# The U.S. Ethanol Experience:
# A Brief History

**Geoff Cooper**
**President and CEO**

**Global Ethanol Summit**
**October 20, 2025**

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# About the Renewable Fuels Association (RFA)

- **“The Voice of the Ethanol Industry”**
- Trade association representing **U.S. ethanol producers**, vendors, suppliers, service providers, and other market participants.
- **Mission**: “Drive growth in sustainable renewable fuels and bioproducts for a better future.”
- Founded in **1981**.
- Work with all aspects of the supply chain on **policy**, **regulatory**, **technical**, **public awareness**, and **market development** issues.
- Offices in St. Louis, MO & Washington, DC

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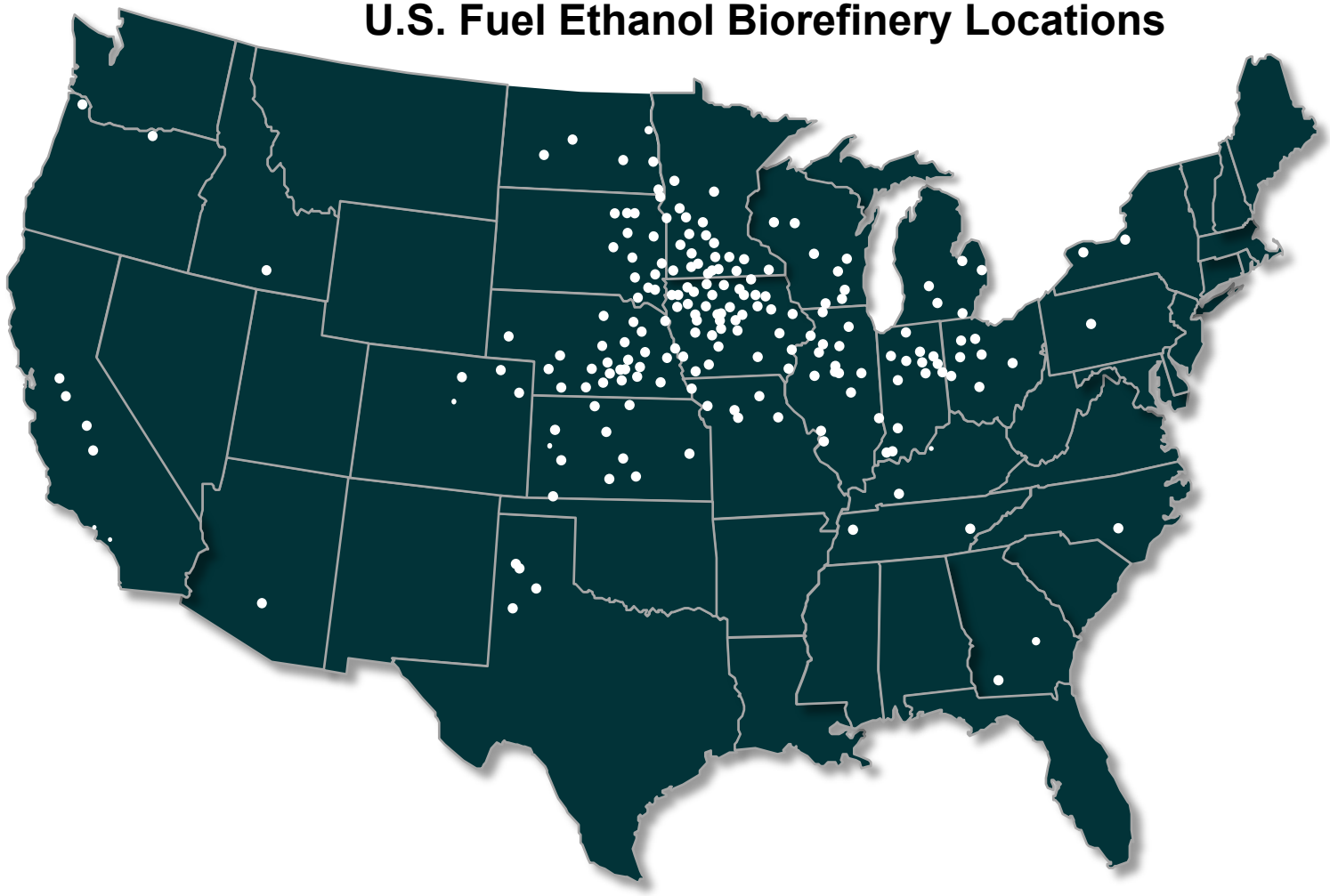
# Today's U.S. Ethanol Industry

