

NDSU NORTH DAKOTA
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Bio Energy Update

Marketing Facilitators Inservice

Minot, North Dakota

September 23, 2015

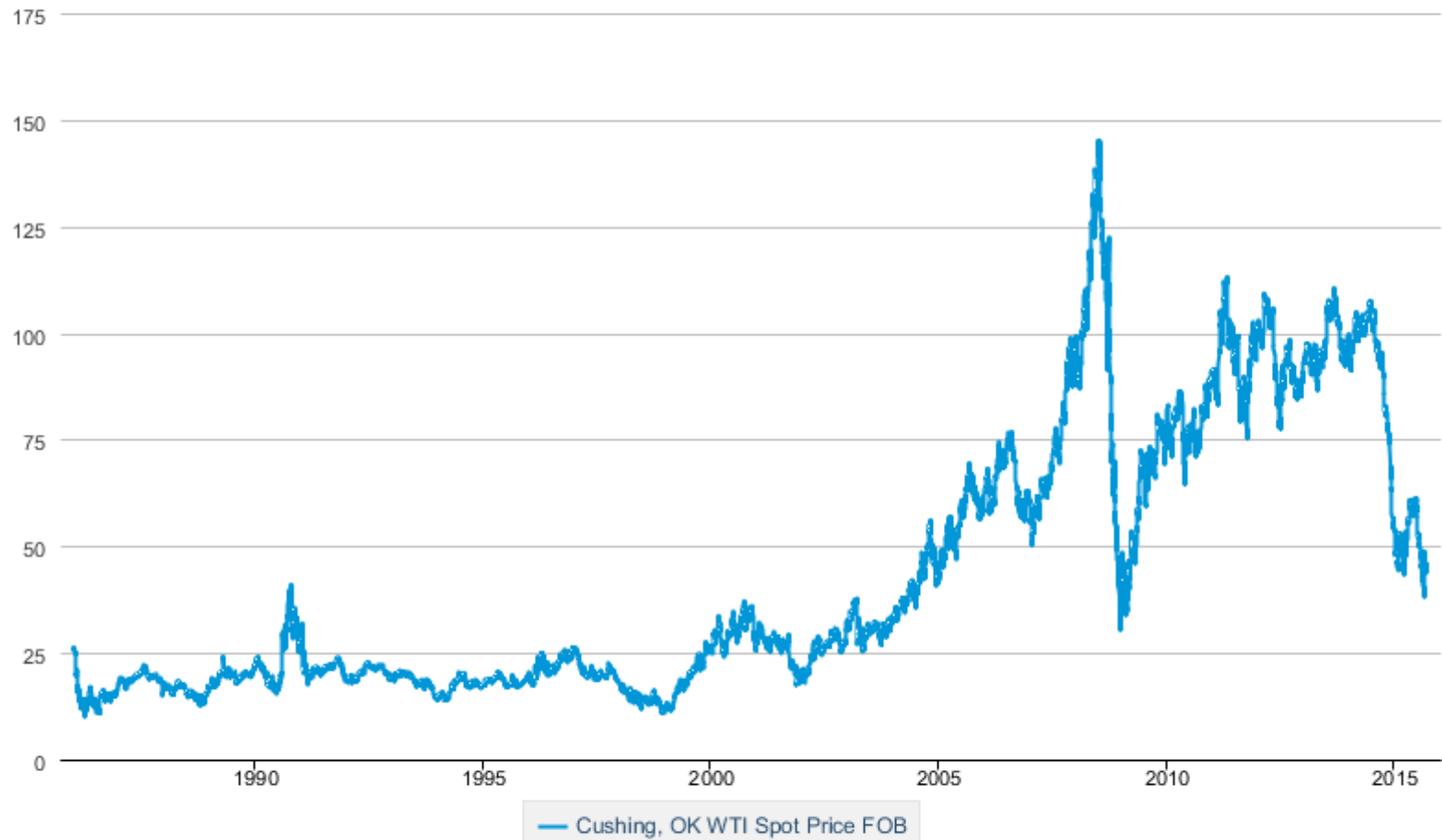
David Ripplinger

Corn Ethanol Key Factors

1. Low energy prices
2. Large corn stocks
3. Increasing motor gasoline consumption
4. Positive margins
5. High production

