The Outlook for Global Biofuels Markets

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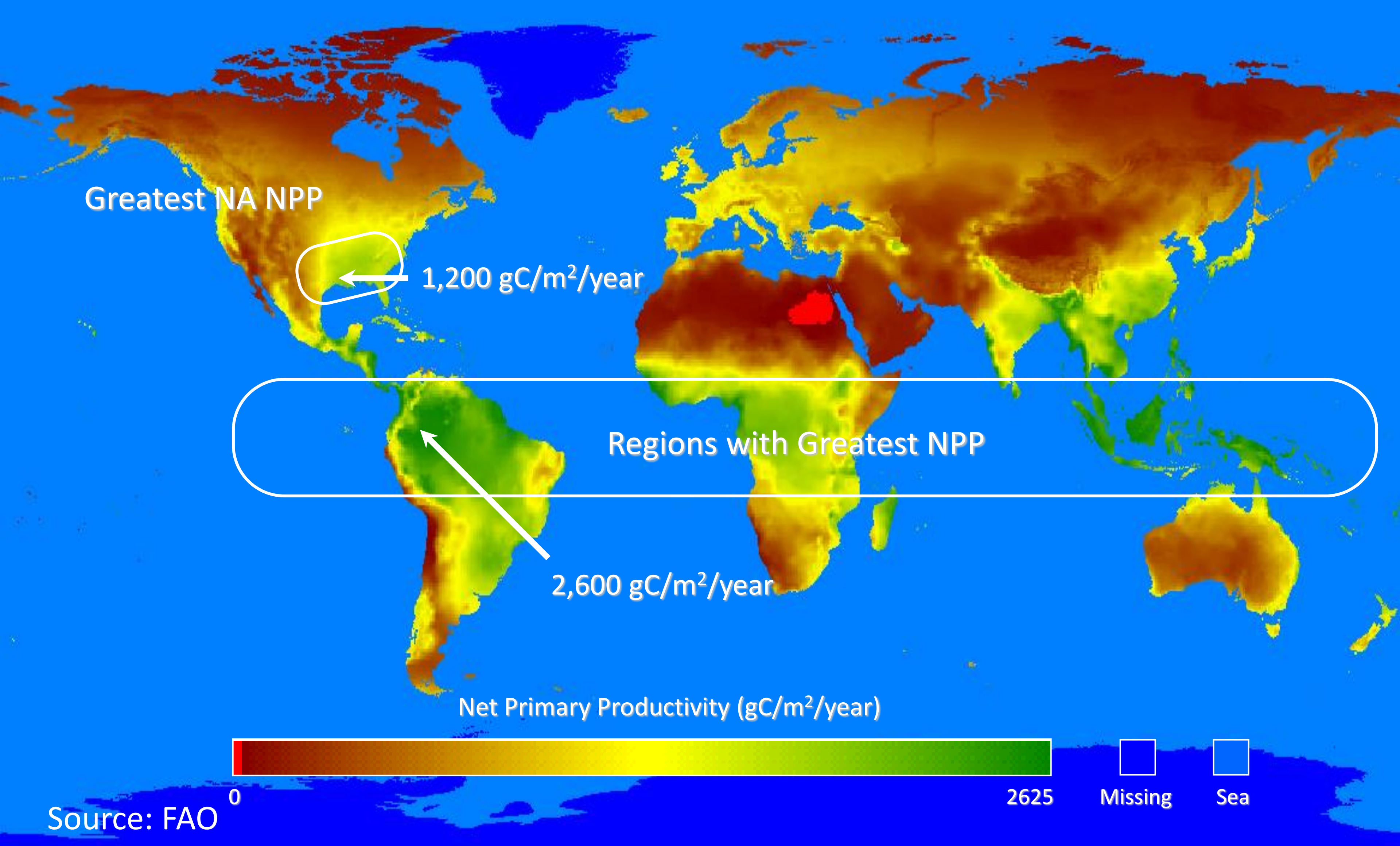
Major Issues in Ethanol Markets