**U.S. Fuel Ethanol Biorefinery Locations**



- **199** biorefineries in **24** states
- **18.3 billion gallons** of annual production capacity
- Proven sustained operating rate of **17.1 billion gallons** annualized*
- Nationwide storage and distribution infrastructure

*November 2024


Installed plant locations as of March 2024

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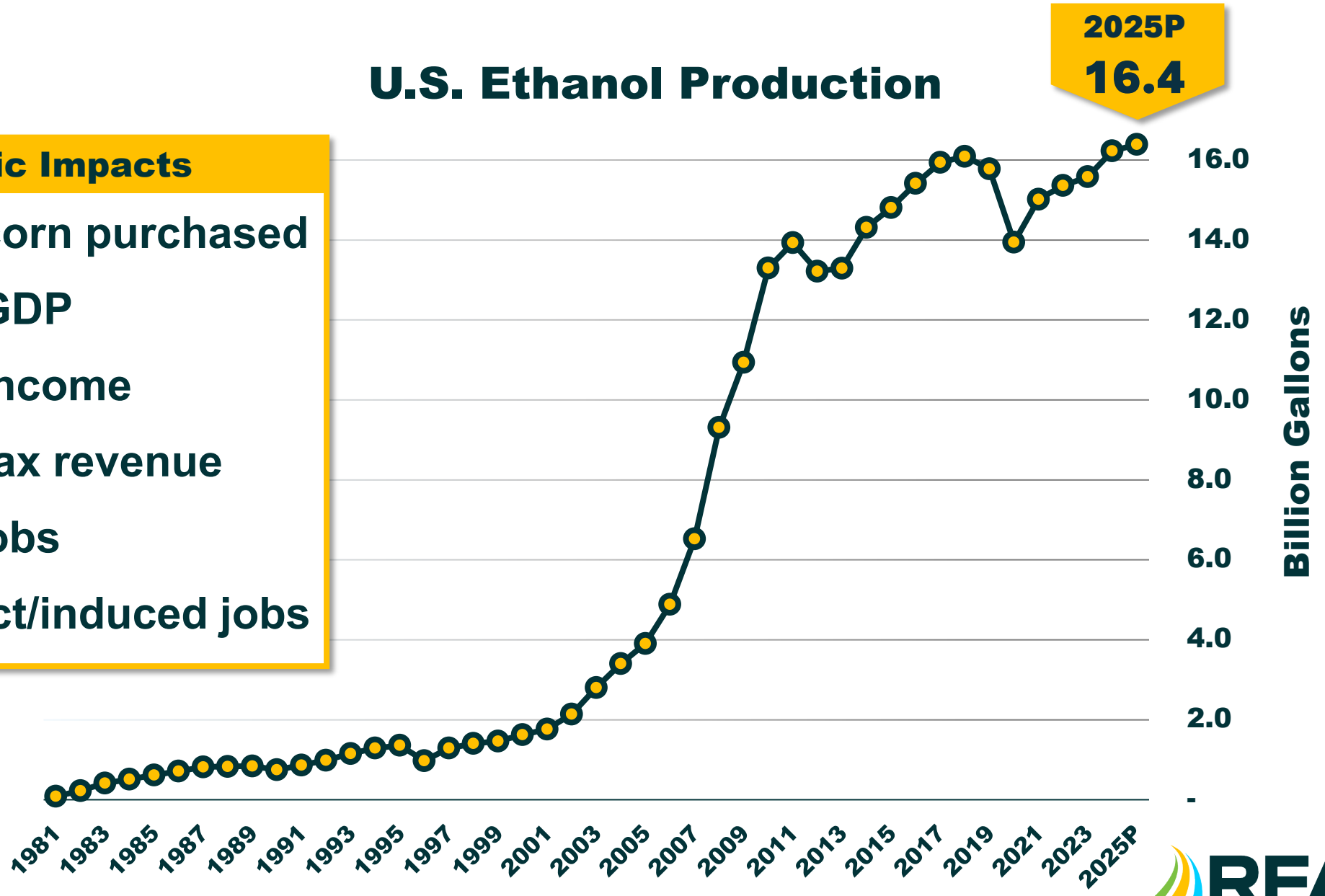
## 2024 Economic Impacts

