



Regulatory Impacts on State and Local Codes

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Overview

- Two main federal policies impacting alternative fuel adoption:
 - Renewable Fuel Standard (RFS & RFS2)
 - Corporate Average Fuel Economy (CAFE) Policies

Renewable Fuel Standard



Renewable Fuel Standard

- What is it?
 - Federal mandate requiring a minimum threshold of renewable fuels to be blended into the U.S. supply each year.
 - Qualifying fuels must emit lower levels of GHG than traditional petroleum fuels.
- Goals
 - Security: Reduce dependence on foreign oil
 - Environmental: Reduce GHG Emissions

Renewable Fuel Standard

- History of the RFS
 - 2005 – Energy Policy Act of 2005
 - Required 7.5 billion gallons by 2012
 - 2007 – Energy Security and Independence Act
 - Expanded the program to 36 billion gallons by 2022
 - Included diesel as well as gasoline, and added new categories of renewable fuel.

Renewable Fuel Standard

- 2010 - New EPA Rule (RFS2)
 - Implemented the changes required by EISA.
 - Sets different requirements for 4 categories of renewable fuels, based on GHG reductions:
 - Renewable Fuels (20% reduction in GHG)
 - Advanced Fuels (50% reduction in GHG)
 - Cellulosic Fuels (60% reduction in GHG)

Renewable Fuel Standard

2013 Final Volumes

Fuel	Statute Volume	Actual Volume
Cellulosic biofuel	1 billion gal	6 million gal
Biomass-based diesel	1 billion gal. (min)	1.28 billion gal
Advanced biofuel	3.75 billion gal	2.75 billion gal
Renewable fuel	18.15 billion gal.	16.55 billion gal

2014 Proposed Volumes

Fuel	Statute Volume	Proposed Volume
Cellulosic biofuel	1.75 billion gal	17 million gal
Biomass-based diesel	1 billion gal. (min)	1.92 billion gal
Advanced biofuel	3.75 billion gal	2.2 billion gal
Renewable fuel	18.15 billion gal.	15.21 billion gal