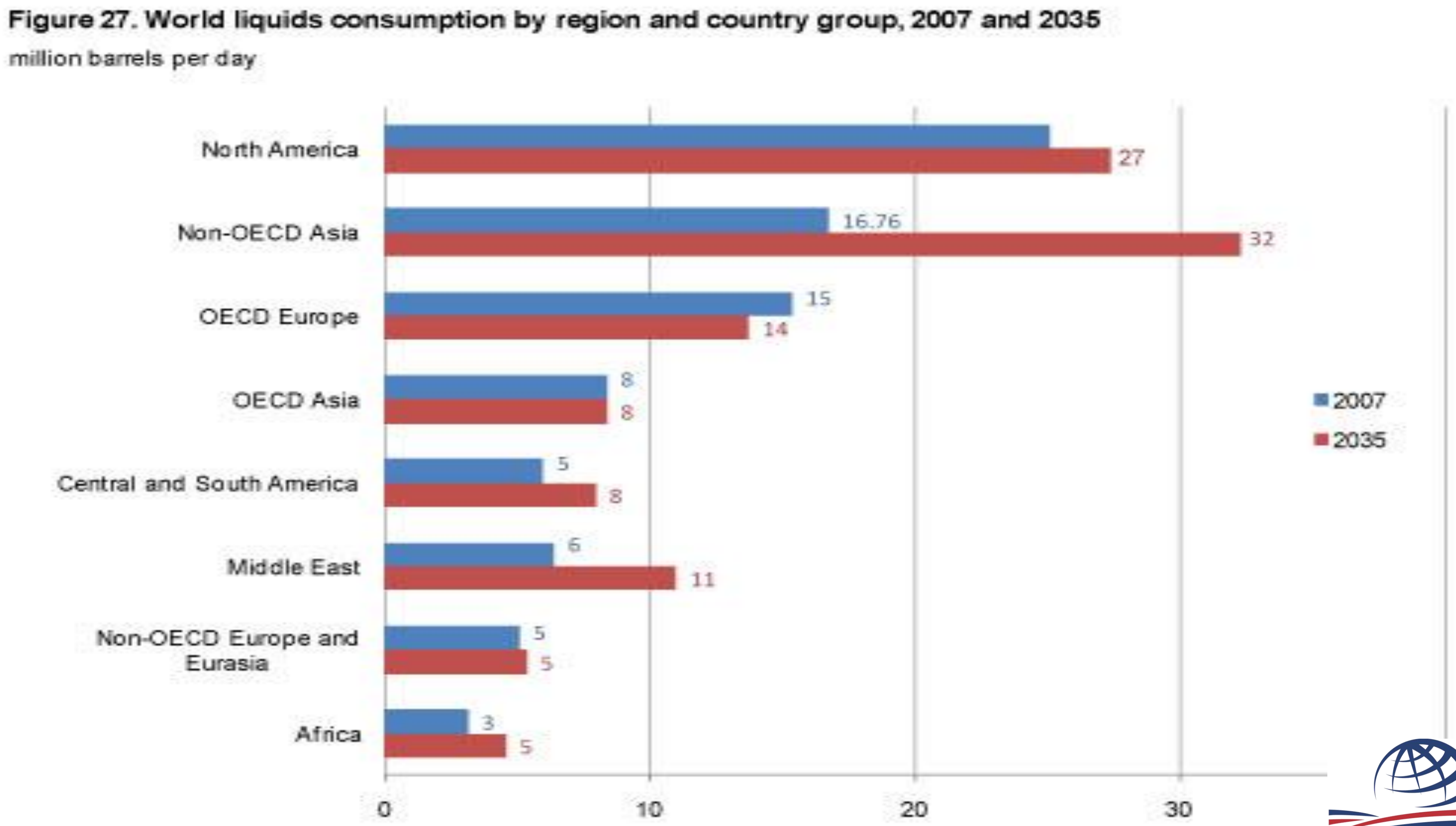
- Major markets maturing
- Smaller markets: free trade or protection?
- U.S. RFS2 Ethanol Capacity
- Uncertainty in EU
- Investment in Brazil Sugarcane expansion
- Ability to penetrate Asian markets

