U.S. Ethanol Market and Policy Update

June 15, 2017

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Renewable Fuels Association

About the Renewable Fuels Association (RFA)

- Trade association representing U.S. ethanol producers
- Mission: "Drive expanded production and use of American-made renewable fuels and co-products worldwide"
- Founded in 1981
- Offices in Washington D.C., St. Louis, Kansas City, and Detroit
- Member producers include large bioenergy companies and agribusinesses as well as small farmer-owned co-ops and LLCs
- Associate members include vendors, suppliers, supporters, etc.

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Today’s Ethanol Industry

- **212** installed production facilities
  - 199 in operation
  - 13 idle
- Installed facilities have “nameplate” capacity to produce **16.1 BG** annually
  - Actual production capacity is likely ≈ 16.4 BG
- Actual production in 2016 was **15.33 BG**
  - 96% capacity utilization
- Feedstock breakdown for installed facilities:

	Plants	Capacity (MG)	% of Cap.
Corn	182	15,102	93.8%
Corn/sorghum/wheat/barley	14	869	5.4%
Food/beverage waste	10	30	0.2%
Cellulosic biomass	6	92	0.6%

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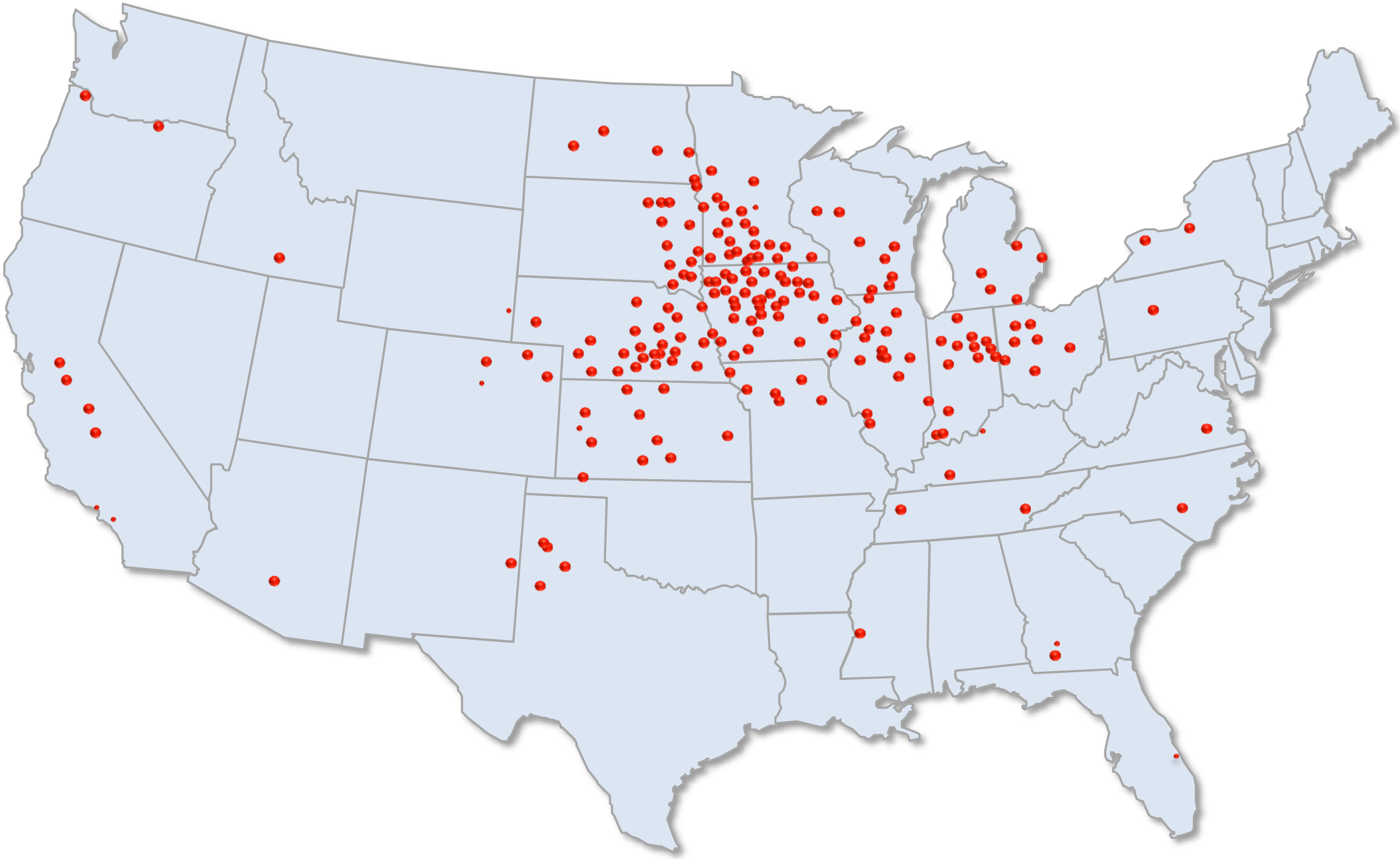
U.S. Ethanol Plants Locations



