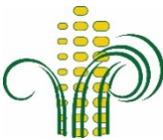


***Corn Marketing Program of Michigan
Michigan Corn Growers Association***

MDARD BIP Update



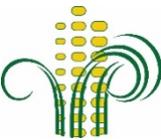
**Jim Zook
Mary 2016**





Ag Auto Ethanol Workgroup

- ❖ **MISSION** - Develop strategies and action plans to accelerate the transition of transportation fuels to higher octane/lower carbon blends for use in the North American light duty vehicle fleet.





What is the Future

❖ OEMs Continue Push for High-Octane Gas 2016 SAE World Congress

Apr 20, 2016 [Tom Murphy](#) | WardsAuto

- ❖ ***GM, Ford, Fiat Chrysler, and Honda all said they need higher Octane to meet CO2 reductions and increased mileage performance.***
- ❖ ***Ethanol is currently the cheapest octane available.***





Purpose

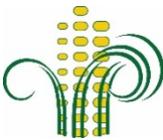
- ❖ To increase the number of dispenser distributing higher level blends of Ethanol
- ❖ Currently 7.4 million vehicles registered in Michigan
- ❖ 898,000 are Flex Fuel
- ❖ 41,708 Gasoline Dispensers (1 for every 177 vehicles)
- ❖ 689 Flex Fuel Dispensers (1 for every 1304 vehicles)





Auto Industry Commitment

- ❖ Ag Auto Ethanol Working Group (AAE)
 - 40 Partner Organizations
 - NCGA & State Corn Grower Associations
 - Ethanol Industry
 - Auto Industry
 - Agribusiness Industry
 - 12 Steering Committee Members
 - 6 Action Teams
 - 2 Co Chairs (GM & John Deere)





National Pump Infrastructure

USDA Biofuel Infrastructure Program (BIP)

- \$100 Million CCC funds
 - \$210 million total investment with matching state and private funds
 - 21 States Received funding under USDA program
 - Nearly 5000 additional pumps to be installed nationwide as a result
 - PtP expansion
 - NCGA and States pledged an additional \$1.95 million





Michigan Pump Infrastructure

- ❖ 3 Million CCC funds
- ❖ Total investment from all 5.34 million
- ❖ Install Dispensers and Underground Storage Tanks (UST)
- ❖ 9 E15/E25 Retrofit Dispensers
- ❖ 40 E 85 Dispensers
- ❖ 40 Blender Pumps
- ❖ 20 UST

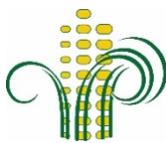




Michigan Pump Infrastructure

- ❖ REQUESTED TO DATE
 - ❖ 1.7 Million CCC funds
 - ❖ 20 Blender Dispensers
 - ❖ 37 E 85 Dispensers
 - ❖ 17 Underground Storage Tanks

- ❖ AVAILABLE TO GRANT
 - ❖ 9 E15/E25 Retrofits
 - ❖ 20 Blender Dispensers
 - ❖ 3 E 85 Dispensers
 - ❖ 3 Underground storage tanks.





Marketing Efforts





Questions?



Jim Zook

jzook@micorn.org

517-819-4249

www.micorn.org



DFA Cass City MI

Erik Macevoy, Plant Manager

DFA Cass City



More Cooperative.



Plant overview

- **Total Milk Capacity 3M pounds/day**
- **Equipment**
 - 4 receiving & load out bays
 - 2 Separators
 - GEA 80K pounds/hour each
 - 2 Pasteurizers
 - Skim 160K pounds/hour
 - Cream 14K pounds/hour
 - 1 Reverse Osmosis for Condensing
 - Skim feed rate 160K pounds/hour
 - Waste Water Treatment Plant
 - Full treatment with direct discharge to the Cass River
 - Membrane Bio-Reactor with 1.6M gallon activated sludge tank

First milk received on February 8th 2015



More Cooperative.



Staff and Team Members



More Cooperative.



Receiving Bays



More Cooperative.



Separators



More Cooperative.



Reverse Osmosis Unit



More Cooperative.



Raw Silo Corridor



More Cooperative.



Waste Water Treatment Plant



More Cooperative.



Waste Water Membrane Filtration



More Cooperative.



DFA Cass City



More Cooperative.



Questions?

More Cooperative.





Food and Dairy Division

Michigan Department of Agriculture & Rural Development

Kevin Besey

FDD Director

May 18, 2016



Division Focus

- **Food Safety**
- **Dairy Safety**
- **Pure MI FIT & Food Policy**



\$16.6 M Budget

Food and Dairy Division FY16 Budget
(Millions)



Food Safety Education
Grant Fund- \$250,000/yr

\$31 million local health
food service program.
State provides 28%.



FDD - 111 staff



Management,
Communications,
Nutrition

5



Business Unit

6



Food Section

66

FOOD SAFETY



Dairy Section

24



Quality Assurance
and Emergency
Response Unit

10



Field Focused

- 91 (82%) with home workstation
 - 54 Food Inspectors
 - 18 Dairy Inspectors
- Focused on keeping staff close to customer
- 85 vehicles drive 1.1 million miles per year



USDA – Wholesale Meat
FDA – Interstate Food
Processors / Dairy Program

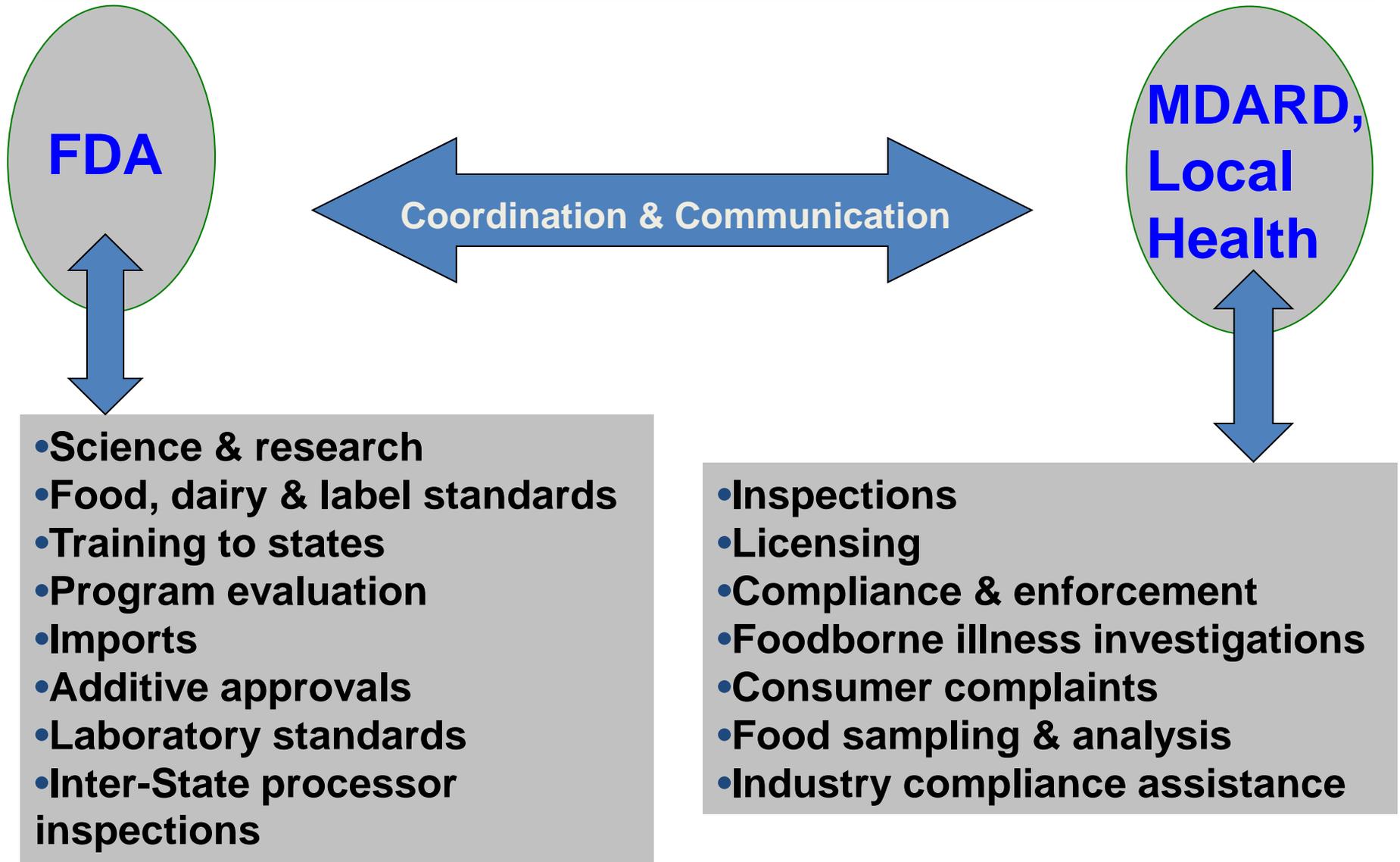
MDARD Dairy, Food –
Retail/Processing

Local Health
Food Service

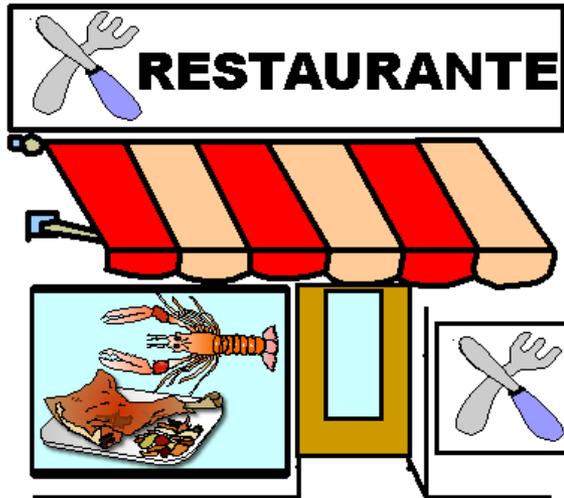
NSF, IFPTI
MSU, MPHI
INDUSTRY

MDEQ
MDHHS
MDE

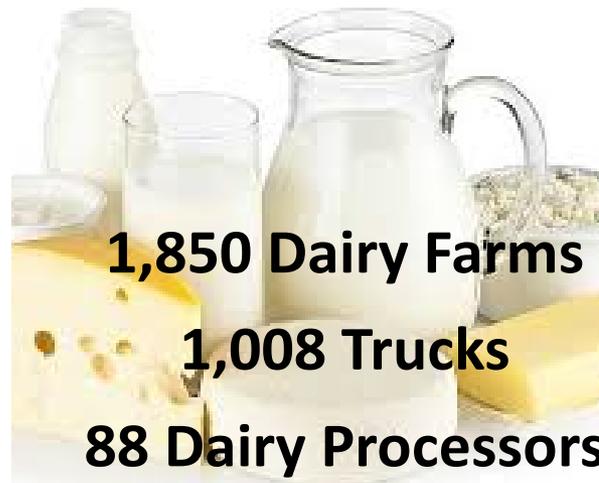
Integrated National Food Safety System - Avoiding Duplication