Tropics have Advantage in Biomass Production Potential



Source: FAO

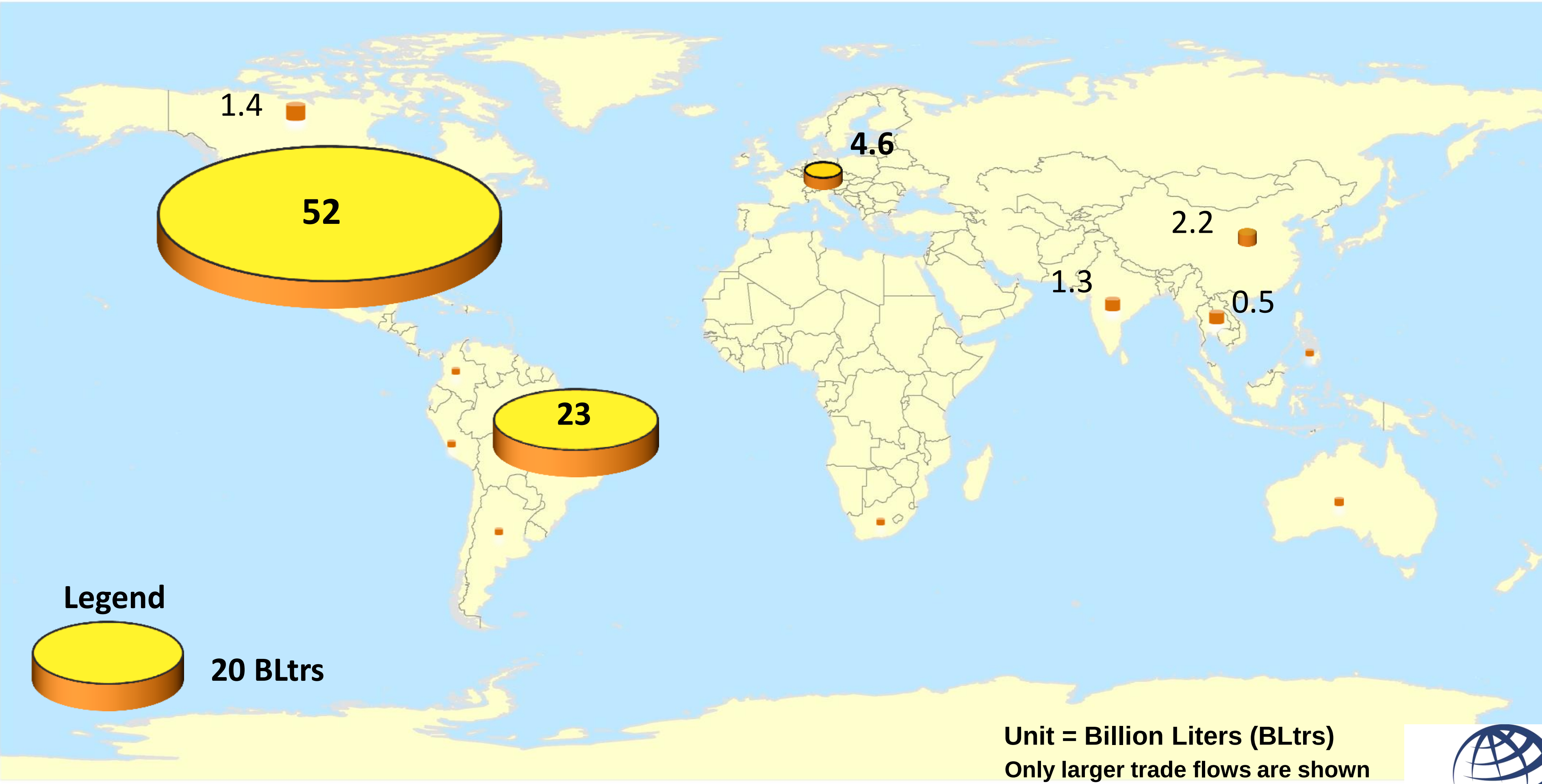
Liquid Transport Fuel Use



Source: EIA 2011 Energy Outlook

2011 Fuel Ethanol Production

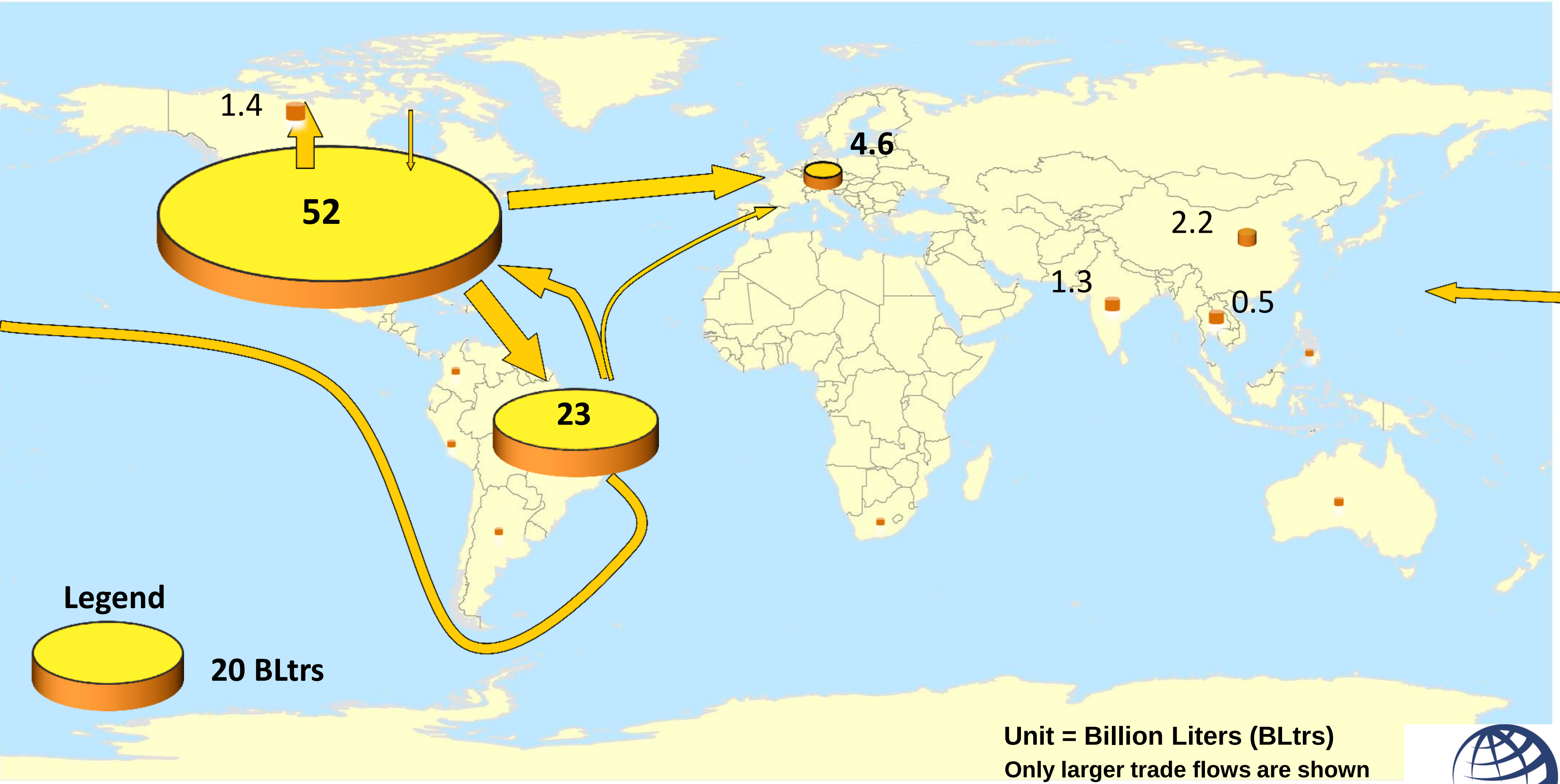
The US has rapidly outgrown Brazil to become the world's largest ethanol producer and consumer.



Source: FAS Annual Biofuels Reports and FAS/Washington staff analysis.

2011 Fuel Ethanol Production & Key Trade Flows

The US has rapidly outgrown Brazil to become the world's largest ethanol producer and consumer. Trade….



Source: FAS Annual Biofuels Reports and FAS/Washington staff analysis.