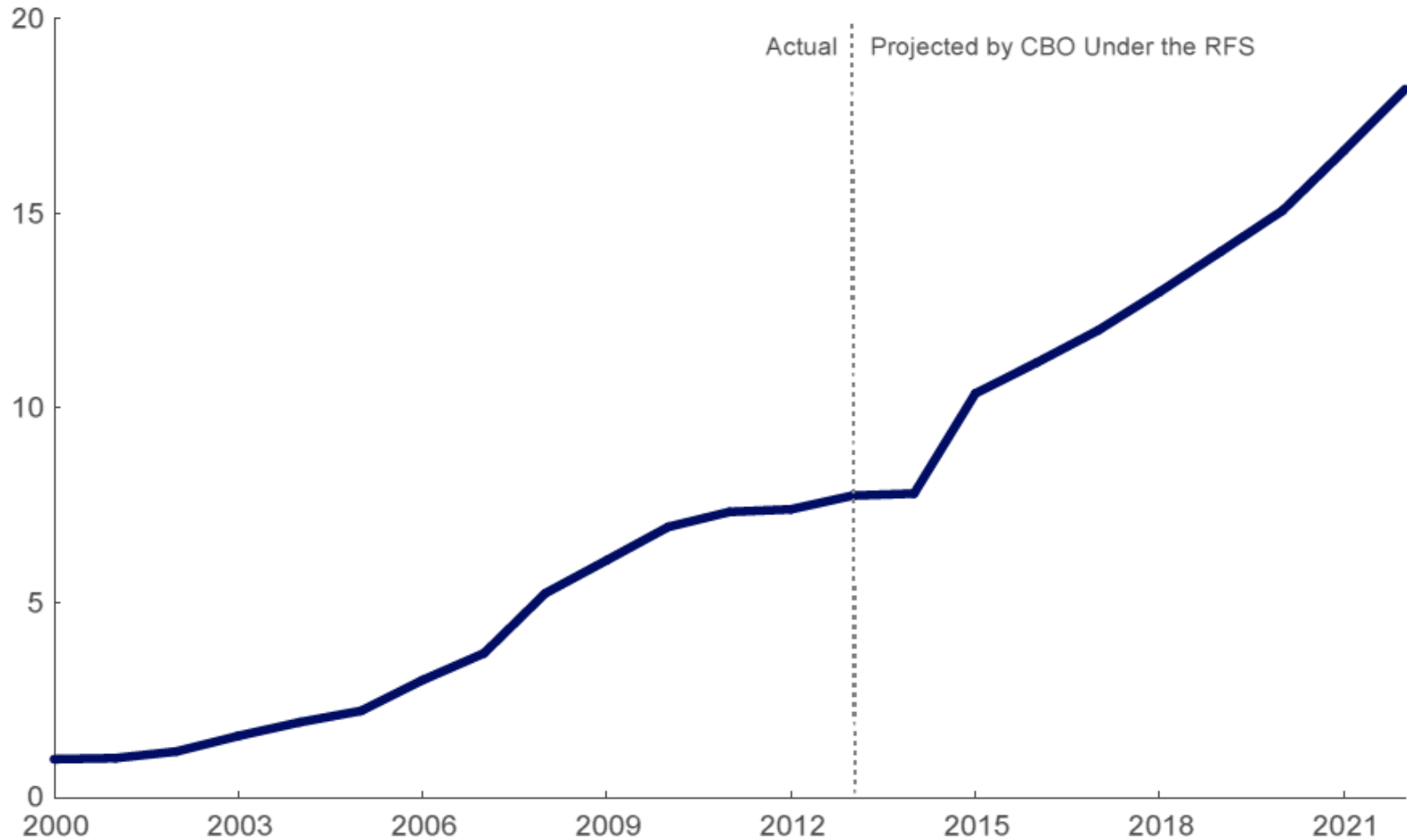
Renewable Fuel Standard

- Supply Constraints for Cellulosic Biofuel
 - EPA proposed far less for CB than the statute requires, due to “supply constraints”
 - First commercial production of CB in U.S. began in 2013 from a small number of plants
 - 20,000 gallons produced in 2012
 - 500,000 gallons produced in 2013
 - 11 million gallons produced in 2014

Renewable Fuel Standard

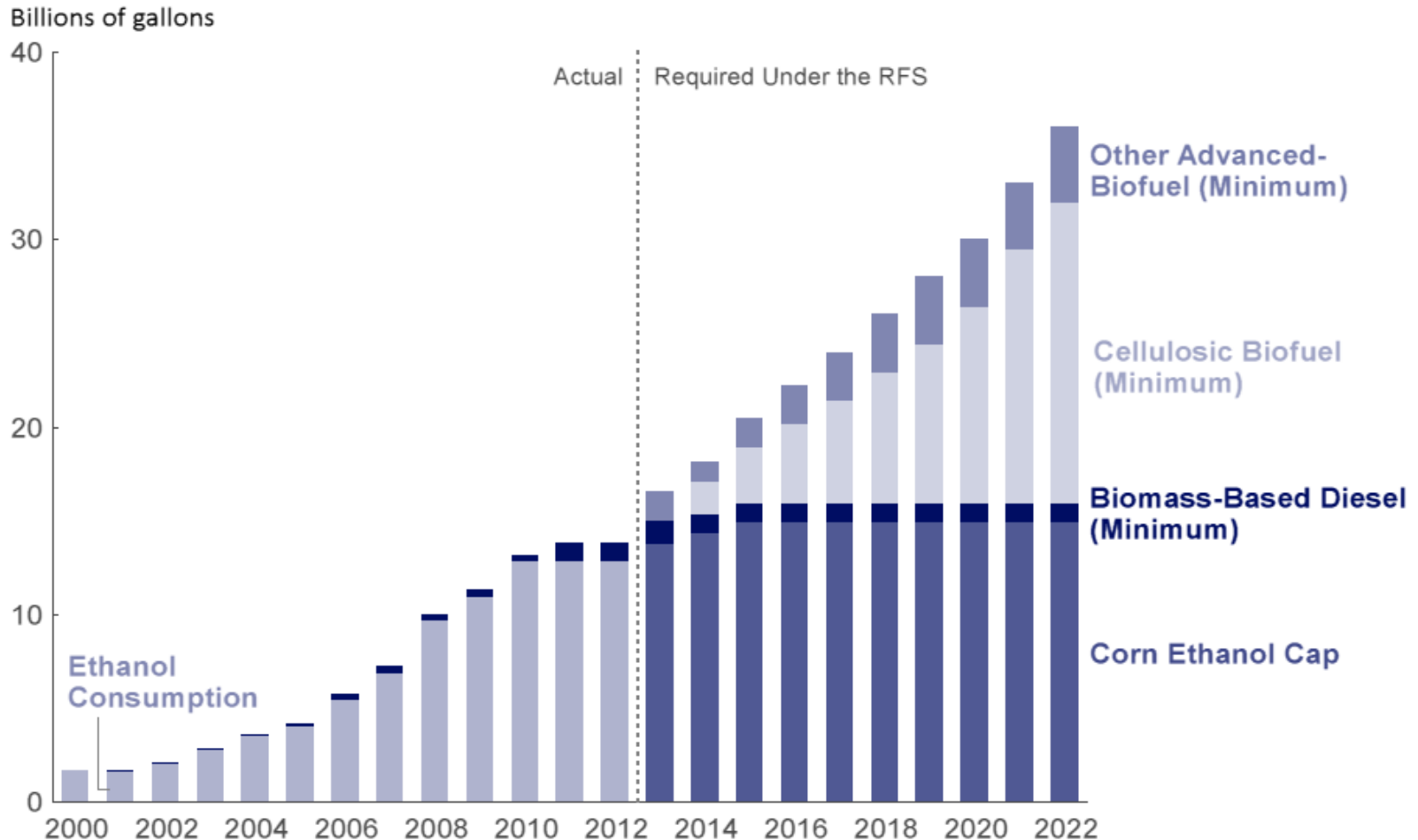
Renewable Fuels as a Share of Total U.S.

