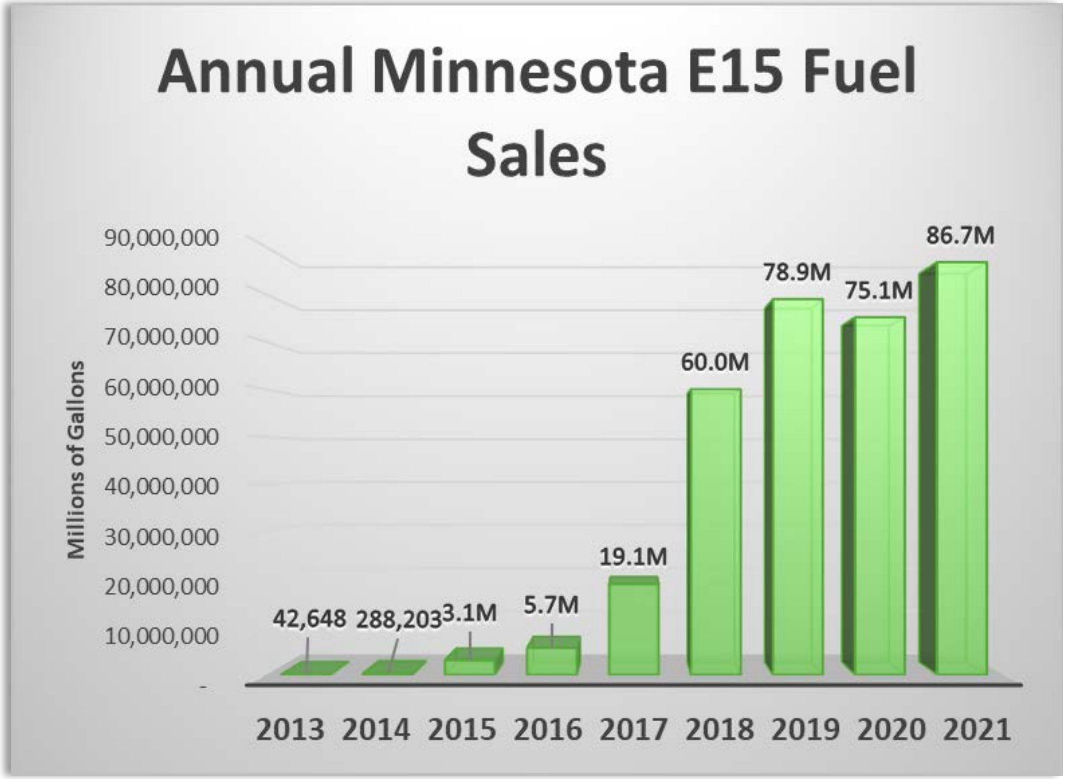
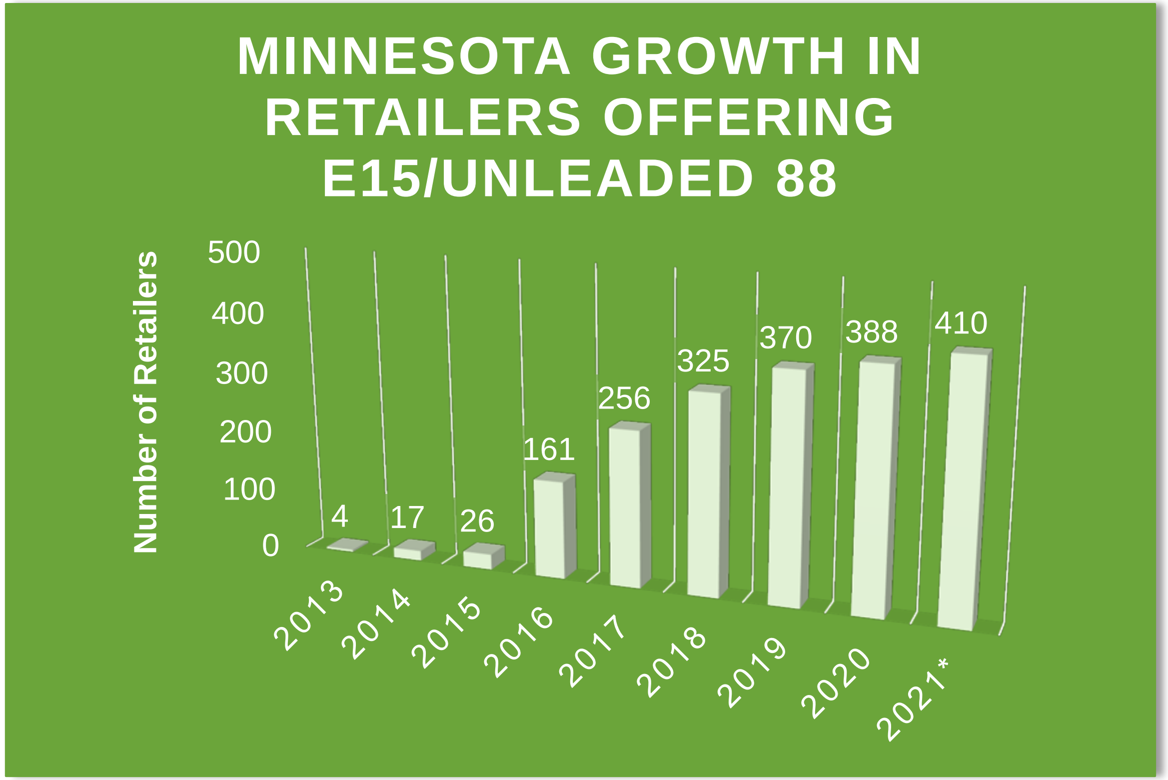
State Case: Growing E15 Use in Minnesota