- **$23 billion** in corn purchased
- **$53 billion** in GDP
- **$28 billion** in income
- **$10 billion** in tax revenue
- **55,810** direct jobs
- **258,089** indirect/induced jobs

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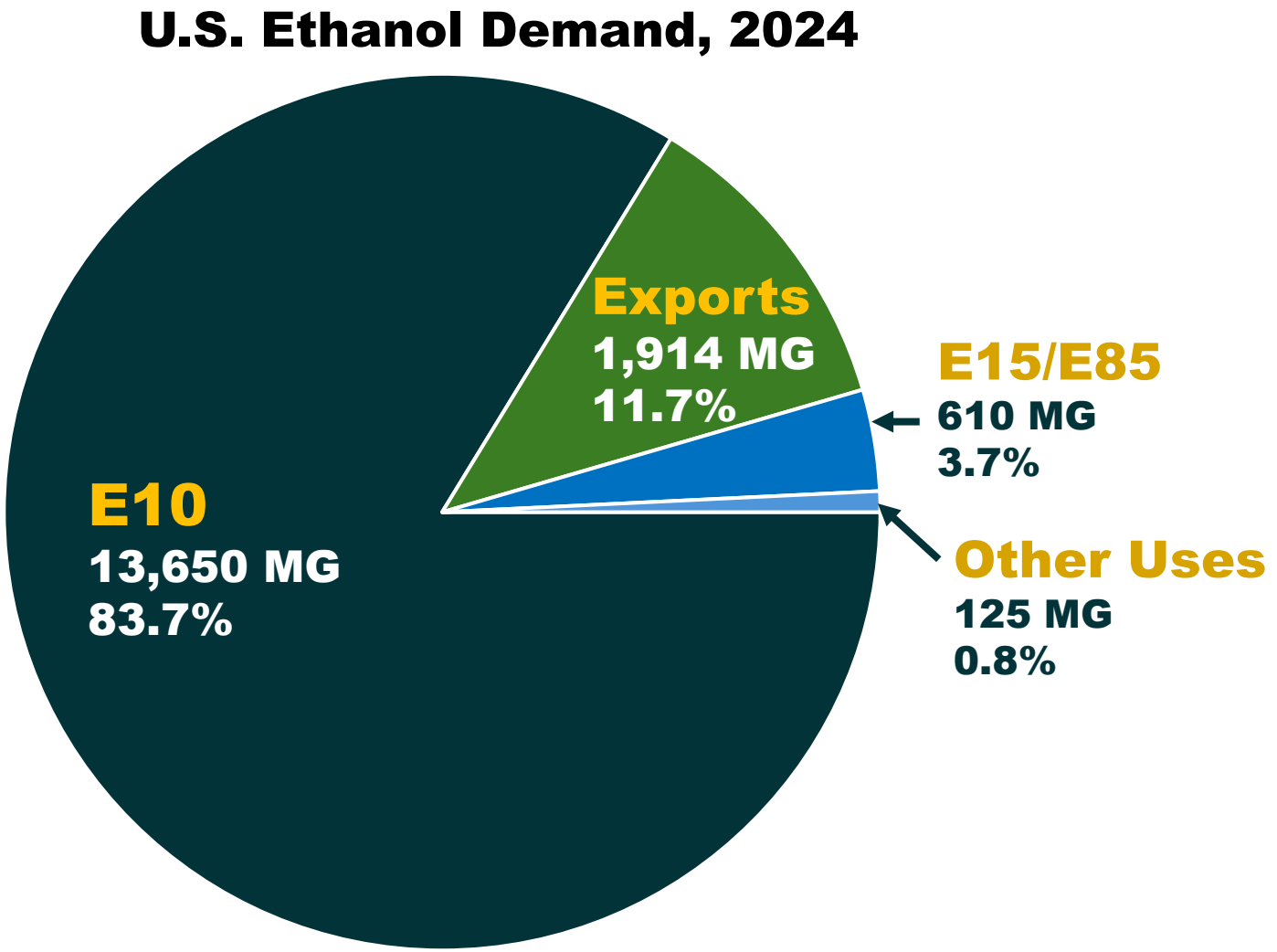
# How is U.S. ethanol used?