Regulated Community



45,000 Food Service



1,850 Dairy Farms

1,008 Trucks

88 Dairy Processors



Trends

**Strong Dairy
Growth**

**Moderate
Retail/Processing
Growth**

**Increased
Exporting**





Food Section

- Licenses and Evaluates Food Establishments
- Food Sampling, Recalls, Tracebacks, Plan Review, Emergency Response, Complaints
- Farmers Markets, Cottage Food
- FDA Contracts and Grants





Dairy Section

- Licenses and Evaluates all segments of Dairy
- Farms, Trucks & Haulers, Processing Plants
- Dairy Sampling, Recalls, Tracebacks, Plan Review, Emergency Response, Complaints
- USDA Cooperative Agreement- Butter Grading





Quality Assurance and Emergency Response Unit

- Food Service Consultants
 - Accredits 45 local health departments
- Dairy Rating Officers: QA for dairy program
- Emergency Response Staff: Recalls, Tracebacks, Emergency Response, Foodborne Illness
- Rapid Response Team, Incident Command





Business Unit

- Budget
- IT Support / Data Management
- Supplies and materials to staff state-wide
- Exports - Certificates of Free Sale
- Administrative Support





Emerging Areas

- Growing Food Inspection Staff from 47 to 59
 - Adding Internal Audit Position
 - Increasing amount of specialized training needed
- Improving Food Establishment Compliance
- Food Safety Modernization Act
 - Pursuing Funding and Resources to Implement
 - On-Farm Produce Safety
 - Food Processors
 - Preventive Controls, Import Verification
 - Transportation Food Safety
- Dairy
 - May need additional staff as industry grows
 - State Milk Production moving from 7th to 5th nationally
 - New technologies – Robotics - Milk protein fractionation



Legal

- Updating Pasteurized Milk Ordinance adoption
- Update Food Law to include:
 - Food Safety Modernization Act rules
 - Manager and Employee Training Updates
 - 2017 Food Code adoption
 - Vending bill proposes to move vending inspections to MDARD.

Questions?



Michigan Department of Agriculture & Rural Development

Stay connected with MDARD!



Michigan Department
of Agriculture



@MichDeptofAg



Mlagriculture



POWER of the *Past.*

VISION for the *Future.*

Michigan Milk Producers Association

Dairy Industry Update

Ken Nobis, President
Michigan Milk Producers Association

Michigan's Dairy Industry



- Ranks 7th nationally
- Dairy is the top ranking segment of Michigan's agriculture industry.
- Dairy contributes over 20% of Michigan's cash receipts for Agriculture.
- Represents more than 4.0% of total U.S. milk production.



Top Ten Dairy States

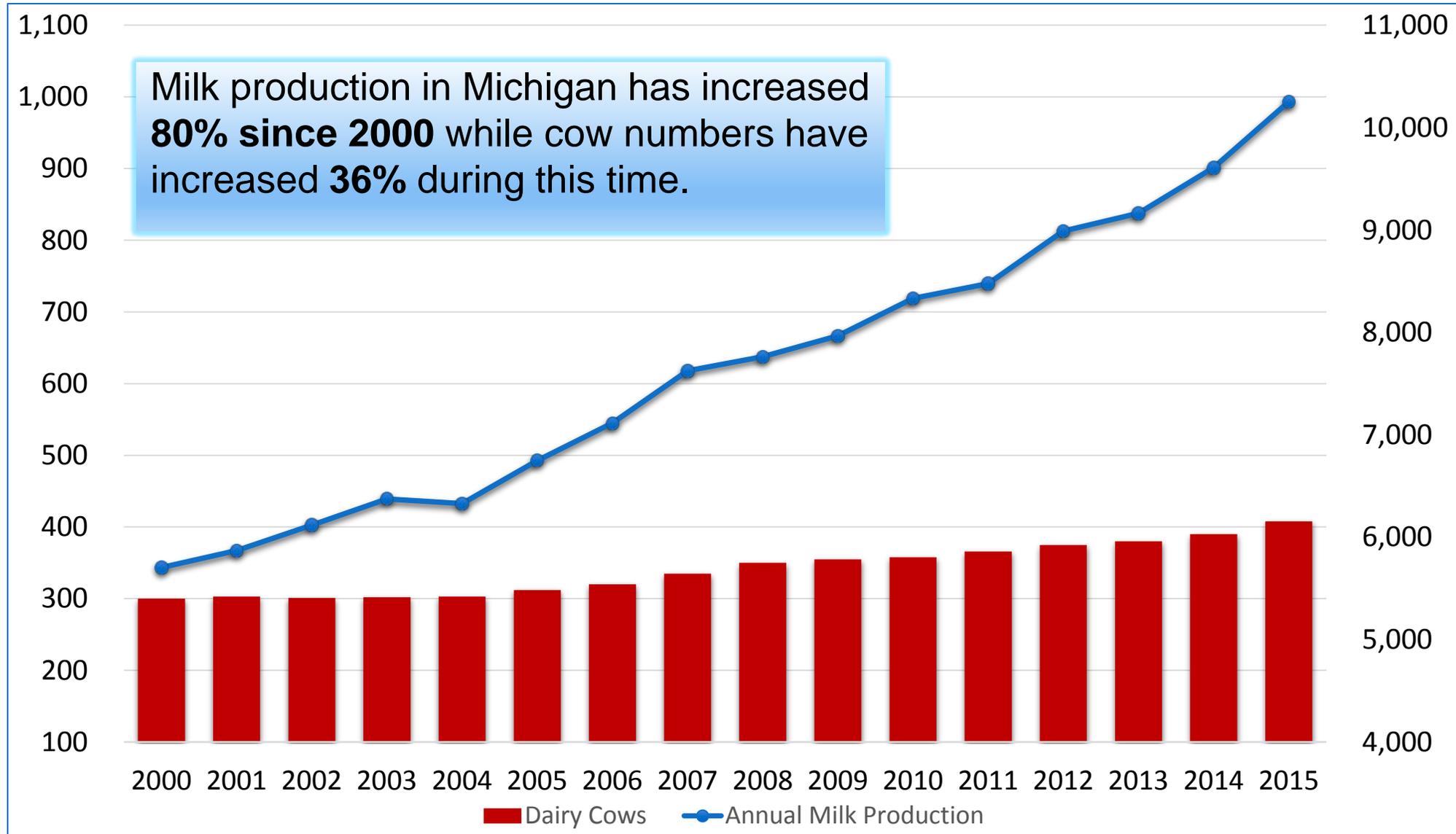
2015 Milk Production

1. California	40.8 billion lbs	-3.4%
2. Wisconsin	29.0	+4.4
3. Idaho	14.2	+1.7
4. New York	14.1	+2.7
5. Pennsylvania	10.8	+1.3
6. Texas	10.3	-0.1
7. Michigan	10.2	+6.7
8. Minnesota	9.4	+3.7
9. New Mexico	7.8	-3.4
10. Washington	6.6	+0.5

Number of Dairy Cows & Total Annual Production Michigan 2000 - 2015

Thousand

Million pounds



Milk Production Per Cow- Top 10 States - 2015

	State	Milk Produced Per Cow
1.	Colorado	25,685 pounds
2.	Michigan	25,130 pounds
3.	Arizona	24,477 pounds
4.	New Mexico	24,245 pounds
5.	Idaho	24,126 pounds
6.	Washington	23,848 pounds
7.	Utah	23,146 pounds
8.	Nevada	23,069 pounds
9.	California	23,002 pounds
10.	Iowa	22,943 pounds

The Michigan Advantage



- Agricultural Land
- Climate
- Water
- Infrastructure
- Access to Population Centers