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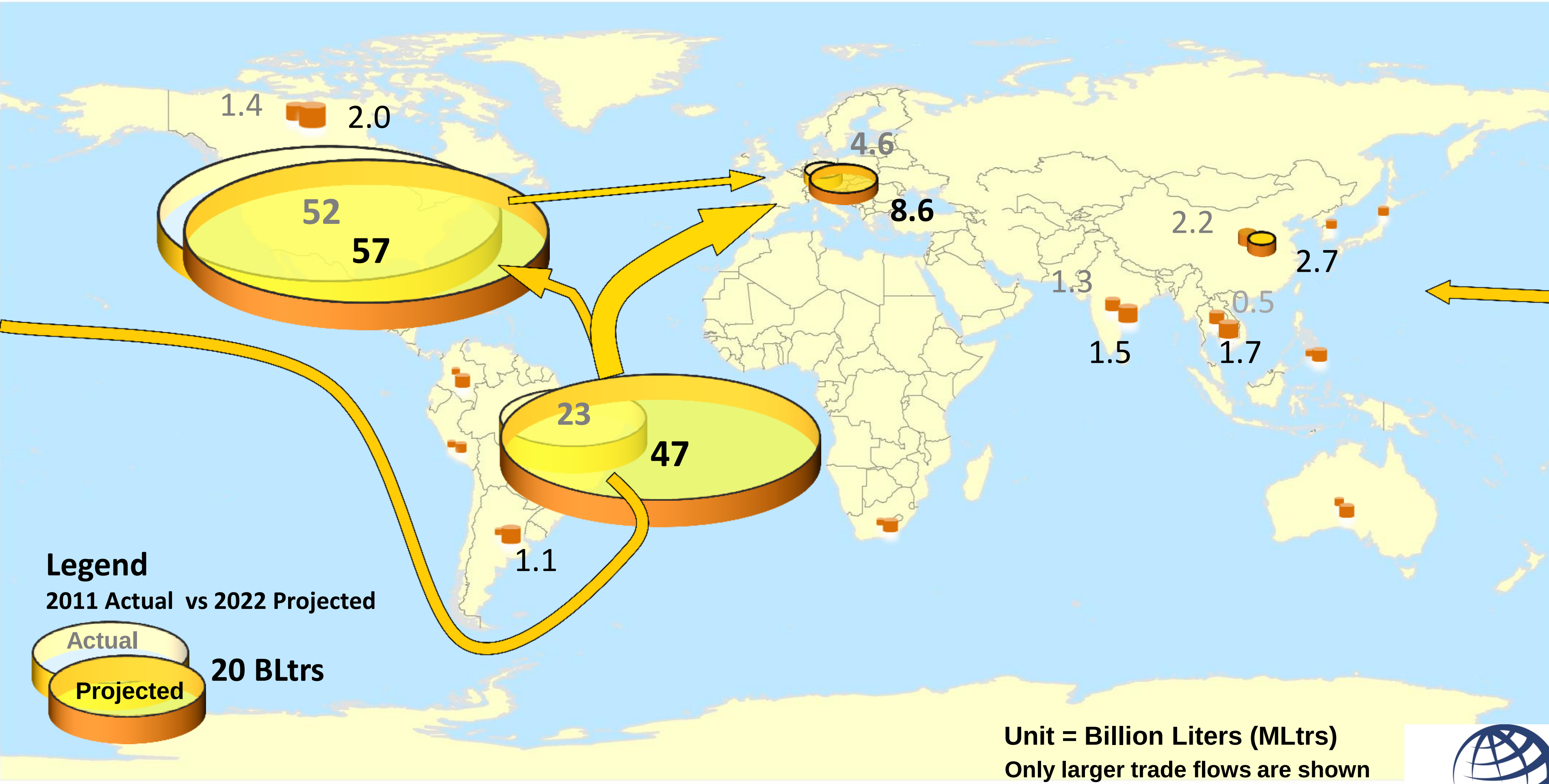
2022 Fuel Ethanol Outlook

US remains largest producer and consumer, but Brazil closes the gap.
Brazil reasserts its position as largest exporter, and US becomes net importer.



Source: Outlook based on FAS/Washington staff analysis and generally consistent with USDA's 2012 long-term projections.

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44 Countries Have Biofuel Mandates

Country	Ethanol	Biodiesel
Argentina	E5 (2010)	B5 (2010) – B7
Brazil	E20 – E25	B5
Canada	E5 Ethanol (Dec. 2011) E7-E8 Provincial Mandates	B2 national B4 Provincial
Colombia	E-10 in major cities	B5 nationwide B8 –B10 provinces
Costa Rica	E5; E10 (2011)	B10/B15 Future
Guatemala	No mandates (E-10 legislation failed)	NO
Jamaica	E10	NO
Mexico	E6 (2012) 3 cities volume mandates	NO
Paraguay	E-24 (2009) if local supply	B5 pending supply
Peru	E7.8 (2011)	B5 (2011)
Uruguay	E5 (2014)	NO
Venezuela	E7	NO
EUROPE		
France	E10	
Germany	E10 (2011)	6.25% biofuels
Latvia	E5	B5
Portugal	No	B10
Asia Region		
Australia	E10 (Regional)	B5 (2012/Regional)
India	Proposed target of 20% biofuel blending by 2017	
Indonesia	E3 (2010) 10% biofuel 2020/ 15% 2025	B2.5 (2010)