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“Capacity Creep”

	1Q13	1Q14	1Q15	1Q16	Current	
Total Nameplate (MGY)	14,837	14,880	15,077	15,694	16,062	+8.3%
Plants	211	210	213	214	212	+1 plant
Avg. Nameplate (MGY)	70.3	70.9	70.8	73.3	**75.8**	+7.7%

Company/Plant	City	State	New Capacity (MGY)	Completion Date	
Marquis Energy	Hennepin	IL	145	2Q16	293 MGY
Western NY Energy	Medina	NY	13	4Q16	
Siouxland Ethanol	Jackson	NE	20	1Q17	
The Andersons	Albion	MI	65	2Q17	
Badger State	Monroe	WI	28	2Q17	
Tharaldson Ethanol	Casselton	ND	12	2Q17	
Commonwealth Agri Energy	Hopkinsville	KY	10	2Q17	
KAAPA Ravenna	Ravenna	NE	30	3Q17	506 MGY
POET	Groton	SD	13	3Q17	
Pine Lake Corn Processors	Steamboat Rock	IA	10	3Q17	
Al-Corn Clean Fuel	Claremont	MN	70	2Q18	
Bushmills Ethanol	Atwater	MN	35	2Q18	
ICM	Colwich	KS	50	2Q18	
*Ringneck Energy**	*Onida*	*SD*	*80*	*2Q18*	
Little Sioux Corn Processors	Marcus	IA	30	2Q18	
*Elite Octane**	*Atlantic*	*IA*	*120*	*3Q18*	
POET	Marion	OH	68	3Q18	
TOTAL			**799**		

**Greenfield construction*

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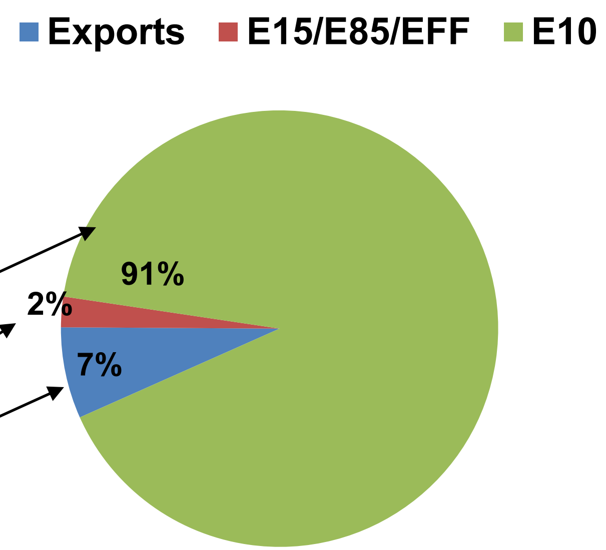
How is our ethanol used?