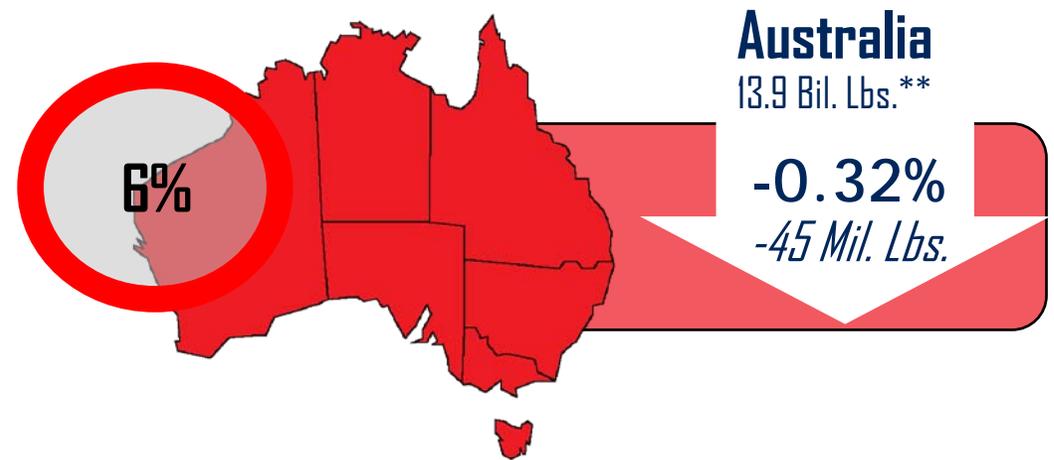
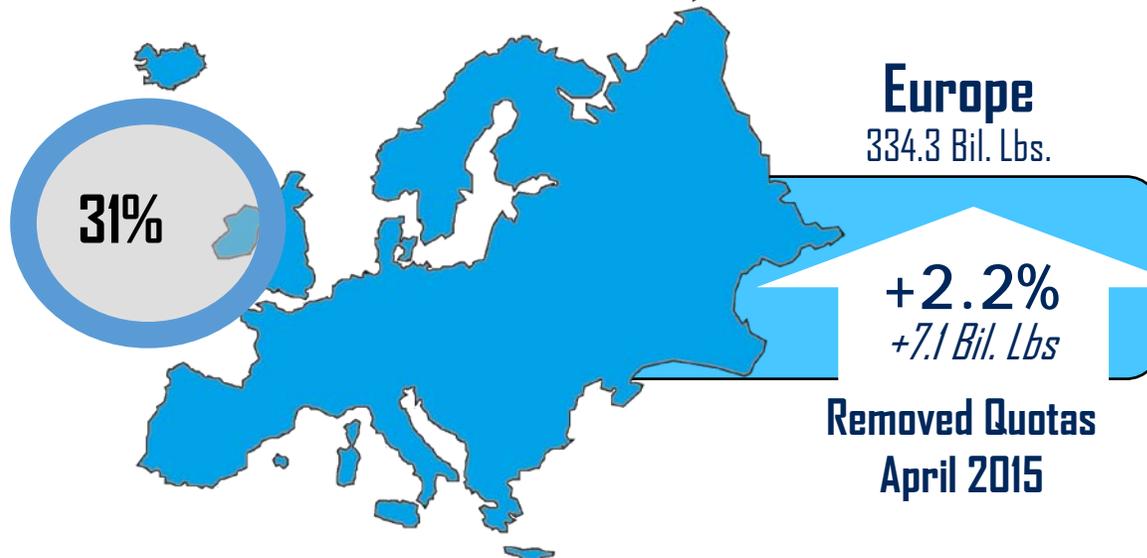
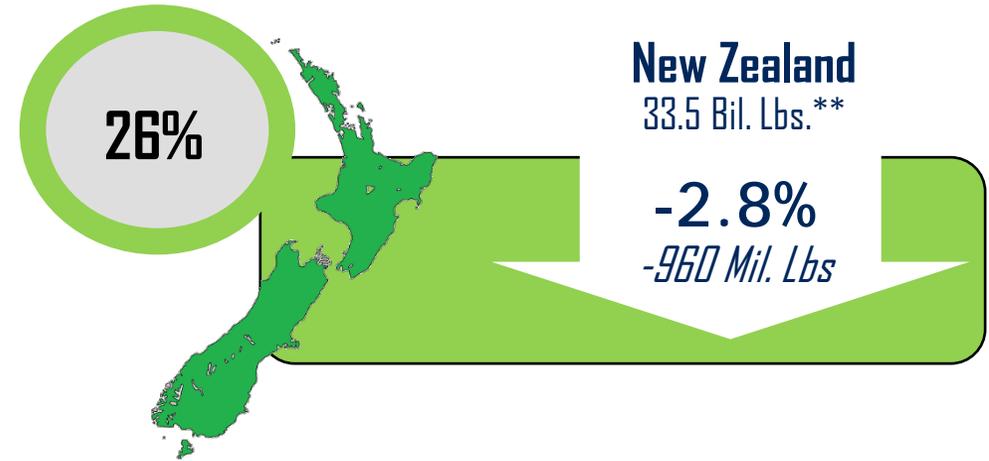
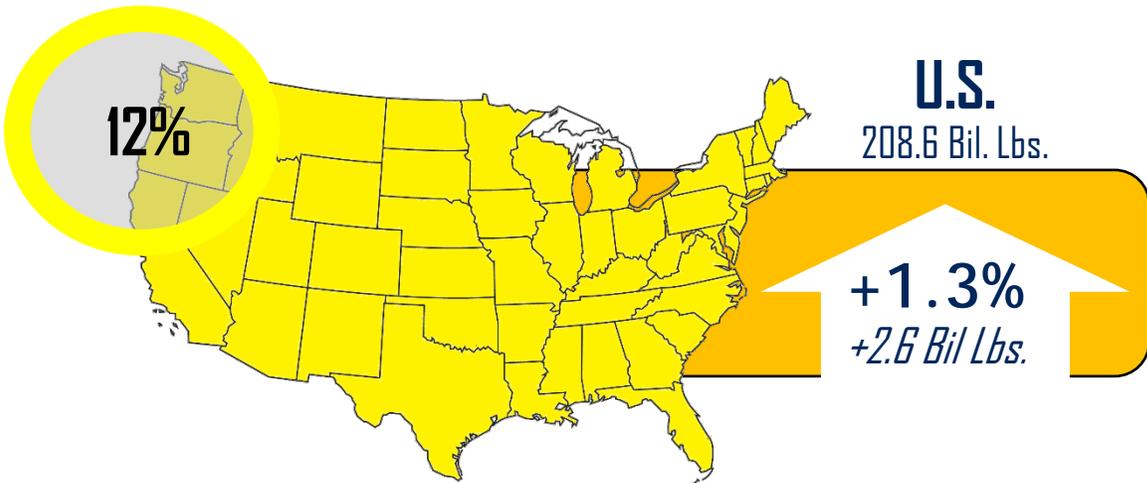




Milk Production and Market Outlook

U.S. and EU Milk Production Increasing, Oceania Declining

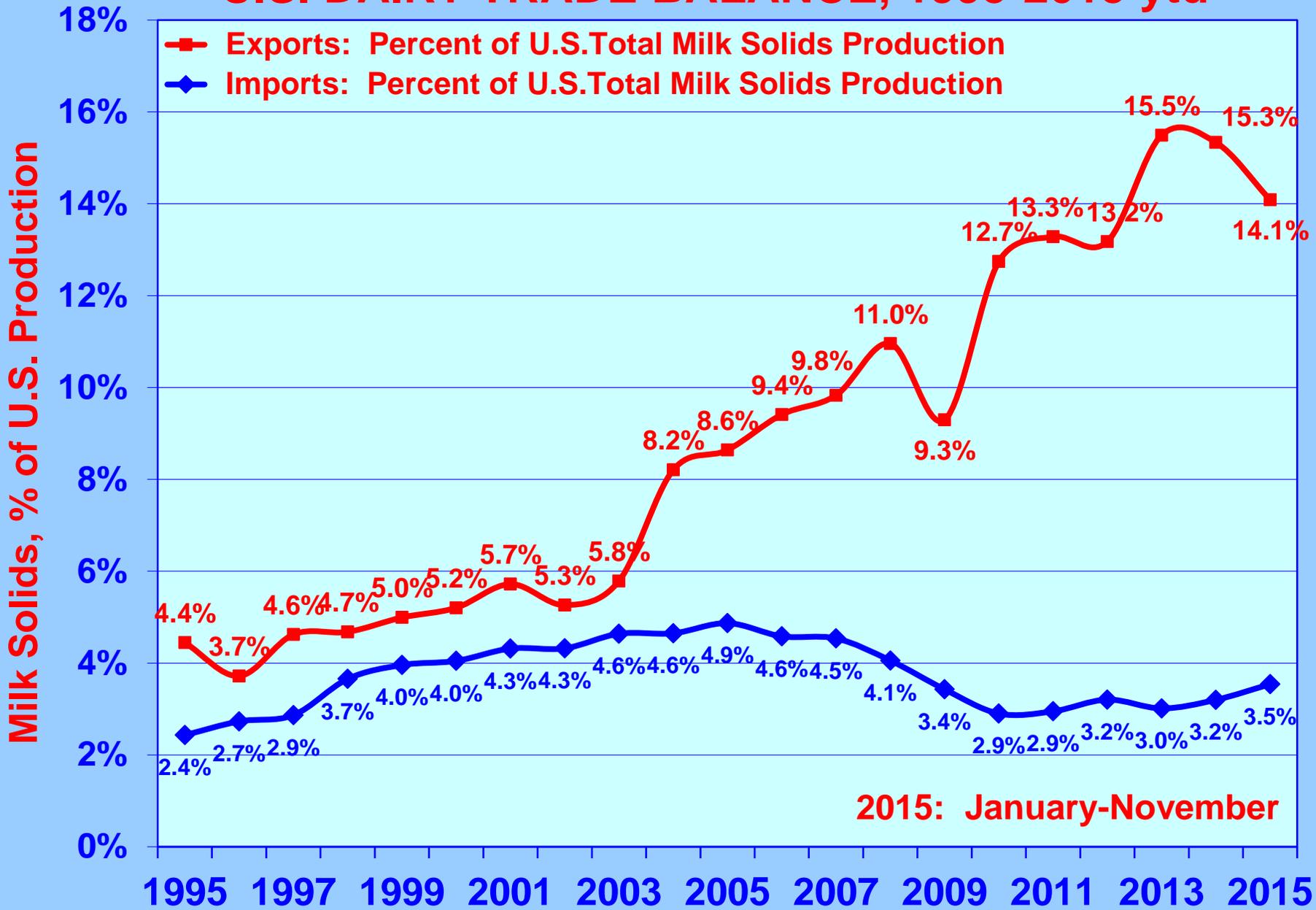
EU production growth pushes global dairy into uncharted territory



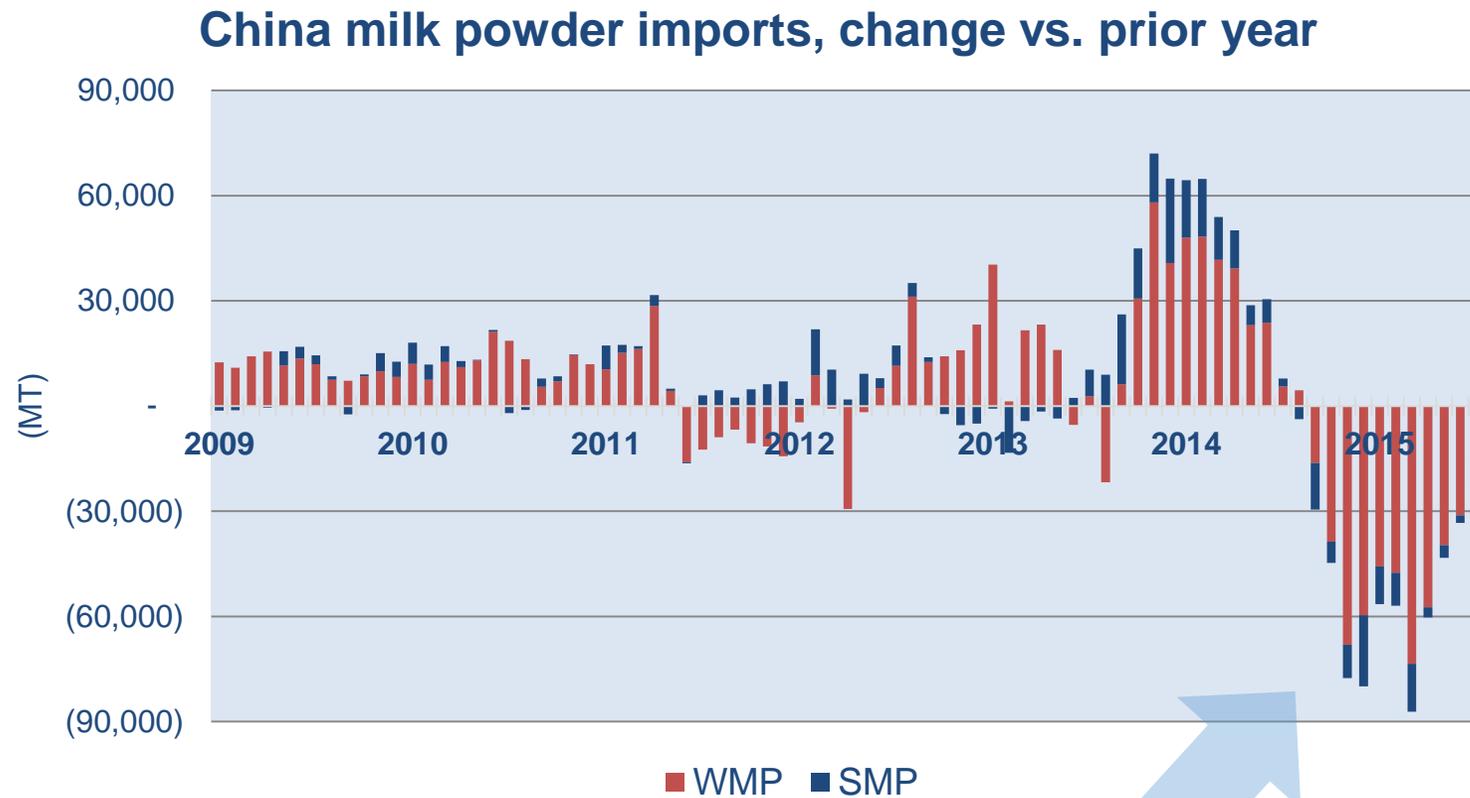
Circled Area: 2010-2014 Share of Global Dairy Trade