Source:
FAS 2011 Annual Biofuel Reports

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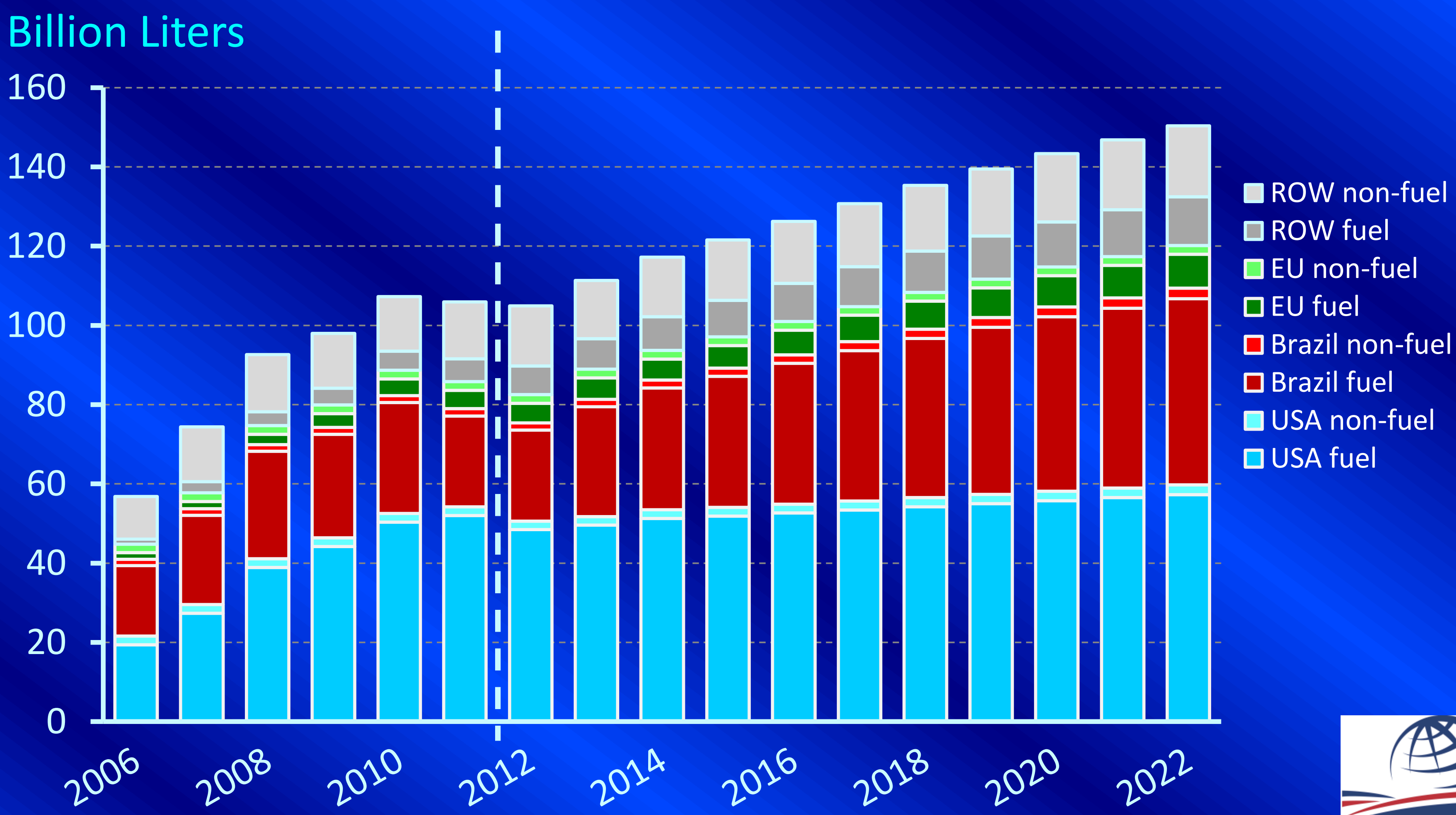
World Ethanol Production

Major Markets and Rest of World (ROW)



Sources: FAS staff analysis, FOLicht, OECD-FAO; US fuel ethanol (WASDE, 2012 USDA Baseline)