Ethanol Supply/Demand 101

2016 Ethanol S/D	Million gals.
Beginning Stocks	907
Imports	36
Production	15,330
TOTAL SUPPLY	**16,273**
E10 Blending	14,059
E15/E85/EFF Blending	349
Exports	1,045
TOTAL DEMAND	**15,453**
Ending Stocks	820



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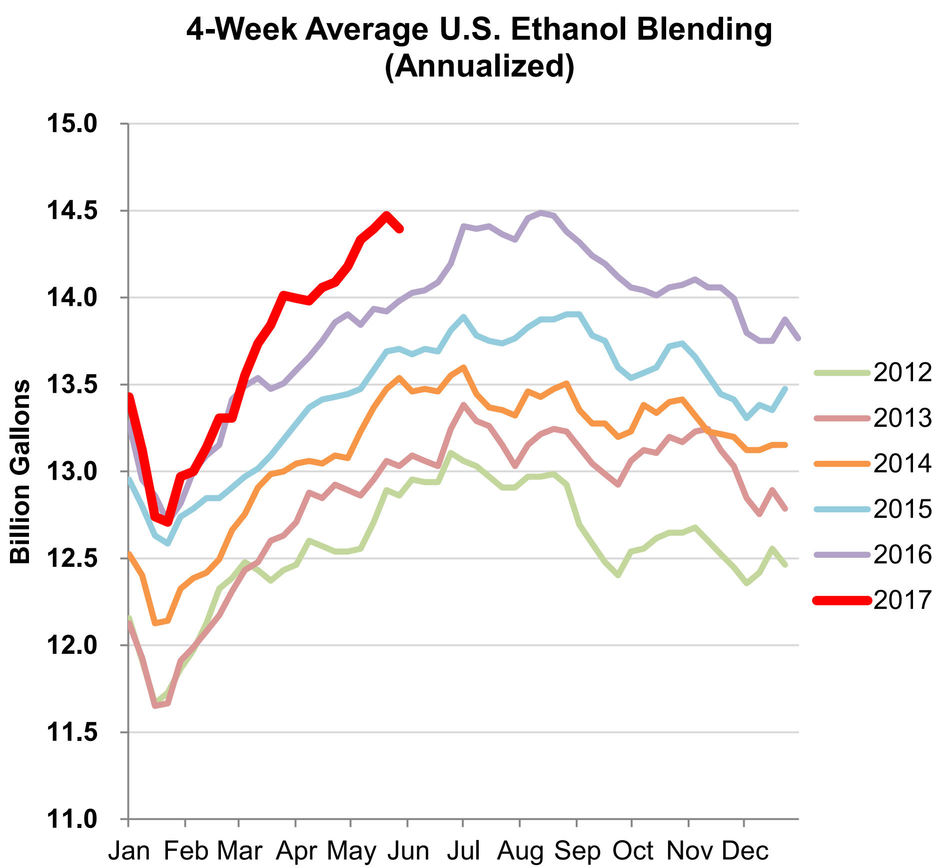
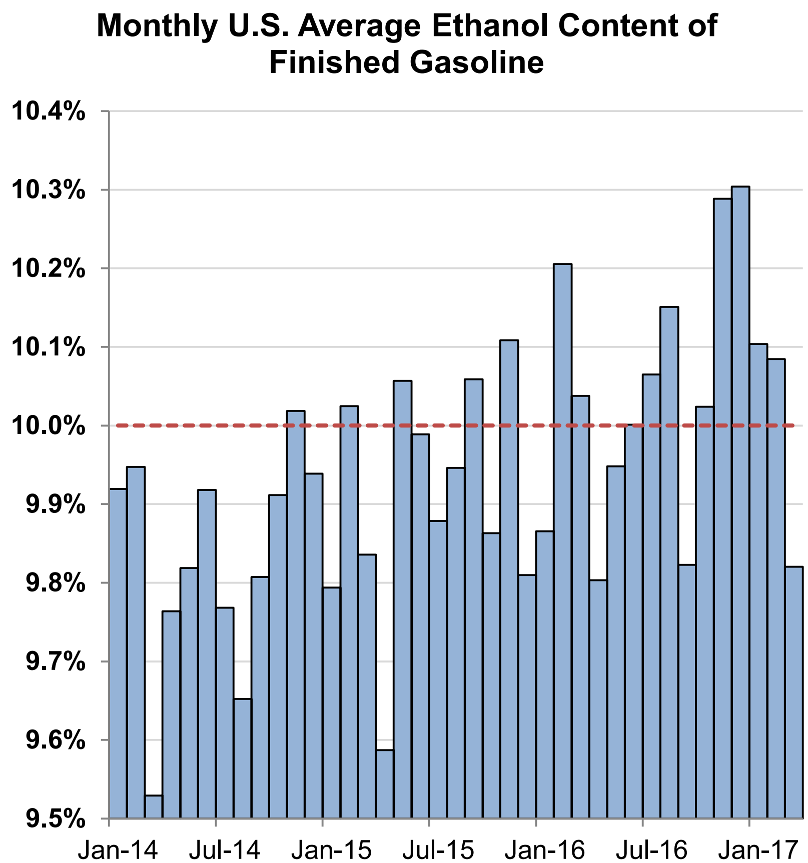
U.S. ethanol blending is up 1.7% versus year-ago; blend rate above 10.0% in 8 of last 10 months