Source: UN ComTrade, USDA, EuroStat, DCANZ, and DairyAustralia. **Reflects 2015/16 marketing year (July-Jan)

U.S. DAIRY TRADE BALANCE, 1995-2015 ytd



The Aftermath of China's Buying Bubble

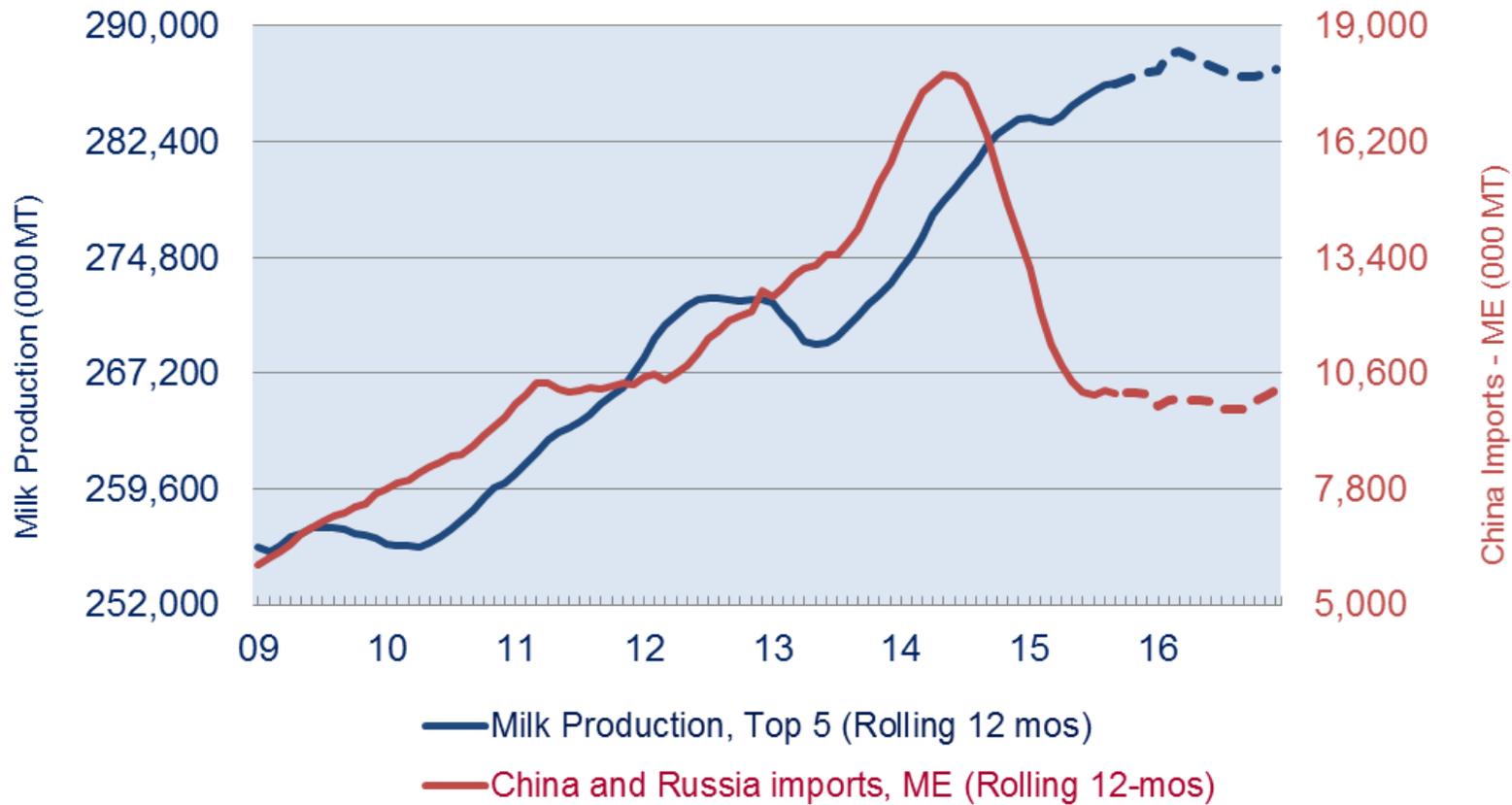


Russia Ban Forces Reallocation of EU Supply



Gap will remain large in 2016

Milk Production (Top 5) vs. China/Russia Imports



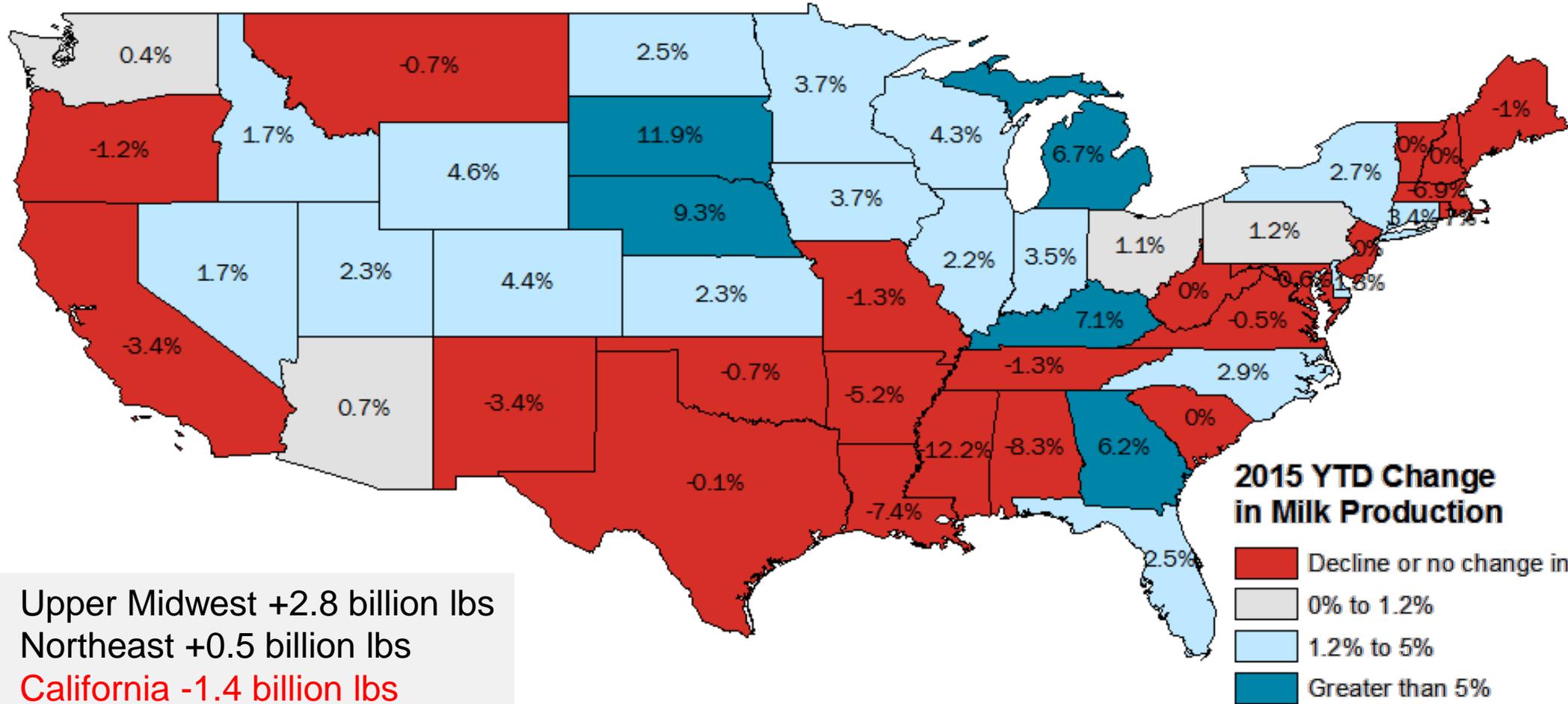
Top 5 includes EU-28, United States, New Zealand, Australia and Argentina. Oct 2015-Dec 2016 projected.
Source: USDEC, Global Trade Atlas

Major Headwinds for U.S. and World Dairy Exports

- Large drop in China's imports from 2013 – 2014
- Russian food embargo, began August 2014
- End of E.U. production quotas, April 2015
- Collapse of petroleum prices
- Drop in world dairy product prices since 2013 – 2014
- Increased competition from E.U. and New Zealand exports
- Strong U.S. dollar
- “New normal” for world markets?