(Percent)



Renewable Fuel Standard

RFS Volumes Over Time



Renewable Fuel Standard

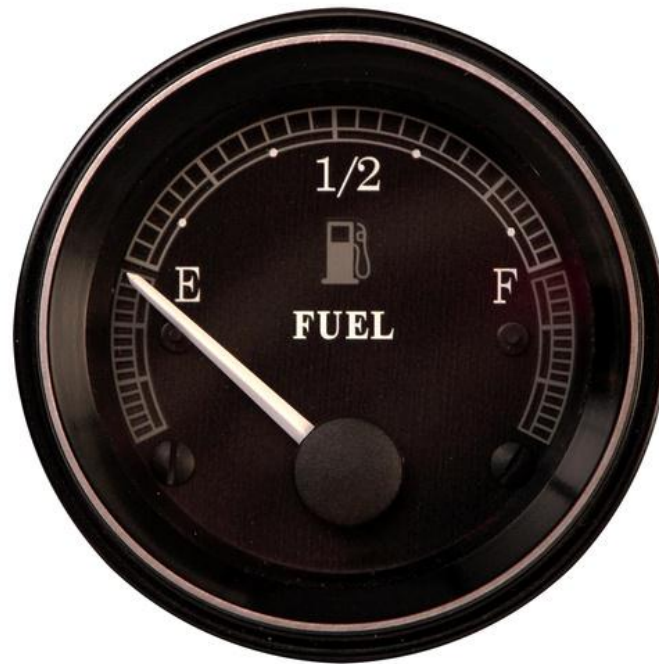
- Tracking Compliance
 - Renewable Identification Numbers
 - Each gallon of qualifying fuel is assigned a unique number
 - Fuel suppliers must submit a certain number of RINs to EPA based on their use of petroleum-based fuels
 - RINs can be sold, traded or banked, creating a secondary revenue stream

Renewable Fuel Standard

■ Obstacles

- Higher corn prices may cause higher food prices
- E10 blend wall issues
 - Older and small engine problems (10% ethanol is max that can be used by most cars)
 - Lack of infrastructure for fueling
- Lack of advanced biofuels commercialization
- Increased reliance on Brazilian imports

Corporate Average Fuel Economy (CAFE) Policies



CAFE Standards

- Corporate Average Fuel Economy (CAFE)
 - Enacted in 1975
 - Intended to improve the average fuel economy of vehicles sold in the U.S.
 - By statute, the CAFE standards must be set at the "maximum feasible level" based on:
 - technological feasibility;
 - economic practicality;
 - effect of other standards on fuel economy;
 - need of the nation to conserve energy.