Does not include EIA "adjustment" for certain blending below the rack and other blending outside of EIA survey

Source: EIA

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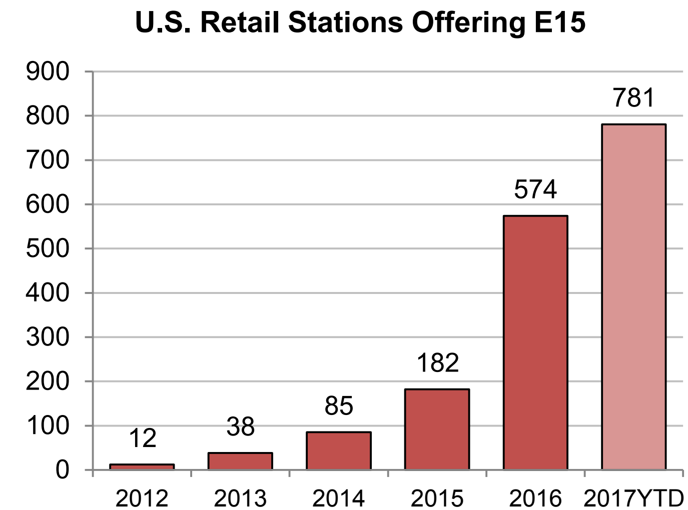
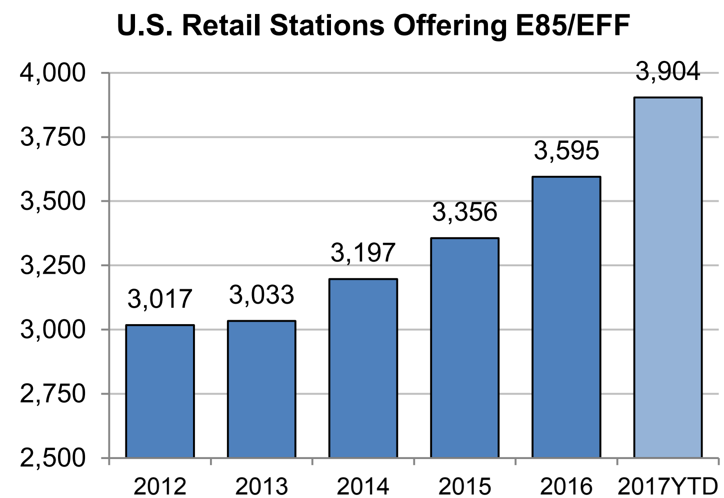
Sales of E15 and E85 are expanding as infrastructure buildout continues