U.S. Production: A Tale of Two Milksheds

2015 Total U.S. = 208.6 Billion Pounds (+1.3% YoY)

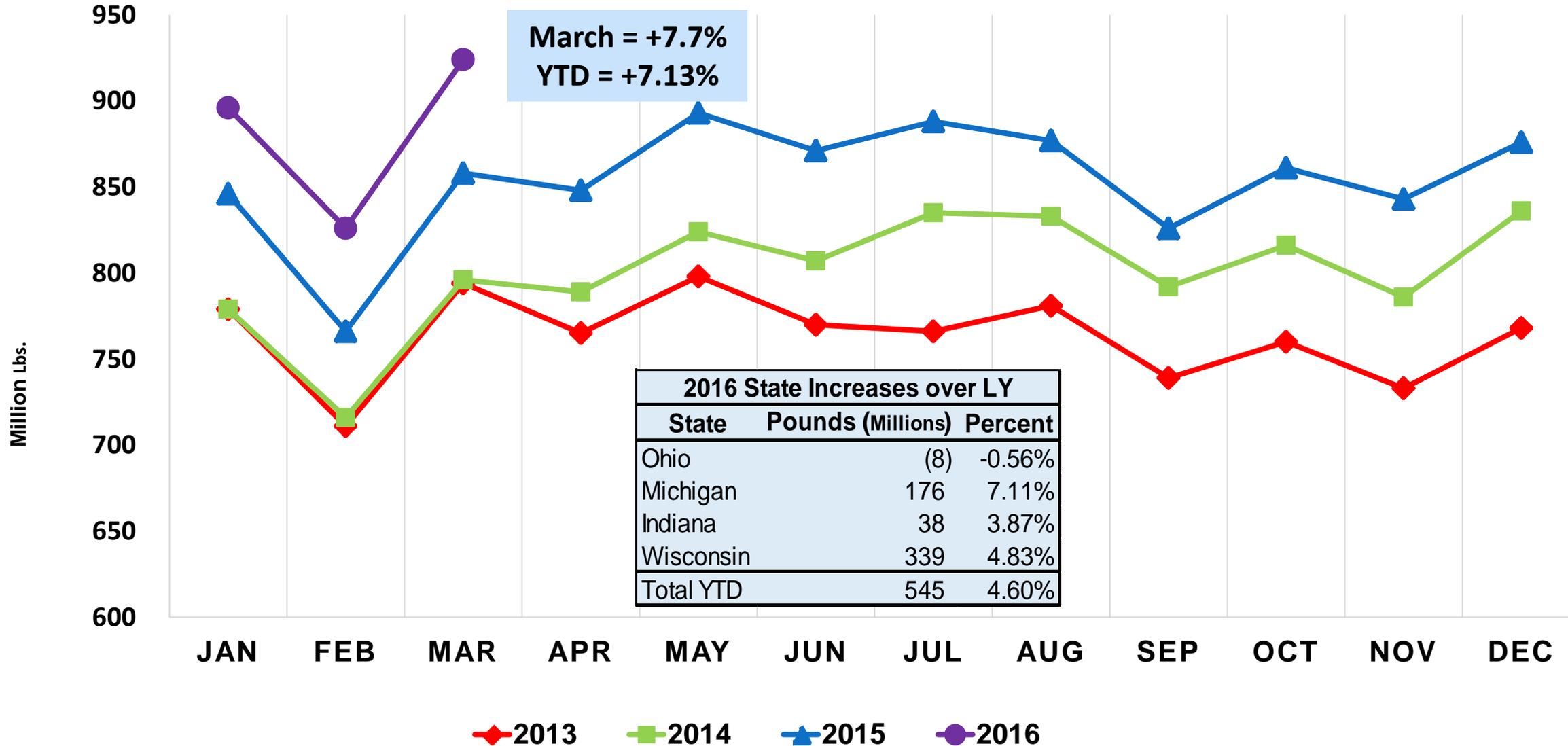


Upper Midwest +2.8 billion lbs
 Northeast +0.5 billion lbs
California -1.4 billion lbs

STATE MILK PRODUCTION (Adjusted for Leap Year)

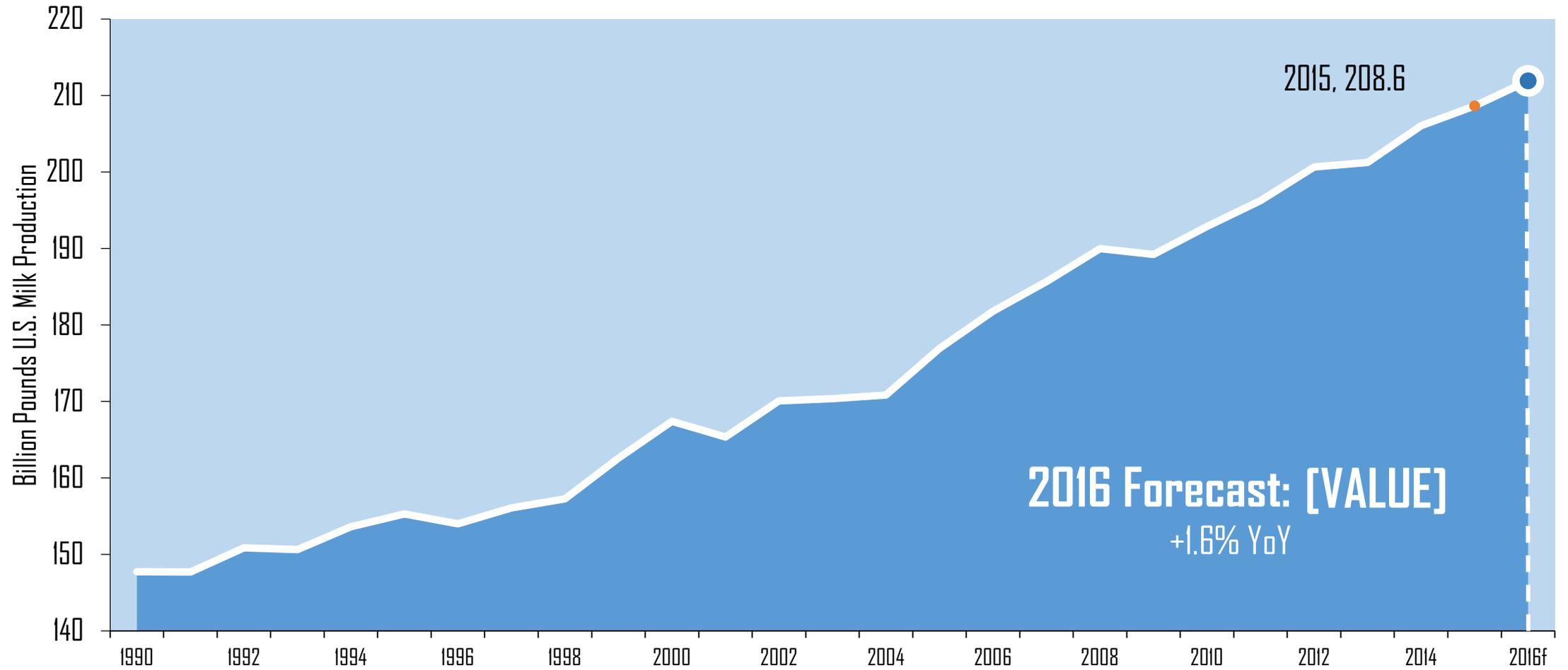


Michigan Monthly Totals



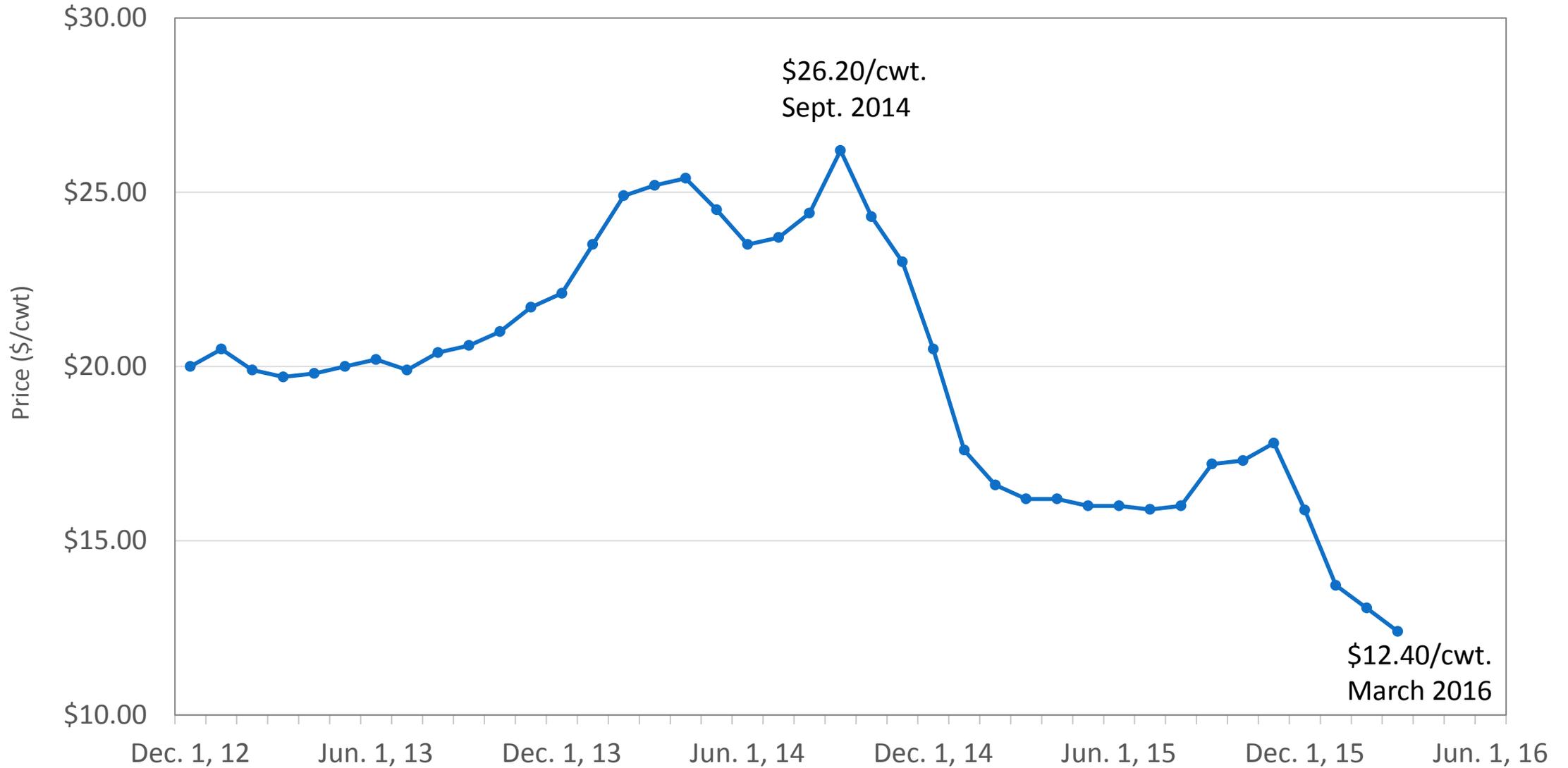
USDA Projects Another Record Year in 2016

+3.3 billion pounds (1.6%) year-over-year, 2015 was up 1.3%



Since 2000 average growth rate is 1.6%, Max was 3.6% in 2005 and Low was -0.4% in 2009