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# How did we get here?

- Adoption of **smart public policy** focused on solving problems
- Technology **innovation** and **continuous improvement**
- Ethanol is a **great product**!
  - Reduces GHGs by 50%+
  - Reduces tailpipe pollutants
  - Lowest-cost liquid fuel available
  - High octane rating

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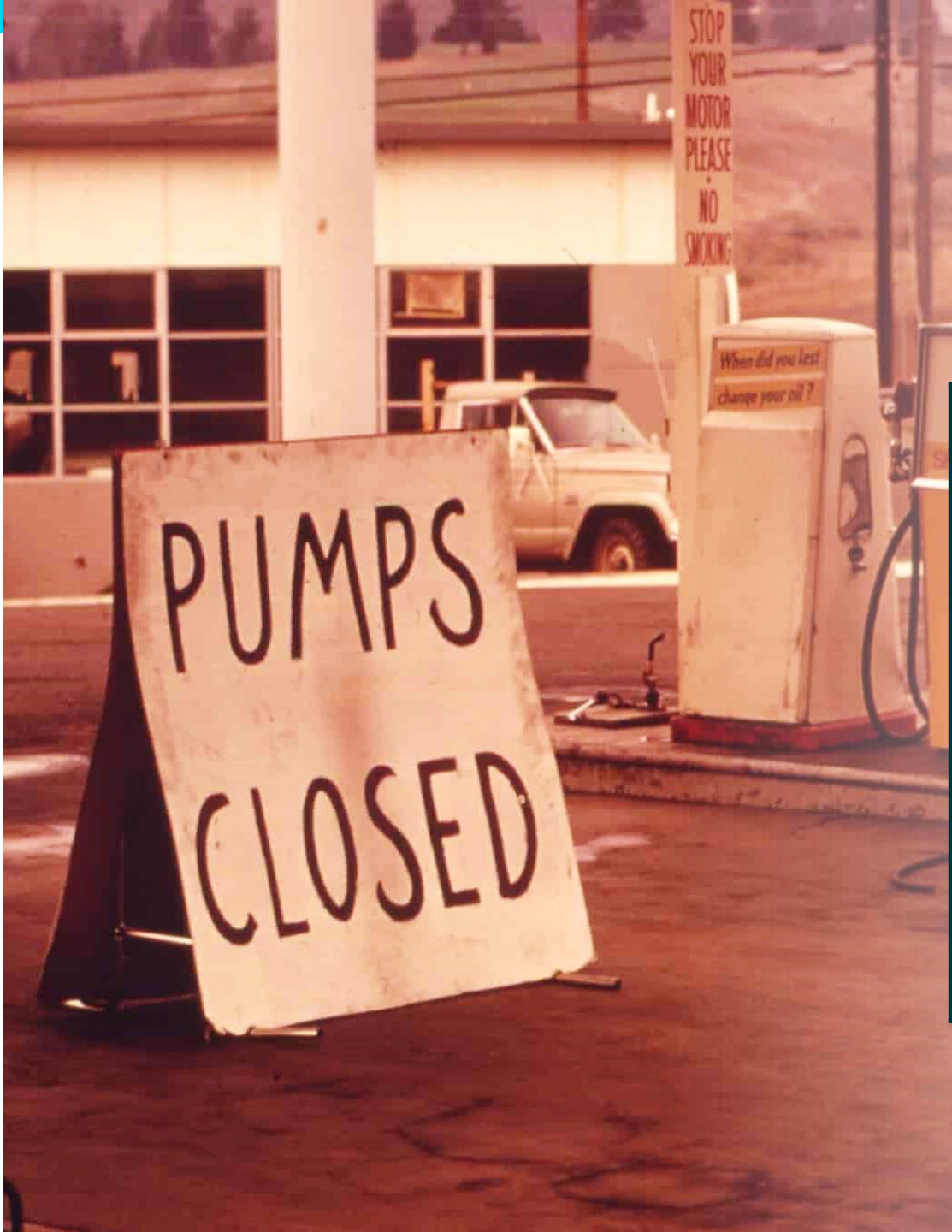