Station growth reflects higher sales

Biden's SAF Grand Challenge Begins

BRIEFING ROOM

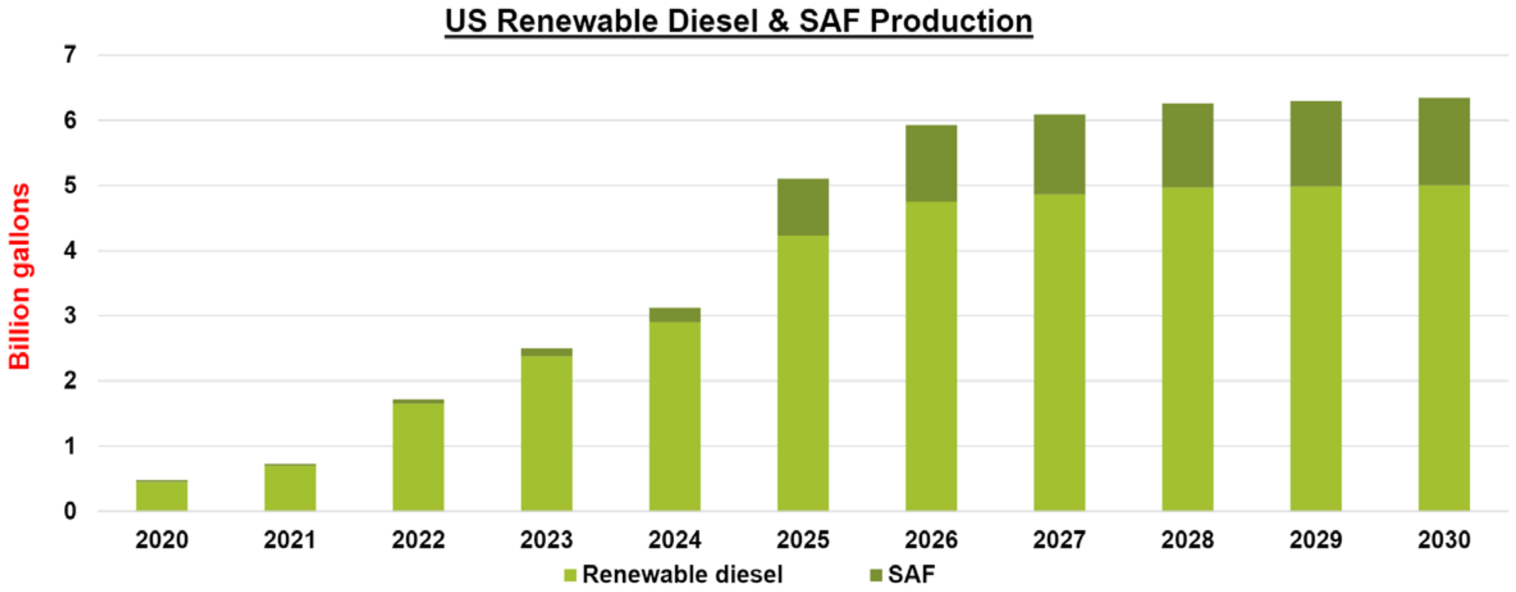
FACT SHEET: Biden Administration Advances the Future of Sustainable Fuels in American Aviation

SEPTEMBER 09, 2021 • STATEMENTS AND RELEASES

- Produce **3 billion gallons** of SAF by 2030
- Reduce aviation emissions **20%** by 2030
- Achieve **50%** GHG emission reduction compared to traditional jet fuel
- Meet **100%** of aviation fuel demand by 2050 (~35 Bgal)

Corn ethanol approved as feedstock in ATJ & ETJ pathways

Sustainable Aviation Fuels Take Flight



Source: S&P Global Commodity Insights

U.S. Inflation Reduction Act includes credit for SAF production – but is it enough?

- U.S. Jet Demand (2021) ~26 Bgal
- U.S. SAF Production (2021) ~ 5 Mgal

Barriers:

- Feedstock
  - Availability & cost
- Financial incentives
  - Credits & RD competition
- No enforceable policy

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Thank you

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