Changes in Milk Prices in Michigan, Dec. 2012 - Mar. 2016

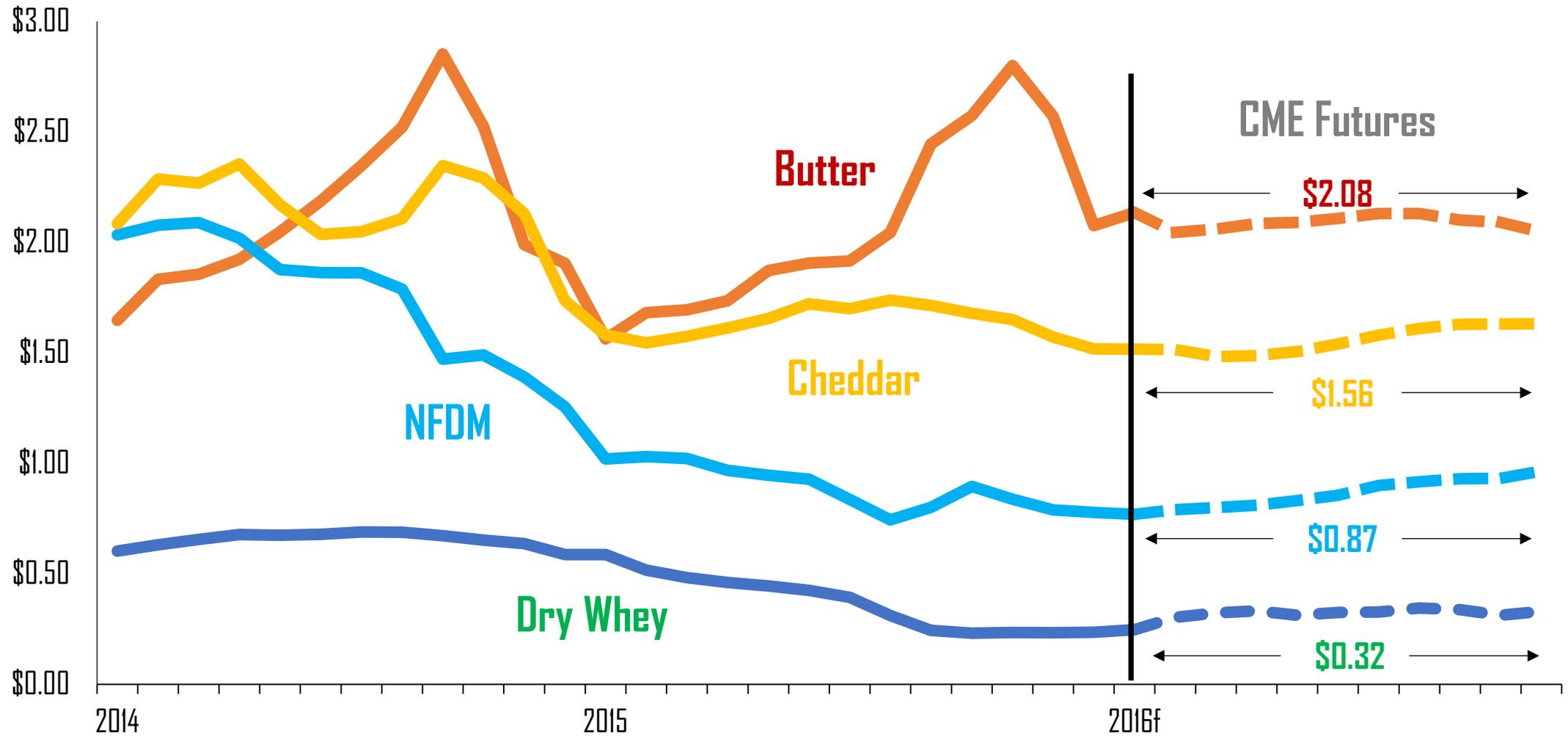


U.S. and EU Milk Prices

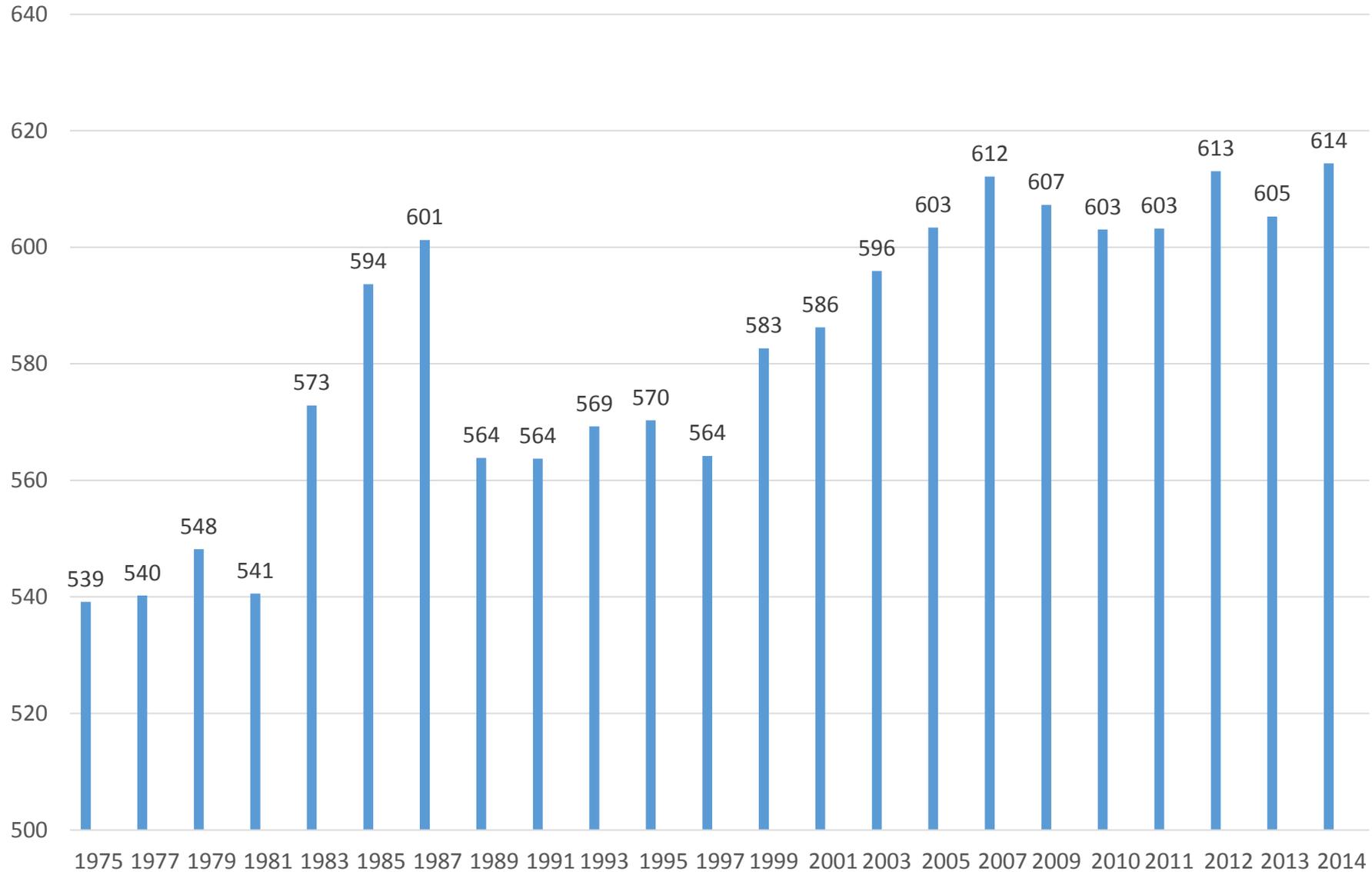


Uncertainty on When Prices Will Improve Significantly

Futures curve in 2016 mostly flat

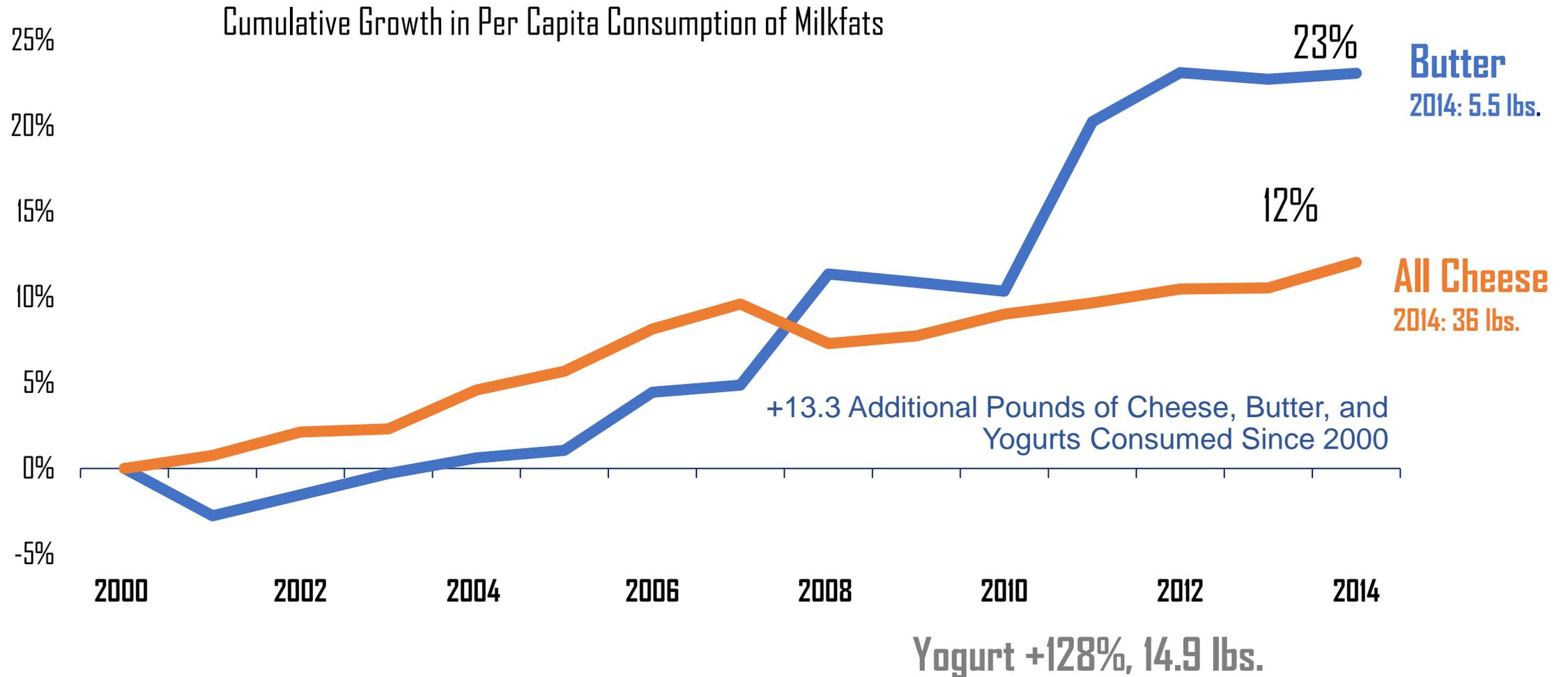


Dairy products: Per capita consumption, United States, 1975-2014 (in pounds per person)