# 1970s and early 1980s

| Problem/Challenge | Policy Responses |
|---|---|
| ▪ **U.S. energy crisis**<br>  ▪ Oil import reliance<br>  ▪ Arab oil embargo<br>  ▪ Gas shortages and rationing<br>▪ **Russian grain embargo**<br>  ▪ Lost markets for U.S. farmers | ▪ **"Gasohol" waiver**<br>  ▪ Allowed E10<br>▪ **Tax credit for blending ethanol**<br>  ▪ Offsetting ethanol tariff<br>▪ **Government loans for farm-scale ethanol facilities** |

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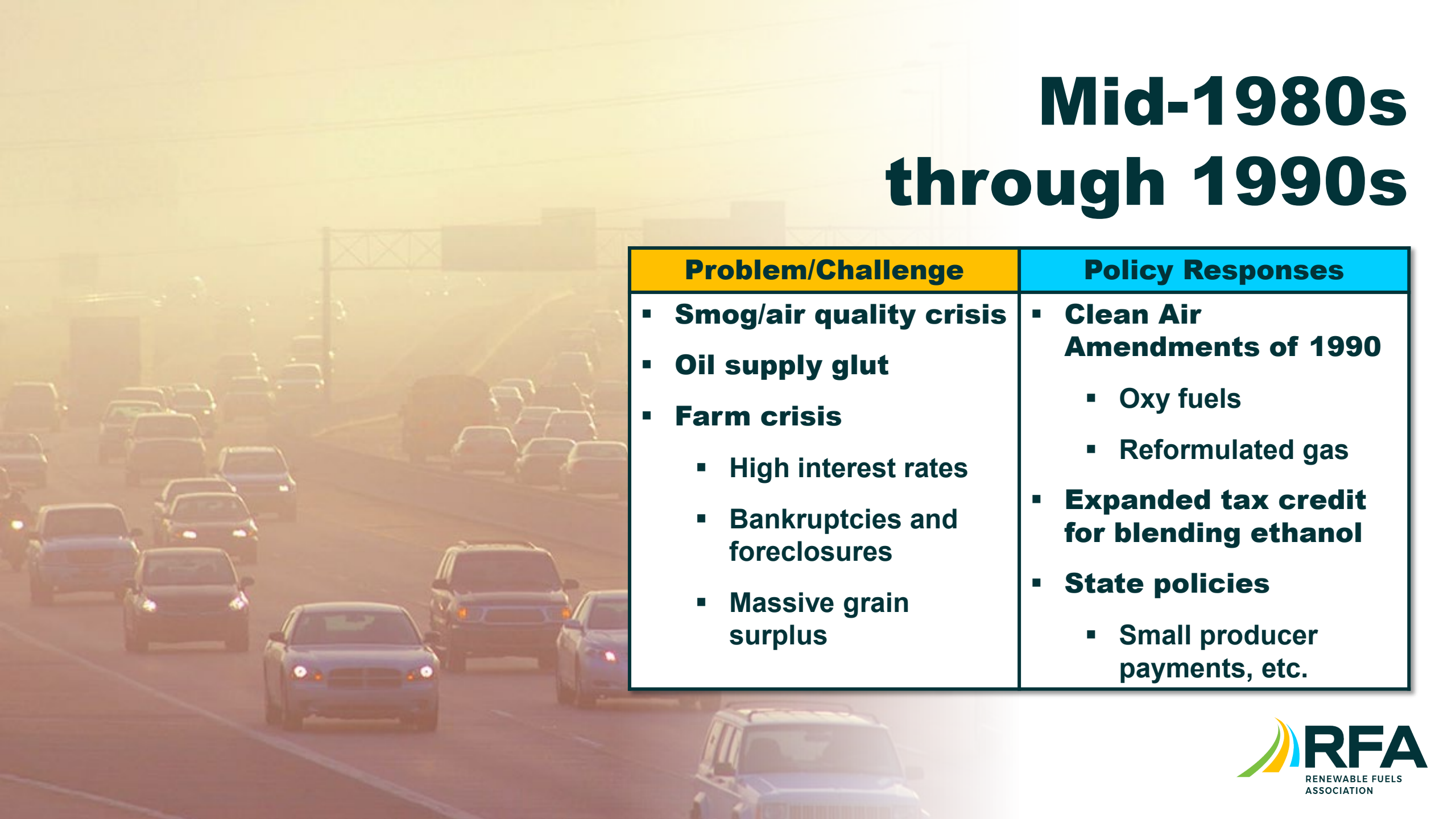