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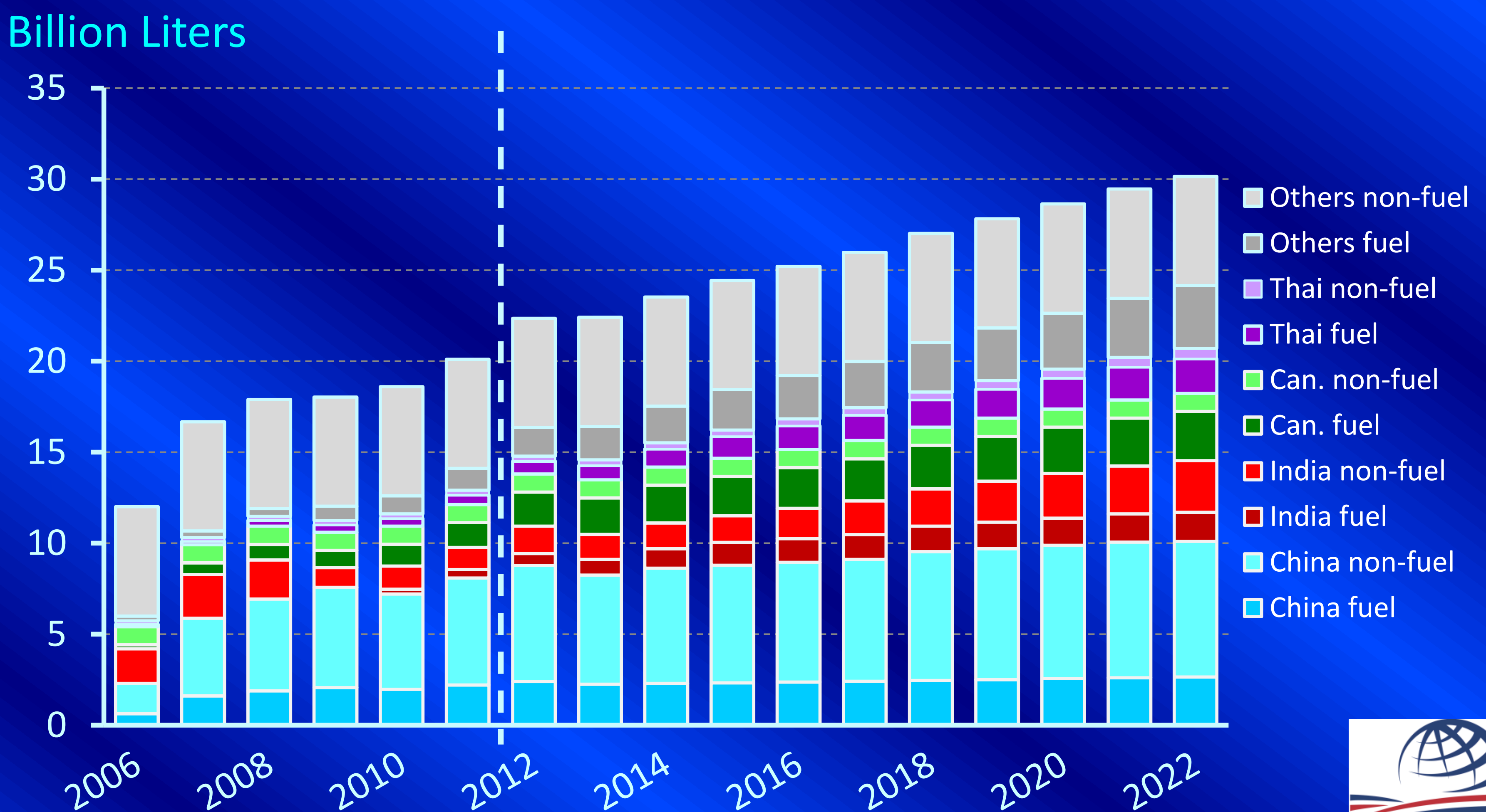
World Ethanol Production

Secondary and Minor Markets



Sources: FAS staff analysis, FOLicht, OECD-FAO; US fuel ethanol (WASDE, 2012 USDA Baseline)

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United States (expectations and key issues)

Global Production & Trade in 2013 and Beyond

- *Remain largest producer & consumer*
- *E15 enlarges market potential by additional 6 BG (22 BL)*
- *Prices should go lower*
- *Export potential*

Key Market Determinates in 2013 and Beyond

- *Blendwall concerns and adoption of higher blends*
- *Cellulosic production and "advanced" biofuel imports*
- *Competing fuels for ethanol market*
- *EPA's Enforcement of RFS*

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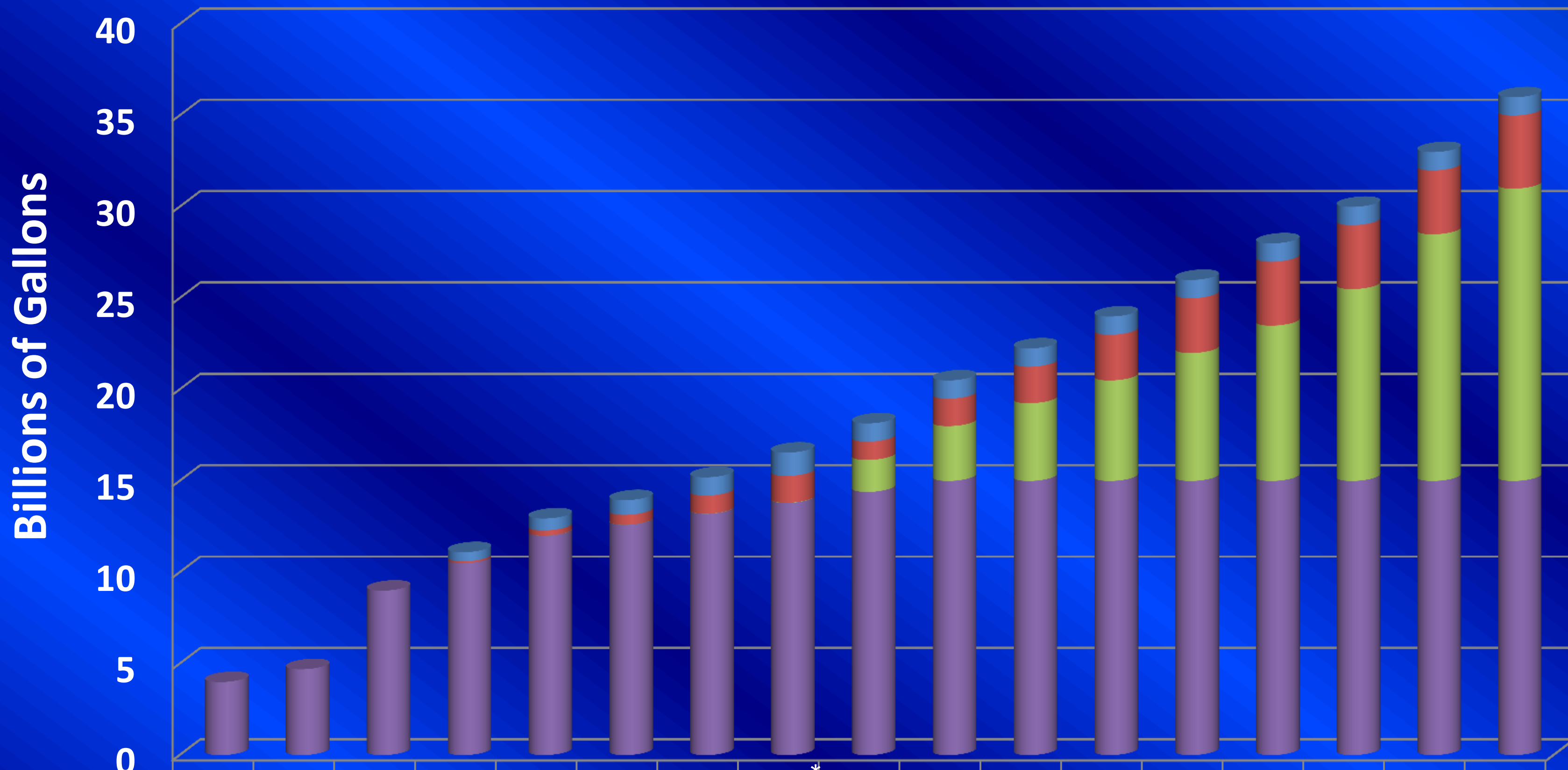
U.S. RFS2 Volume Mandates