In U.S. the \$tory Has Been About Milkfats

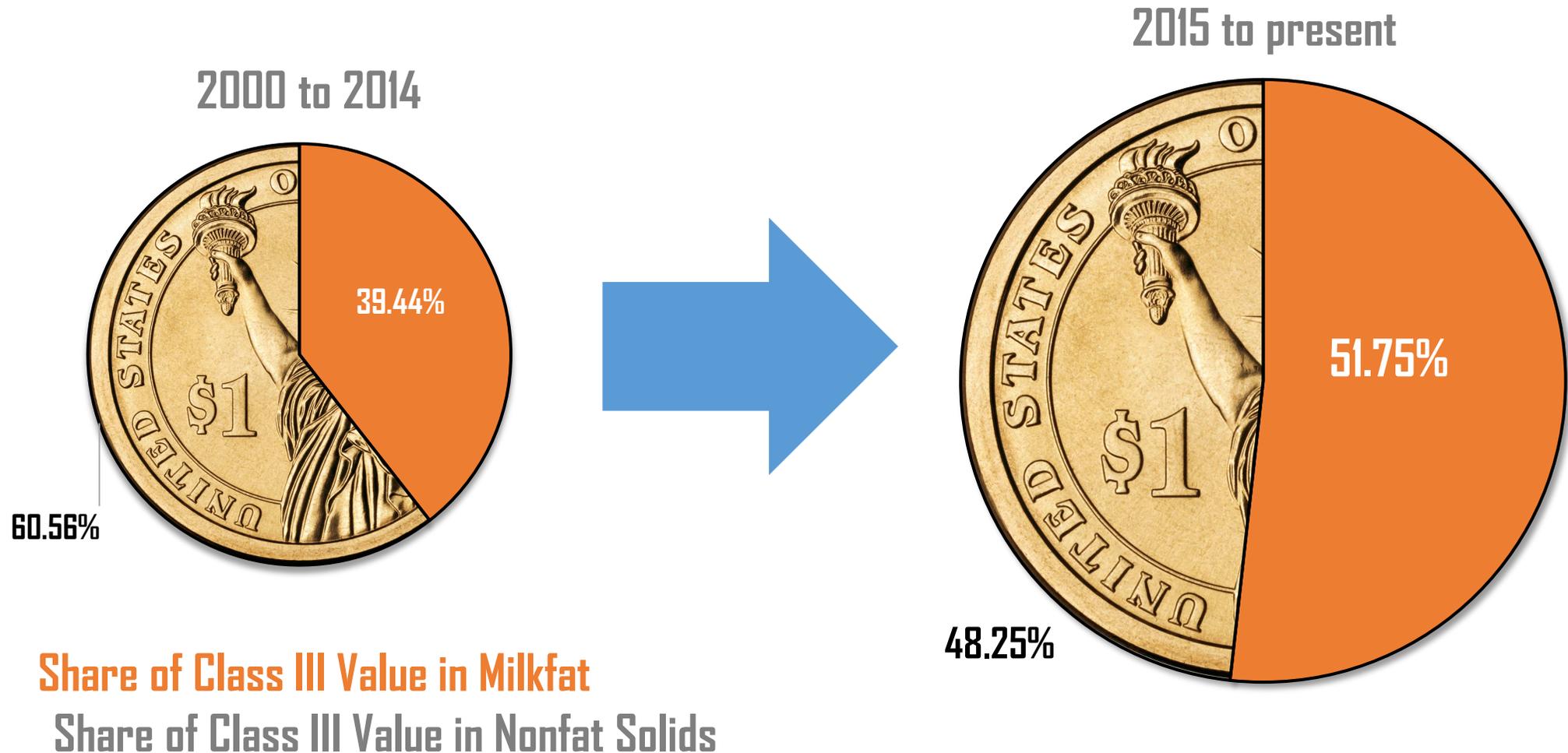
Domestic butter use now accounts for nearly 1/5th of milkfat consumption



Source: USDA ERS. 56.4 lbs/person in 2014 compared to 43.1 lbs/person in 2000

Milkfats Were A Larger Portion of Milk Checks in 2015

Contribution of Milkfat to Class III Price





Est. 1916

100 Years

MMPA

MICHIGAN MILK PRODUCERS ASSOCIATION





POET BIOREFINING – CARO

POET and the RINS Expansion

Emily Boynton
Quality Manager
May 18, 2016



AGENDA

- POET
 - Who are we
 - POET Caro
 - What do they do and what we make
- RFS/ RINS Refresher
- Caro RINS Project
 - Project Objectives
 - Scope of Work

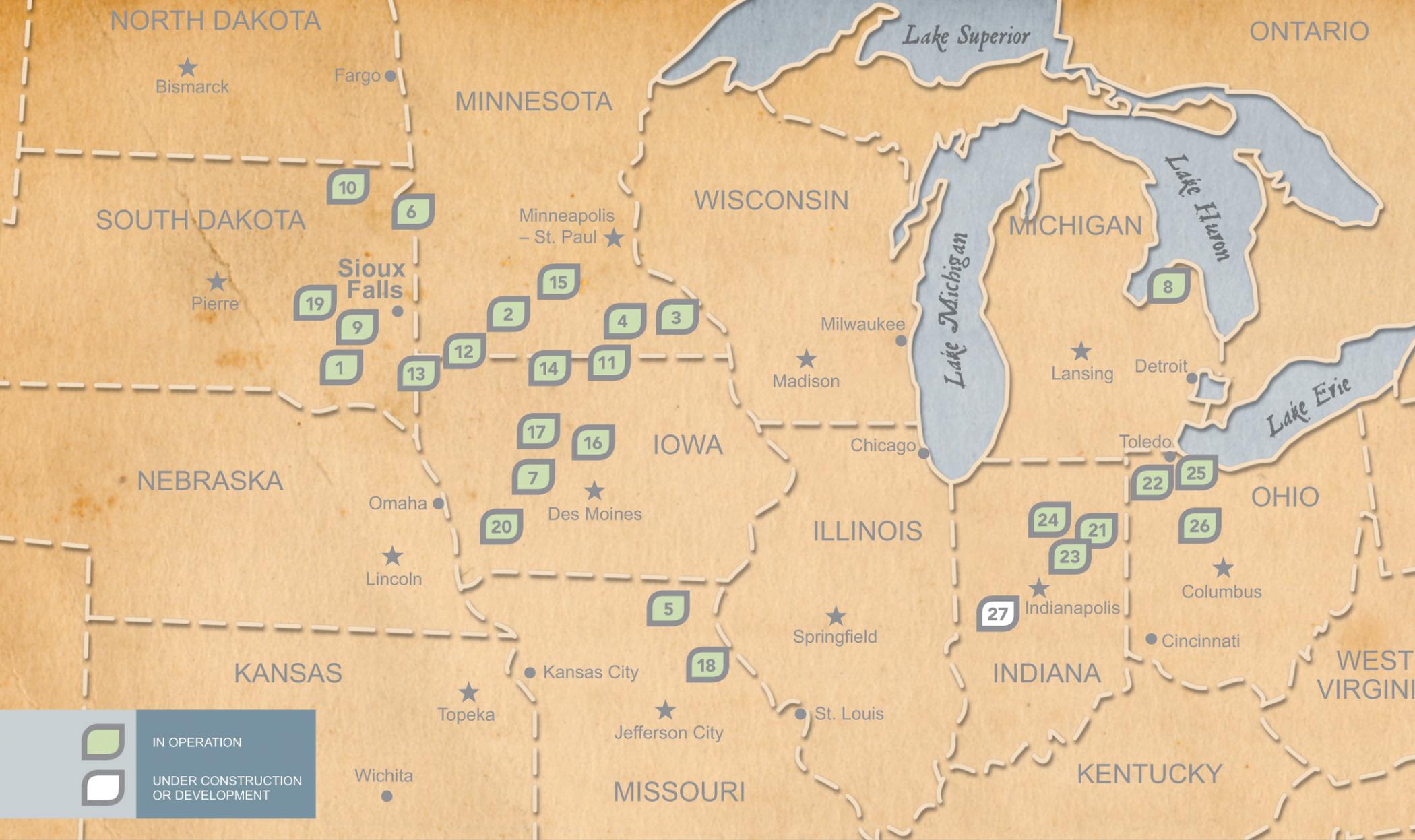
Confidential - Property of POET



About POET

Company Profile

- 20+ years ethanol industry experience
- 1.7 billion gallons of production capacity
- Largest ethanol producer
- Over 1,500 team members
- 10,000 farmer investors
- 30,000 farmers supply grain
- Integrated business model
- Low cost producer
- Technology leader
- Every project has been successful



POET BIOREFINERY LOCATIONS

TOTAL GALLONS REPRESENTED: 1.7 BILLION

- | | | | | |
|--------------------|-------------------|---------------------|-------------------------|-------------------|
| 1 Scotland, SD | 7 Coon Rapids, IA | 13 Hudson, SD | 19 Mitchell, SD | 25 Fostoria, OH |
| 2 Bingham Lake, MN | 8 Caro, MI | 14 Emmetsburg, IA | 20 Corning, IA | 26 Marion, OH |
| 3 Preston, MN | 9 Chancellor, SD | 15 Lake Crystal, MN | 21 Portland, IN | 27 Cloverdale, IN |
| 4 Glenville, MN | 10 Groton, SD | 16 Jewell, IA | 22 Leipsic, OH | |
| 5 Macon, MO | 11 Hanlontown, IA | 17 Gowrie, IA | 23 Alexandria, IN | |
| 6 Big Stone, SD | 12 Ashton, IA | 18 Laddonia, MO | 24 North Manchester, IN | |

POET Biorefining – Caro

- First ethanol plant in Michigan
- 14th POET plant built
- Consumes 21 million bushels of local corn annually
- Produce 58 million gallons of ethanol annually
- Produce 8820 tons of corn oil annually
- Produces 153,000 tons of distillers grains annually