# Mid-1980s through 1990s

| Problem/Challenge | Policy Responses |
| --- | --- |
| ▪ **Smog/air quality crisis**<br>▪ **Oil supply glut**<br>▪ **Farm crisis**<br>  ▪ High interest rates<br>  ▪ Bankruptcies and foreclosures<br>  ▪ Massive grain surplus | ▪ **Clean Air Amendments of 1990**<br>  ▪ Oxy fuels<br>  ▪ Reformulated gas<br>▪ **Expanded tax credit for blending ethanol**<br>▪ **State policies**<br>  ▪ Small producer payments, etc. |

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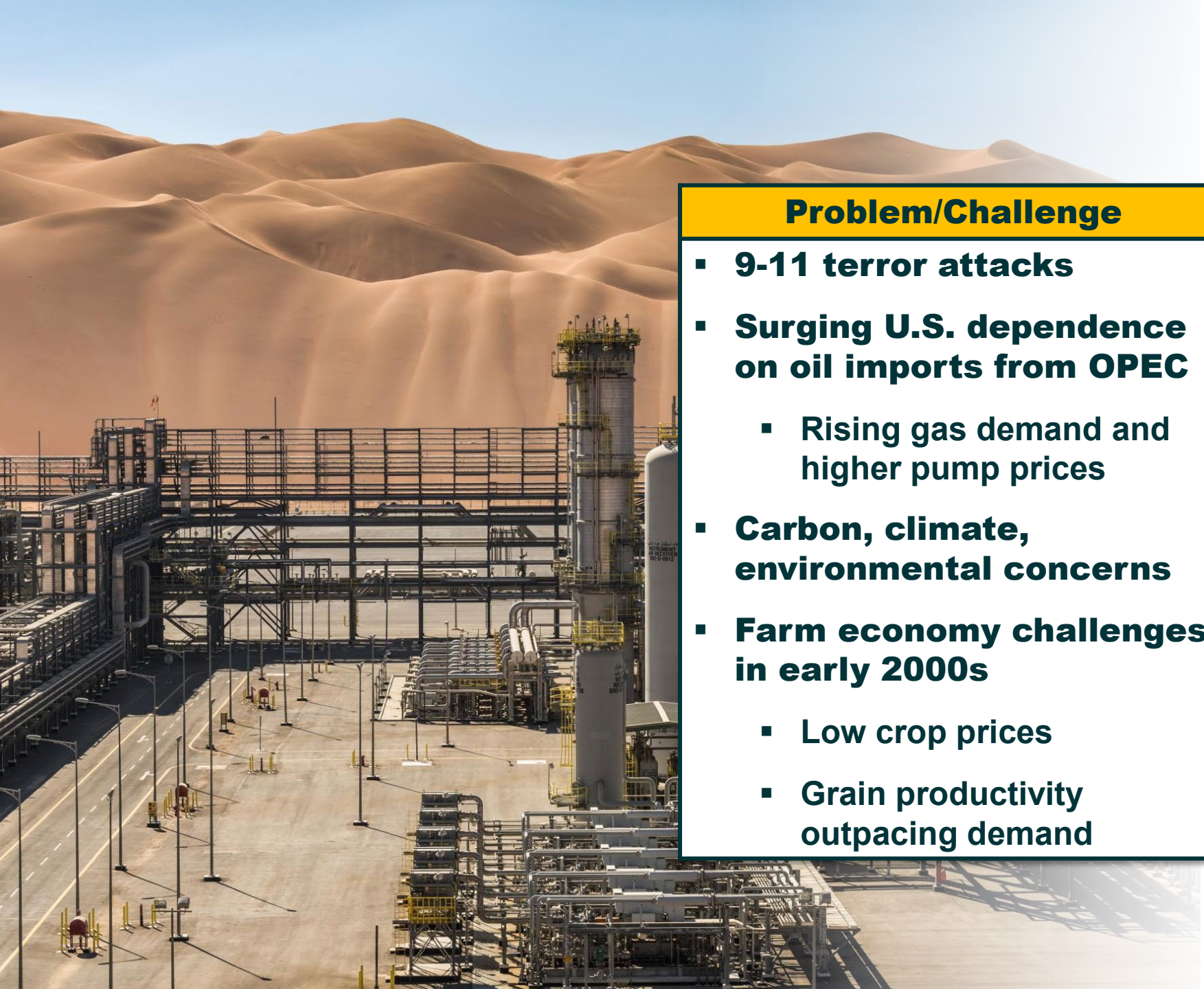