Spot Prices

\$/bbl



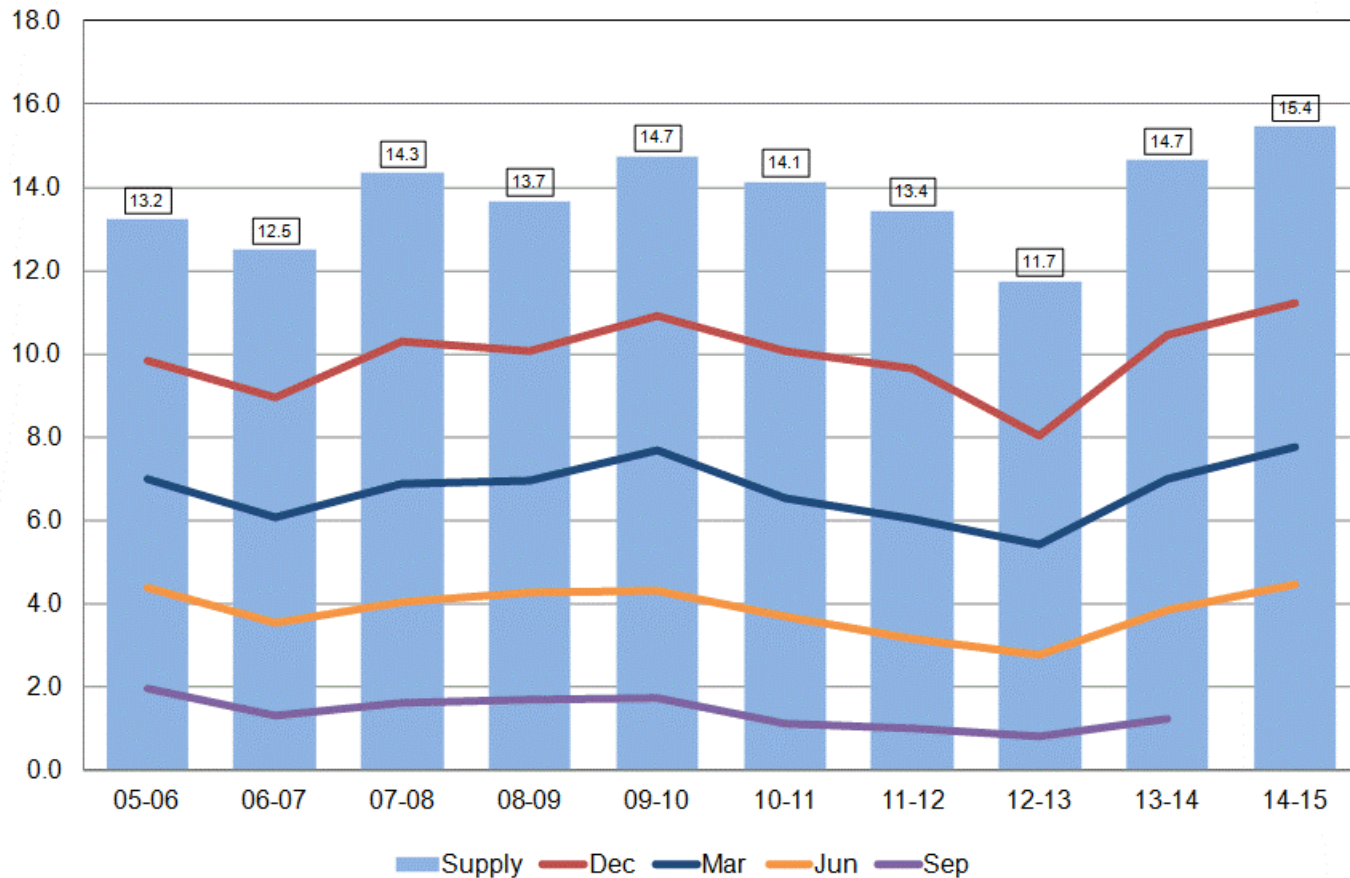
THOMSON REUTERS

Source: U.S. Energy Information Administration



Corn Stocks United States

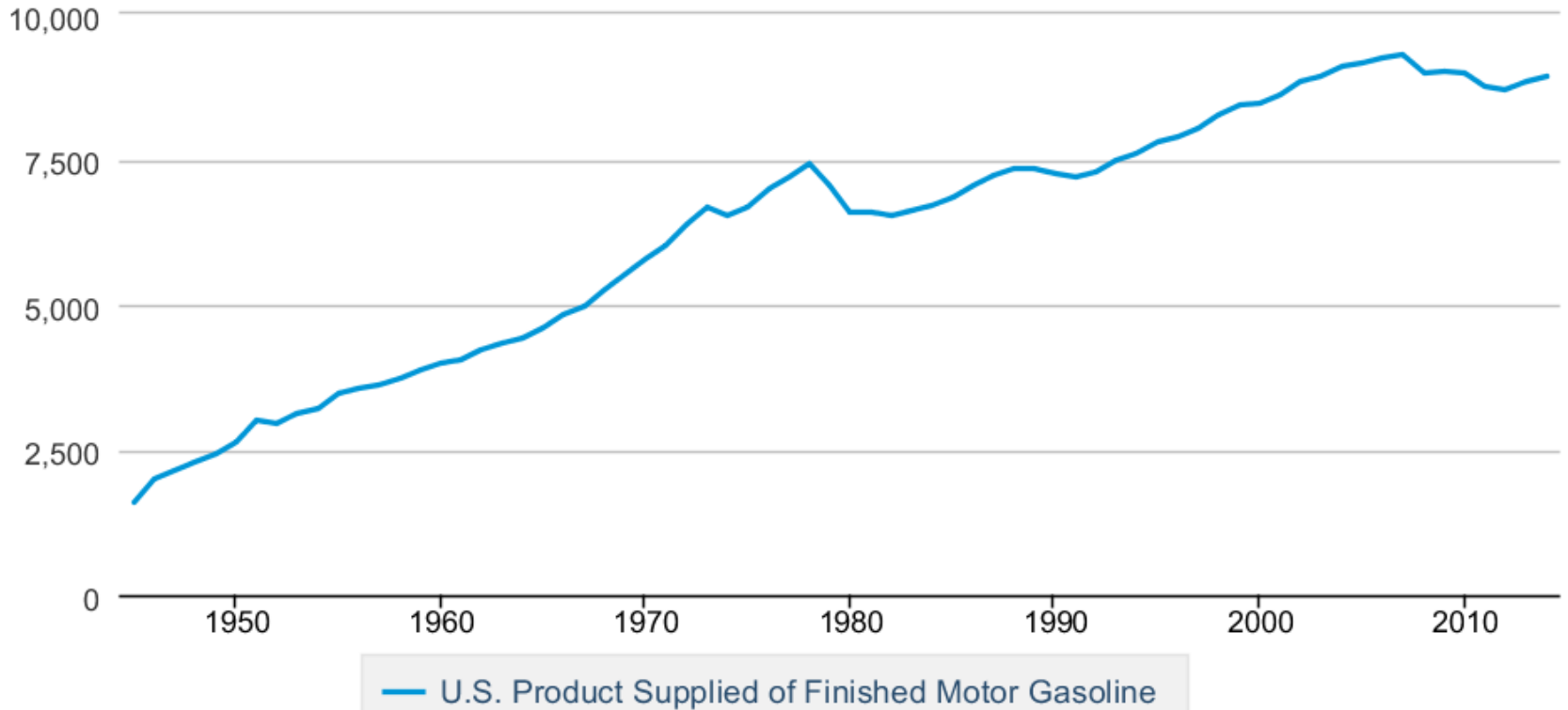
Billion Bushels



USDA-NASS
6-30-15