	2006	2007	2008	2009	2010	2011	2012	2013*	2014	2015	2016	2017	2018	2019	2020	2021	2022
BioDiesel				0,5	0,65	0,8	1	1,28	1	1	1	1	1	1	1	1	1
"Other" Advanced				0,1	0,29	0,54	0,99	1,456	1	1,5	2	2,5	3	3,5	3,5	3,5	4
Cellulosic Biofuel				0	0,007	0,007	0,009	0,014	1,75	3	4,25	5,5	7	8,5	10,5	13,5	16
Renewable Fuel	4	4,7	9	10,5	12	12,6	13,2	13,8	14,4	15	15	15	15	15	15	15	15

Source: EISA

Brazil (expectations and key issues)

Global Production & Trade in 2013 and Beyond

- *Large growth potential*
- *Domestic market increasing*
- *Yields to return to historic levels*
- *Leader in exports*

Key Market Determinates in 2013 and Beyond

- *Government policies*
- *Level of investment*

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EU (expectations and key issues)

Global Production & Trade in 2013 and Beyond

- *Fuel demand flat*
- Avg blending rises from current E5 to E8 boosting use from 5.8 to 10.8 BLtrs
- Imports as a % of use rise from 16% to nearly 1/4th
- *GHG savings determine preference for fuel*

Key Market Determinates in 2013 and Beyond

- *Implementation of GHG requirements*
- *Proposed cap of food-based feedstock*

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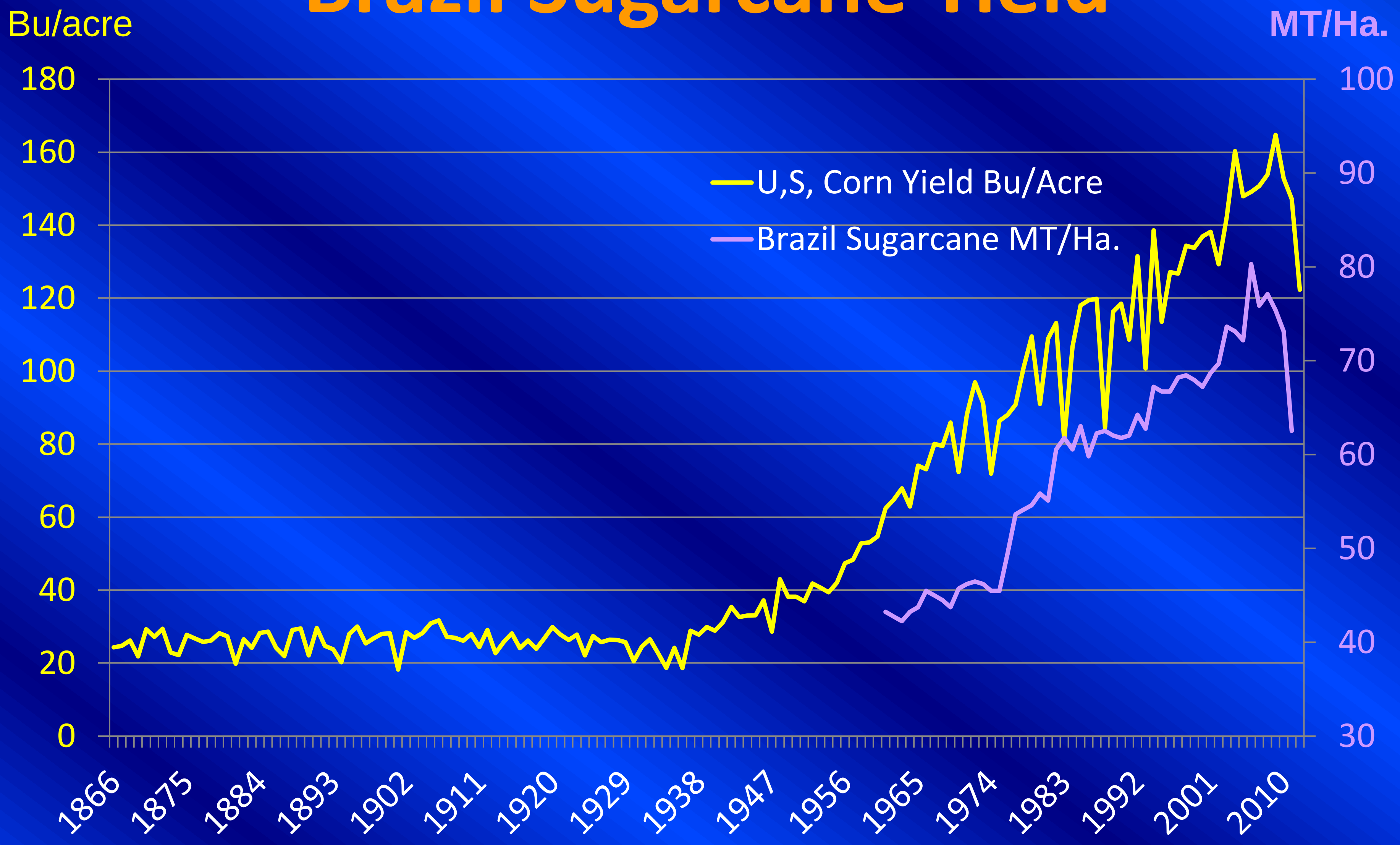
U.S. Corn Yield vs, Brazil Sugarcane Yield