# 2000s

| Problem/Challenge | Policy Responses |
| --- | --- |
| ▪ 9-11 terror attacks<br>▪ Surging U.S. dependence on oil imports from OPEC<br>  ▪ Rising gas demand and higher pump prices<br>▪ Carbon, climate, environmental concerns<br>▪ Farm economy challenges in early 2000s<br>  ▪ Low crop prices<br>  ▪ Grain productivity outpacing demand | ▪ State MTBE bans<br>▪ 2005 RFS1<br>▪ 2007 RFS2<br>▪ FFV credits for fuel economy rules<br>▪ Extended tax credit for blending ethanol<br>  ▪ Expired 2011<br>▪ State LCFS<br>▪ E15 Approval |

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# 2020s

| Problem/Challenge | Policy Responses |
| --- | --- |
| ▪ **Carbon, climate, environmental concerns**<br>▪ **Energy prices/inflation**<br>▪ **Energy security**<br>  ▪ Increased geopolitical tensions<br>  ▪ Trade disputes<br>▪ **Farm economy challenges**<br>  ▪ Grain supply growth outpacing demand | ▪ **Clean fuel/low-carbon tax credits (IRA)**<br>  ▪ 40B (SAF)<br>  ▪ 45Z (clean fuels)<br>  ▪ 45Q (CCUS)<br>▪ **SAF Grand Challenge**<br>▪ **Post-2022 RFS**<br>▪ **Securing year-round E15 availability** |