U.S. Product Supplied of Finished Motor Gasoline

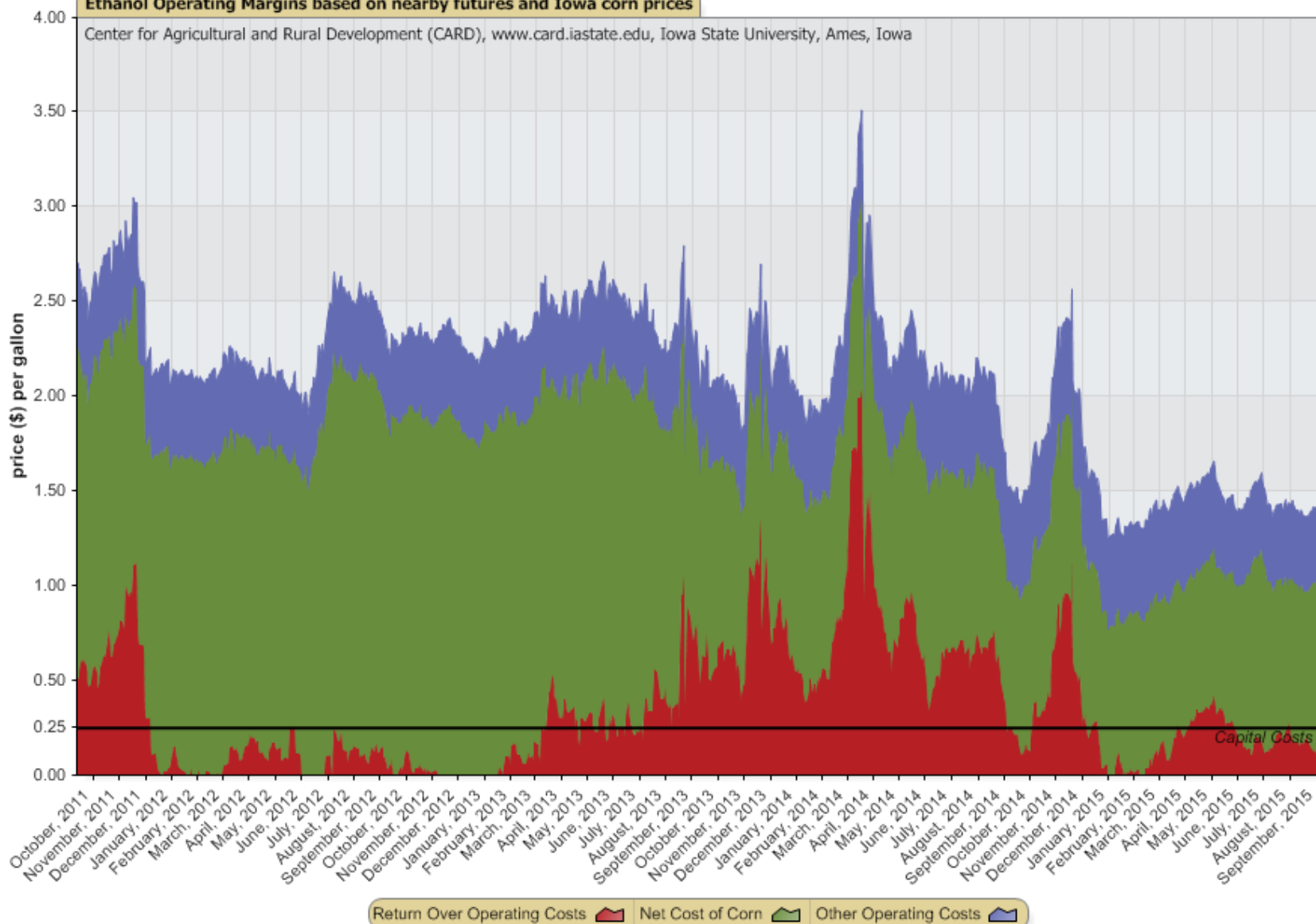
Thousand Barrels per Day



Source: U.S. Energy Information Administration

Ethanol Operating Margins based on nearby futures and Iowa corn prices