Corn Receiving



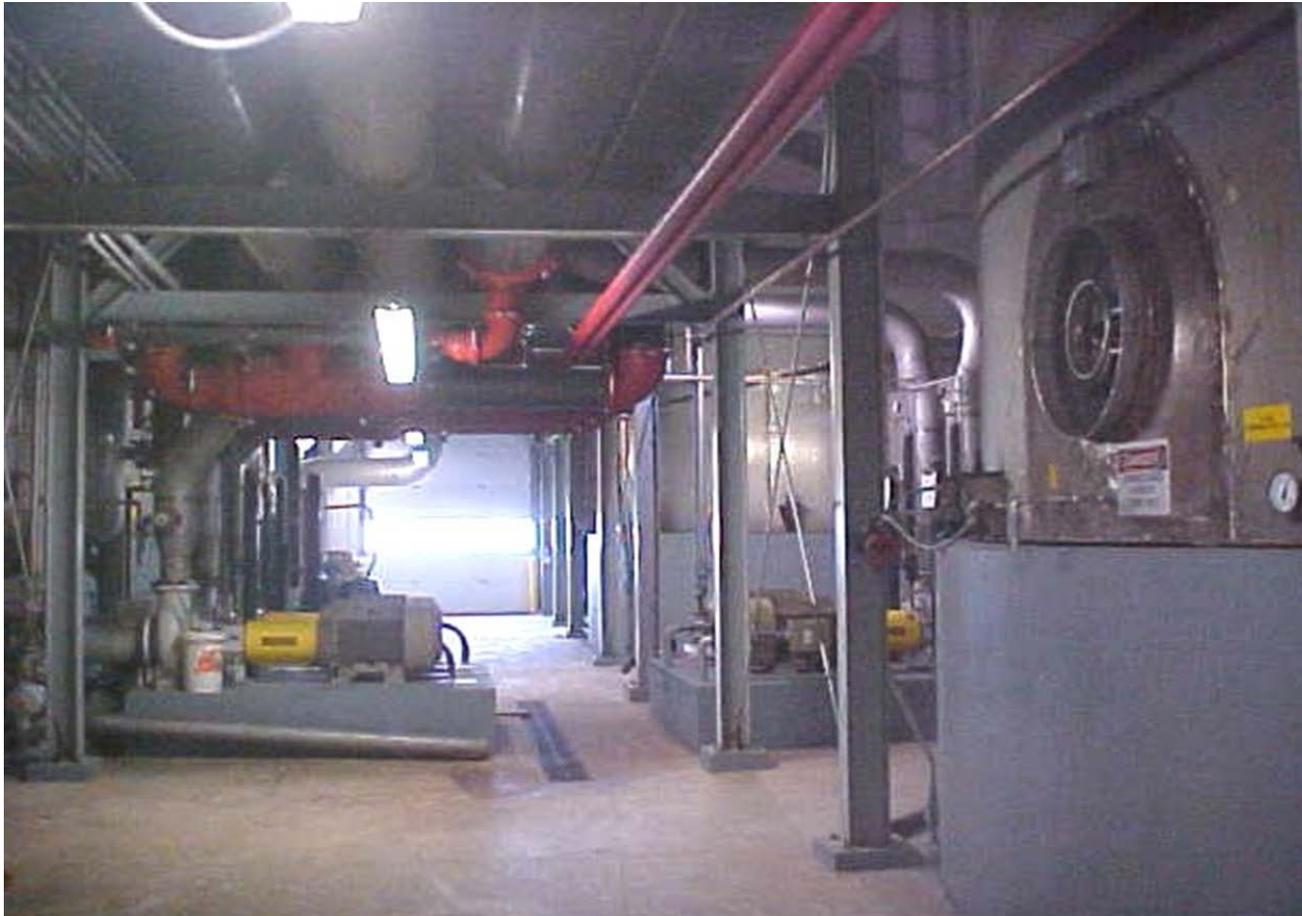
Hammer Mill



Slurry



Fermentation



Distillation



Centrifuges



Evaporation



Corn Oil



Dehydration Technology



Products and Co-products

Ethanol

Meets ASTM D4806
EQA Accreditation

Dakota Gold and DDGs

Meet feed tag spec with protein <27, Fat <6 or 6-9, Mst <12.0

Corn Oil

FFA<15, MIU>3.0, sulfur and phosphate <50ppm, iodine >118



Co Products

Syrup

Protein >5, Fat >3, mst <75%

Wet Grains

Protein <9, Fat>.05 mst <72%



RINS Expansion



Bottom Line

1. Completed by 8/1/16
2. Potential to add 2-3 positions moving from 48-51
3. Grind about 3.2 M more bushels of corn annually (21M to 24M)
4. Produce about 9 M more gallons of ethanol annually (58 to 66.7M)
5. Produce approximately 1,300 more tons per year corn oil (8820 to 10,056)
6. Produce approximately 27,200 more tons per year of feed. (153,000 tons to 180,200)

Questions?



Michigan's Terrestrial Invasive Species (TIS) Management Plan

Sue Tangora
DNR Forest Resources Division
May 18, 2016



Draft:

Michigan's Terrestrial Invasive Species State Management Plan

Coordinated by the Terrestrial Invasive Species Core Team



2016-2021

Public Review

May 16 – June 24, 2016

A Cooperative Effort of the
Michigan Department of Agriculture and Rural Development
Michigan Department of Environmental Quality
Michigan Department of Natural Resources
Michigan Department of Transportation
In Consultation and Partnership with Other Interested Parties

Feral Pig Photo Credit- Chris Grady



Michigan's TIS Management Plan: who will use it?

- Citizens
- Elected Officials
- Partners
 - Academia
 - Industry
 - Local, federal and tribal governments
 - Non-governmental organizations
 - Other state departments
 - Private landowners
- Staff





Creating the Plan

- TIS Core Team
 - DNR
 - DEQ
 - DARD
 - DOT
- Partner Survey – February, 2015
- Partner Review – December, 2015





How is Michigan's TIS Management Plan organized?

- GOALS (4)
 - Activity Areas (6)
 - Objectives (19)
 - Strategic Actions (62)

GOALS

Prevention: Prevent the introduction of new terrestrial invasive species to Michigan.

Early Detection and Response: Detect terrestrial invasive species as they arrive and respond to prevent their establishment and spread in Michigan.

Control and Restore: Control terrestrial invasive species to minimize the harmful environmental, economic and public health effects resulting from established populations. Restore habitats as appropriate.

Collaborate: Encourage collaboration to optimize solutions and share resources, knowledge and skills.



ACTIVITY AREAS

- Risk Analysis
- Management Practices
- Monitoring and Research
- Outreach and Education
- Regulation and Policy
- Leadership and Coordination





Timeline

- Public review – May 16 – June 24, 2016
- Final plan this summer
- Updated every five years
- Accomplishments published in annual report



THANK YOU

Questions?





Economic and Agricultural Benefits of Wind Farms

Skip Pruss

5lakes
energy

Wind Energy – A Better Choice

Benefits

- Wind energy is the least cost energy option in Michigan
- Wind energy doesn't pollute
- Wind energy doesn't consume water

Burdens

- Noise
- Flicker
- Bird & bat mortality
- Aesthetics

Benefits of Wind Energy

- County tax base can increase significantly
- Schools and local government receive tax revenue
- Families participate in land royalty payments

Of Michigan's 83 counties, Gratiot, Huron and Tuscola and counties – the counties with the most wind farms – experienced the largest tax base increase from 2011 - 2015.

Increase in tax base 2011 – 2015

1. Gratiot - \$357,991,962 +38.48 percent
2. Huron - \$559,599,077 +34.22 percent
3. Tuscola - \$364,576,534 +26.02 percent

State average all counties +1.28 percent

Source: MI Dept. of Treasury

Economic Benefit of Wind Energy to Communities

Gratiot County

- *\$16.6 million in new tax revenue from 2012 – 2014*

Source: Greater Gratiot Development

Huron County

- *\$18.89 million in new tax revenue in 2014 - 2015*

Source: Huron County

Tuscola County

- *\$4.07 million in new tax revenue in 2014*

Source: Tuscola County

How is the money spent?

Huron County

- County operating expenses
- Schools
- Roads
- Libraries
- Seniors
- Veterans
- Drug Task Force
- County parks
- 911 EMG

Tuscola County

- County operating expenses
- Bridge/street repair
- Emergency services
- Intermediate school district
- Akron Fairgrove schools
- Reese schools
- School Debt
- Fire/Ambulance services
- Township operating expenses

Local Businesses Benefit from Wind Farms, Too

- **Fleet vehicles are serviced at local service stations**
 - Oil changes
 - Brakes/Tires/Mufflers
- **Hardware Stores**
 - Corporate accounts at local hardware stores for necessary supplies
- **Restaurants**
 - Staff meetings are often catered from local restaurants



“In 2006, our revenues at Holiday Inn Express in Bad Axe were less than \$900,000; in 2014 revenues approximated \$1.7 million”

Gary Malchow

Why Wind Revenue Matters

State policymakers control the purse strings to resources that local governments rely upon to provide services.

- In the past, state distributions to local governments have been reduced
- State policymakers are attaching new strings as a condition of receiving funds

Revenue from wind farms support local communities and make up for reductions in state support!

Wind farms support Michigan agriculture

- Wind farms keep land in agriculture.
- Wind projects preserve open spaces.
- Wind farms help preserve family farms.
- Wind energy helps keep young people interested in farming.
- Wind projects benefit rural communities.



Benefits to Farmers

- Wind - A drought resistant and flood proof cash crop
- Provides certainty and peace of mind to landowners
- Improves roads and culverts
- Only occupies about 1 acre per turbine for towers and access roads after construction – does not greatly impact crop and livestock production



Wind Power Reduces Water Use

The 144 coal plants and 38 operating nuclear plants on the Great Lakes account for 76 percent of all water withdrawals from the Great Lakes Region

Every Megawatt hour of wind energy

- ✓ Avoids 8,420 gallons of water used to cool coal plants
- ✓ Avoids 270 gallons of water lost

Source:

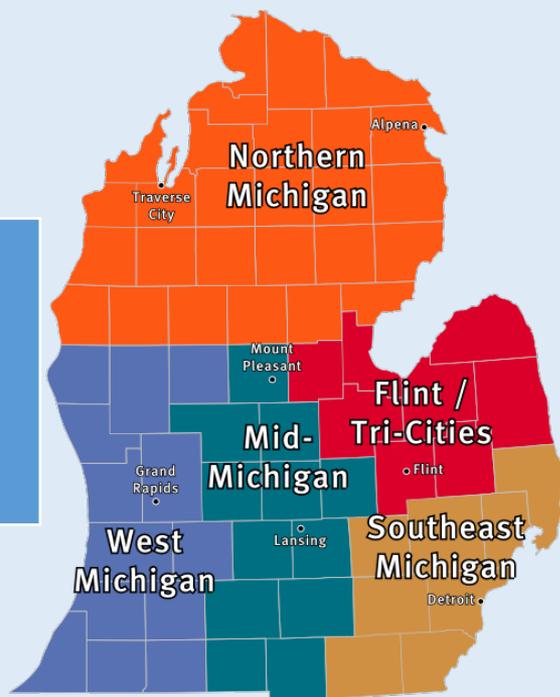
National Renewable Energy Laboratory

Lawrence Berkley National Laboratory

Michigan Fossil Fuel Expenditures

Money spent on wind energy stays in Michigan,
multiplying through our economy

Michigan spends
about \$22 billion per
year importing fossil
fuels.



Money spent on fossil
fuels leave Michigan's
economy.

Businesses Want More Renewable Energy

- Apple, Google, Facebook, Walmart, Microsoft, Amazon, Costco, Johnson & Johnson, Proctor & Gamble, Starbucks, Steelcase, and many other companies have 100 percent zero carbon goals.
- Fifty-one Fortune 500 companies recently signed the ***Corporate Renewable Energy Buyers' Principles: Increasing Access to Renewable Energy***
- Over 500 U.S. companies are now deriving 100 percent of their electricity from green power sources, including Intel, Kohl's and Staples. (2014 EPA Green Power Partnership)

Renewable Energy is the Biggest Source of New Electricity Supplies

- Renewable energy accounted for 68 percent of all new electric generation resources added to the U.S. grid in 2015.
- Wind and solar power installations are currently emerging faster than any other electric power source.
- The transition to clean energy resources is underway



www.5lakesenergy.com



www.5lakesenergy.com