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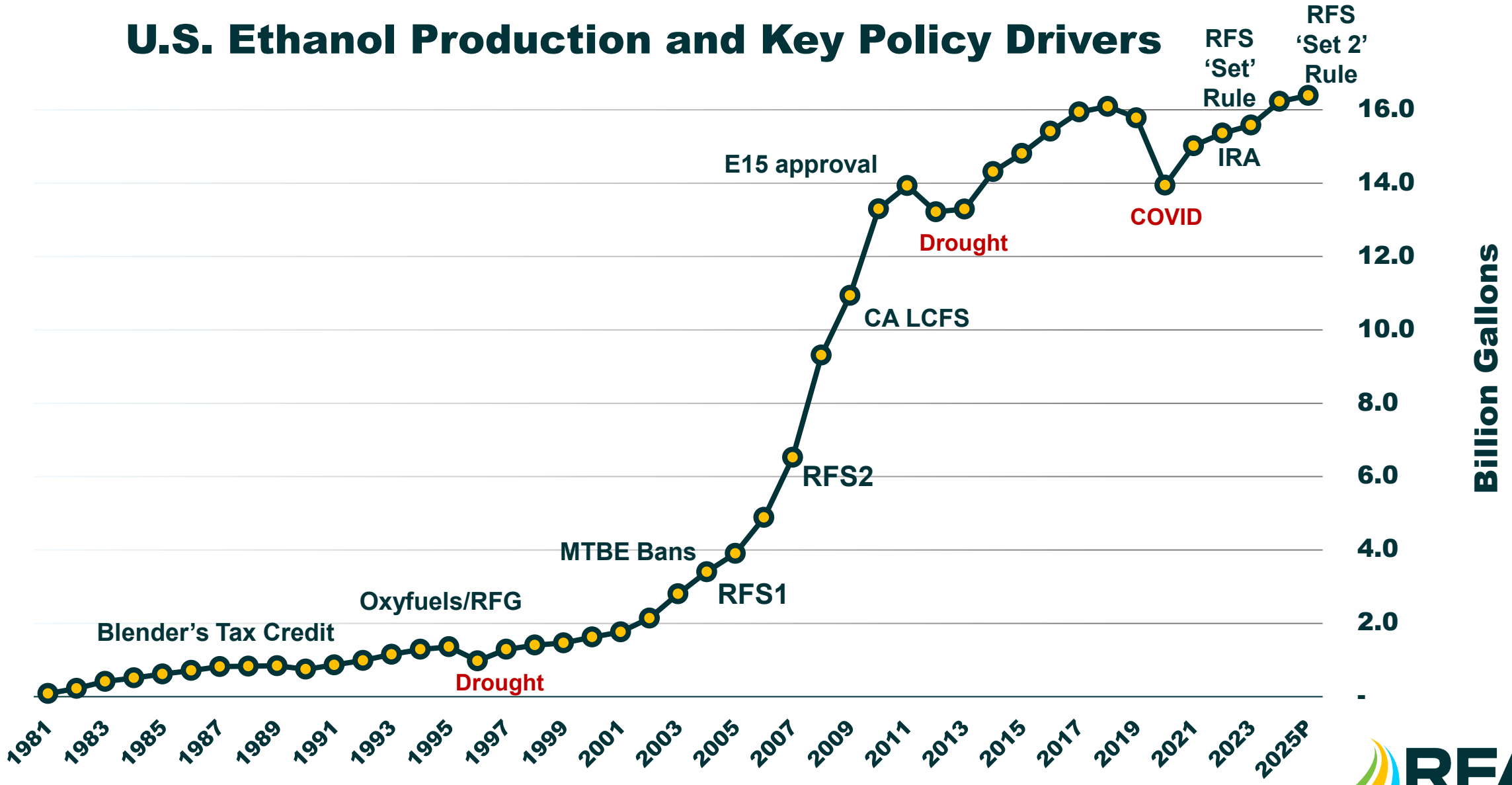
# U.S. Ethanol Production and Key Policy Drivers

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# Future Opportunities for U.S. Ethanol

- **E15 expansion**
  - Need legislation allowing nationwide, year-round sales of E15
- **Carbon capture/utilization and storage**
  - Driven by low-carbon fuel requirements; enabled by 45Z and 45Q tax credits
  - Provides pathway to net-zero carbon ethanol
- **Alcohol-to-jet fuel (SAF) –** *Aviation fuel is a 90 BGY market worldwide*
- **Clean maritime fuel –** *Marine fuel is a 70-80 BGY market worldwide*
  - Driven by IMO Net-Zero framework
- **Mid-level ethanol blends (E20-E30) for light-duty vehicles**
  - Durable, long-term policy needed
- **Green ethylene and other renewable chemicals**

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# Ethanol: Providing Solutions

Throughout the global ethanol industry's history, our biggest policy wins and successes have come when we join forces to **position ethanol and agriculture as a solution to important societal challenges.**

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# Thank You!

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