CAFE Standards

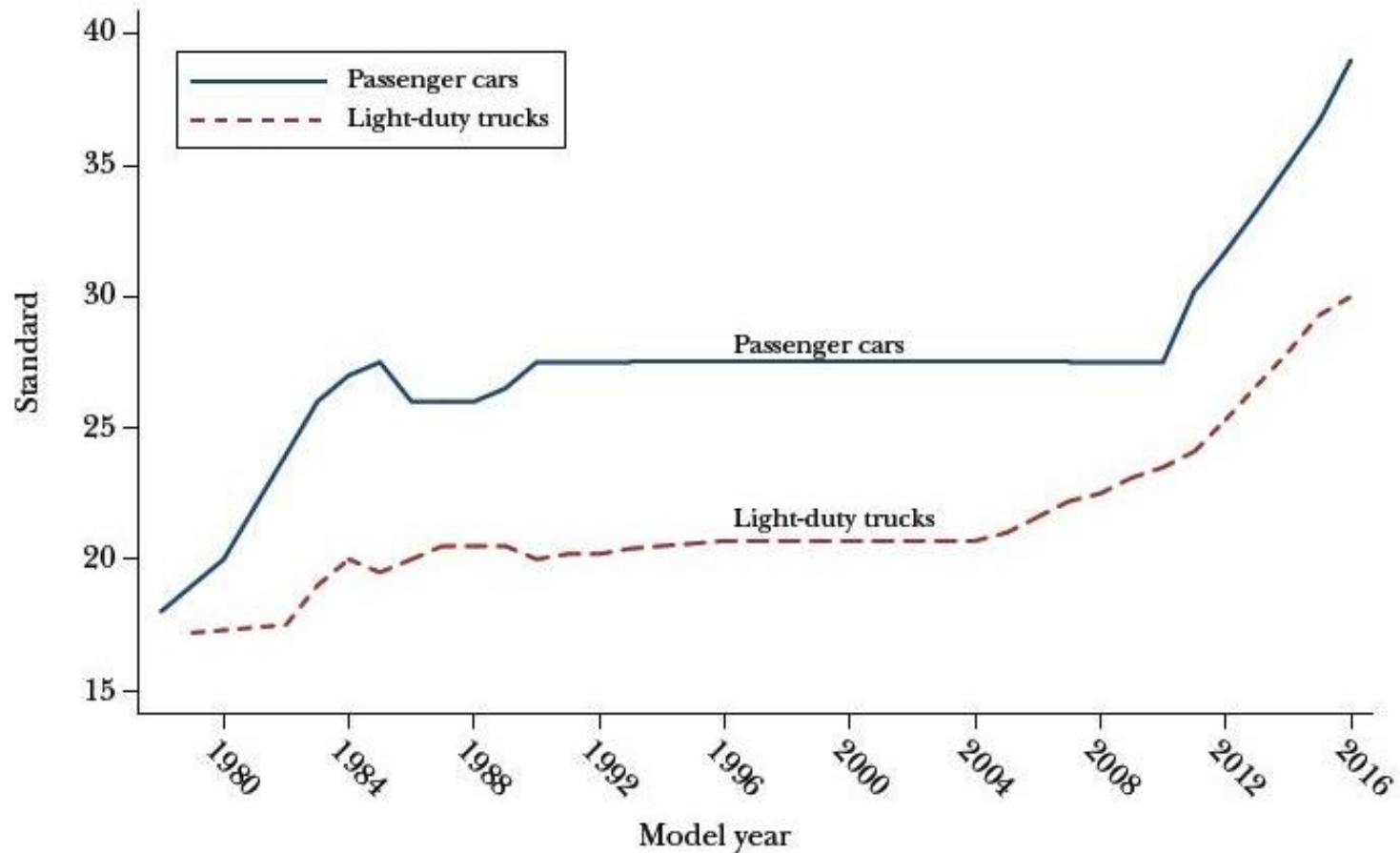
- Compliance
 - Standards are regulated by the National Highway Traffic Safety Administration
 - Fuel Efficiency is measured by the EPA
 - If the fuel economy for a manufacturer's fleet doesn't comply, must pay a fine
 - \$5.50 per 0.1 mpg under x total number of vehicles produced

CAFE Standards

- 2009: President Obama proposed average standard of 35.5 mpg for MY 2012-2016
 - Projected to reduce oil consumption by 1.8 billion barrels, and GHGs by 900 million tons
- 2011: President Obama and 13 automakers reached an agreement to increase fuel economy for cars and light-duty truck to 54.5 mpg by MY 2025
- 2014: Obama has asked EPA to establish regulations for medium and heavy-duty trucks

CAFE Standards

U.S. CAFE Standards from 1978 to 2016



Source: Data are from the National Highway Traffic Safety Administration.

CAFE Standards

Estimated Average Fleet-Wide Fuel Economy under CAFE Standards

	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cars	39.4	41.1	43.3	45.1	47.1	48.1	49.6	51.3	52.1
Light Trucks	28.8	29.3	31.3	32.8	34.9	35.5	36.5	37.4	37.6
Both	34.8	36.0	38.2	39.9	42.0	42.9	44.2	45.6	46.2

Questions?

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