Center for Agricultural and Rural Development (CARD), www.card.iastate.edu, Iowa State University, Ames, Iowa



Weekly Ethanol Plant Production

Mbbl/d



RFS

-EPA announced 2014, 2015, and 2016 mandated volumes in late May

-Used blend wall as justification

2014-2016 Mandated Levels, billions of gallons

	2014	2015	2016
Statute	14.4	15	15
Revised	13.25	13.4	14

An Analogy



The Next Generation of Corn Ethanol Plants

RFS is non-binding

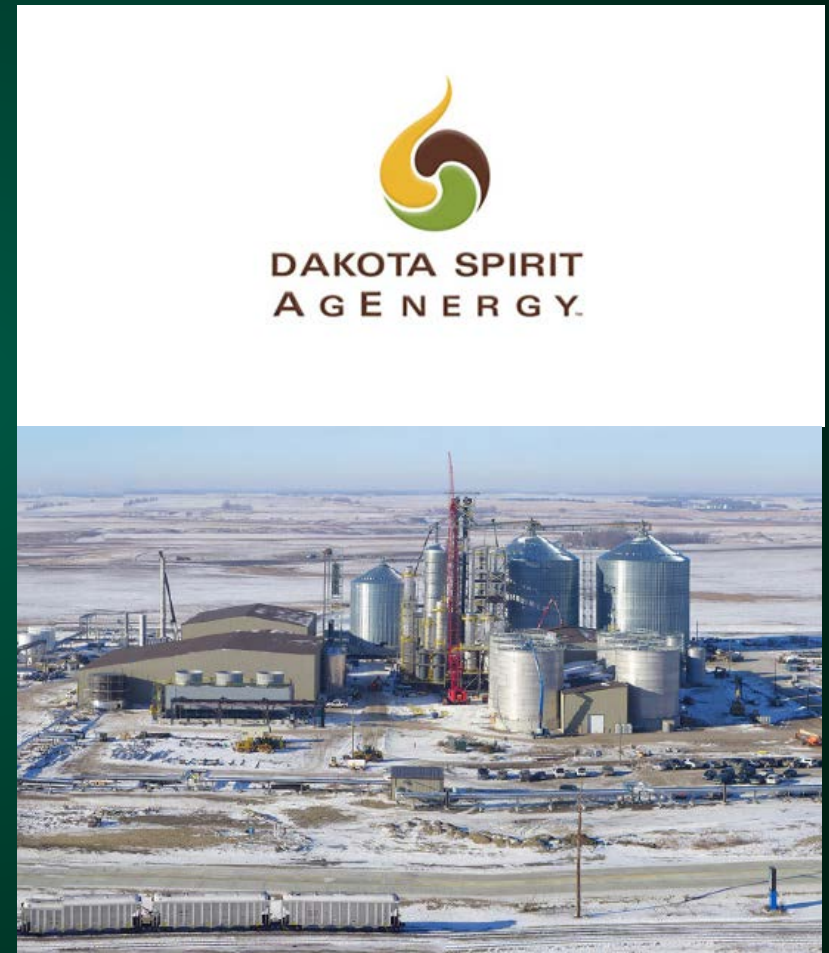
Gasoline use continues to grow

Corn continues to be 'low-cost'