Global Commodity Price Projections

- Value of U.S. Dollar expected to slowly decline
- Global demand for agricultural commodities remains strong
- Oil Prices remain high, above $120/barrel (Global Recovery?)

Wheat Outlook

- Black Sea region wheat exports projected to rise to 30 percent of global trade from 22 percent
- Wheat prices also decline through 2014/15 reflecting near-term market adjustments
- Subsequent projected price increases for wheat are more moderate than those for corn

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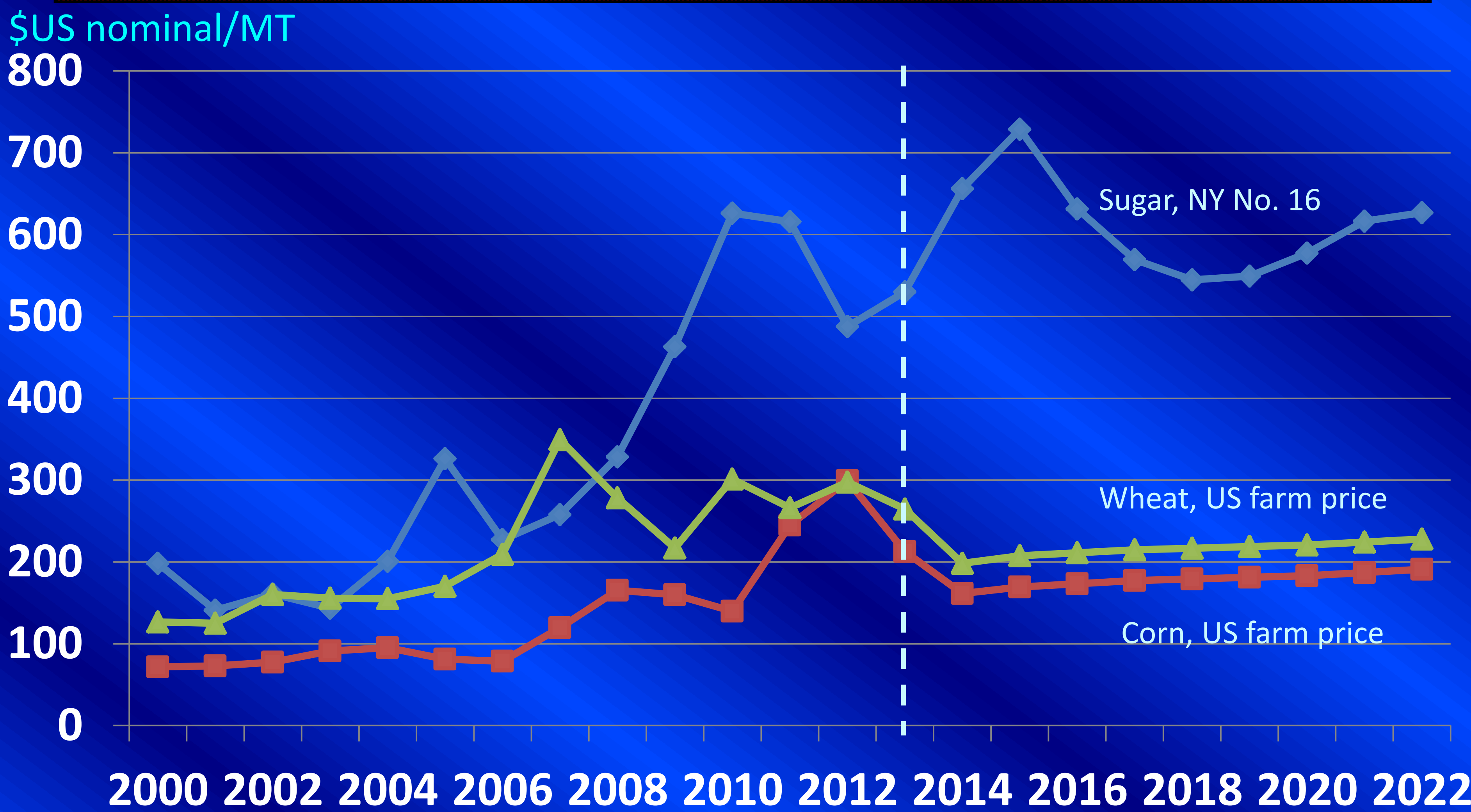
Ethanol Feedstock Prices

Wide spread between sugar and wheat/corn expected to remain



Sources for projections: USDA WASDE, 2013 Baseline

Summary Take-aways

• Larger markets Maturing

• Brazil potential to produce, consume and export larger volumes.

• All major producers have policy uncertainty

• Return to average yields in 2013 could create glut and depress prices

•Lower prices, higher margins in large producing countries, more exportable ethanol