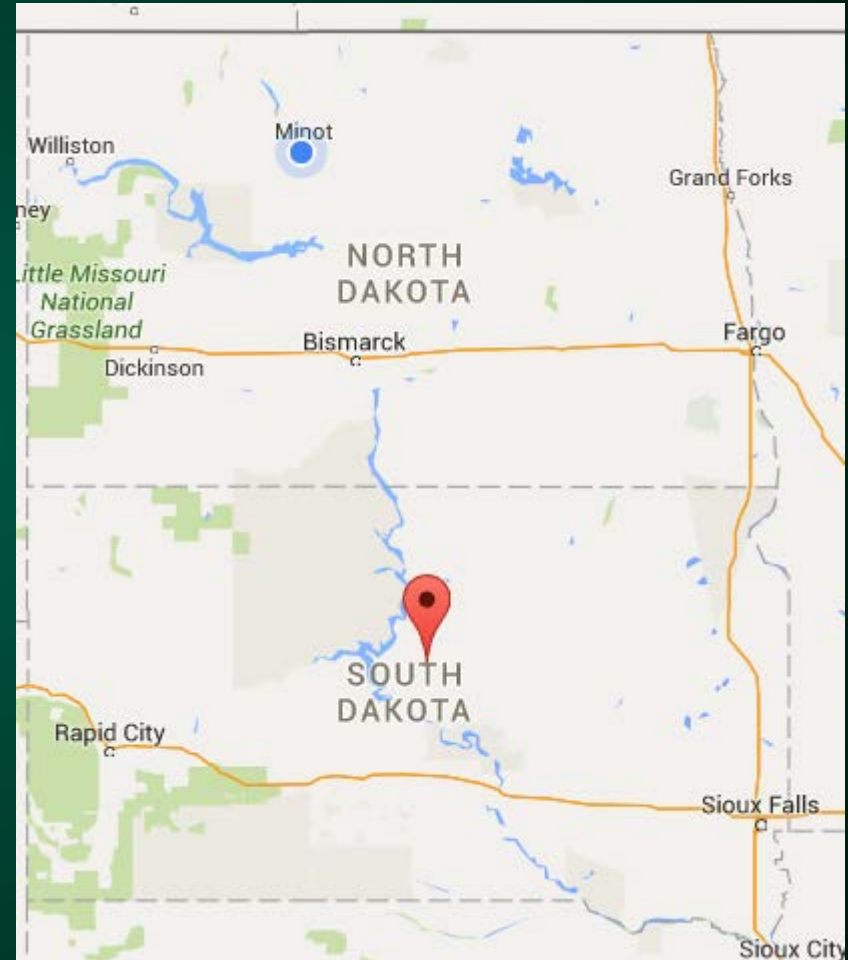
Corn-ethanol refineries can make 20%
reduction in greenhouse gas emissions

Spiritwood, North Dakota

- 65 mmgpy corn ethanol refinery
- co-located with coal-fired power plant
- began accepting corn early spring
- operating this summer



Onida, South Dakota



- Proposed 70 mmgpy corn ethanol plant
- A corn-basis play
- Currently raising funds

Corn Ethanol Outlook

14.5 billion gallons ethanol produced

800 million gallons exported

5.2 billion bushels of corn used

45 million short tons of DGs

OTHER PATHWAYS

Biodiesel Roller Coaster Continues

It appears that the biodiesel tax credit will be re-enacted...



Diving in Feed First

Interest in energy beet development remains

Activities in ND and CA have slowed; Projects in the SE have advanced

What about feed?



Solid Biofuel/Biomaterials

High solid biofuel fuel prices persist

Use of crop residue a possibility

Use of torrefied biomass as a fuel (co-fired at coal power plant) or plastics



Carinata-Jet Fuel

Being grown under
contract in western
North Dakota

Target is 'marginal'
land

Used for green jet fuel



Hemp



Farm Bill has opened door
for production

Currently part of research

NDSU had a plot in Langdon

Many uses

Commercial viability?

Cattails

Interest in harvest – water impoundments, wetlands

How can it be used?
solid biofuel, material...



Questions?