- E15 and E85 retail infrastructure expansion is accelerating due to:
  - USDA Biofuels Infrastructure Partnership (BIP) grant program
  - Ethanol industry grant programs
  - RFS RIN values
  - LCFS credit values (California)
- Major retail chains are adopting E15 and E85. Many stations are high-volume sites
- 900-1,000 stations expected to be selling E15 by the end of 2017
- E15 legally approved for 90% of current fleet
  - All major automakers approve E15 in new vehicles (except Nissan, Mazda & Mercedes)
- EPA RVP regulations remain a key barrier
- 25 million FFVs on the road (≈10% of fleet)

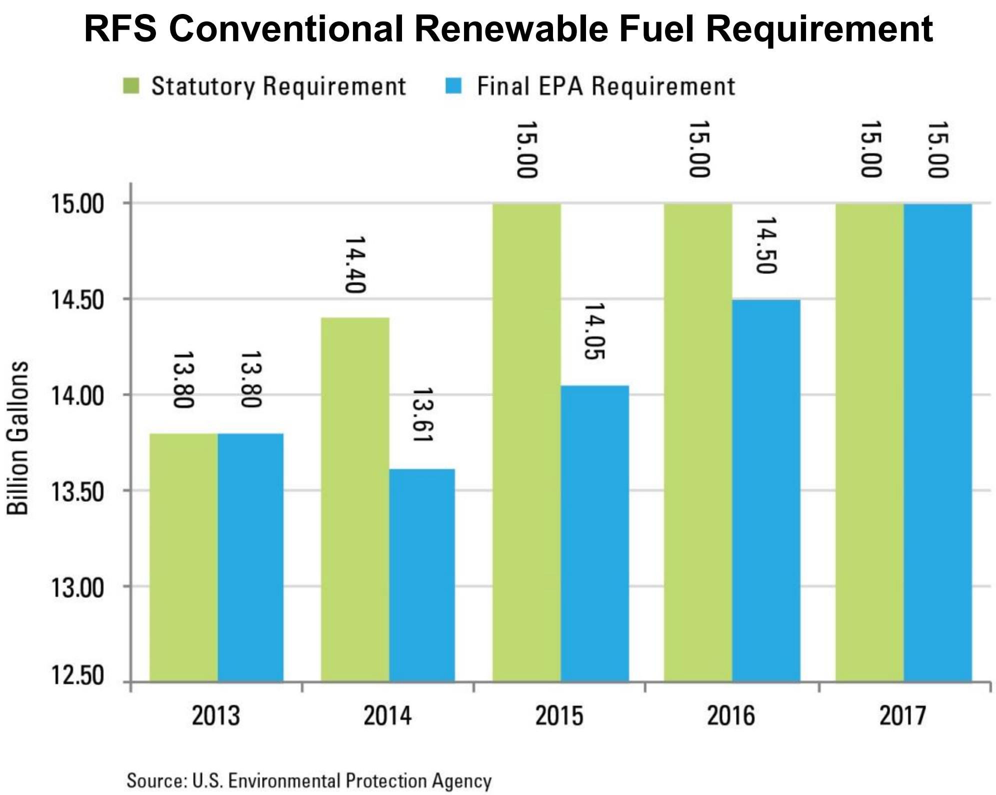




Source: RFA, E85prices.com, DOE

2017 Renewable Fuel Standard

- EPA put the RFS “back on track” with **final rule** for 2017 RFS requirements



- Published prior to statutory deadline of Nov. 30, 2016
- Restored conventional renewable fuel requirement to statutory level of 15 billion gallons
- YTD Cellulosic and Advanced Biofuel RIN generation well behind the pace needed to meet RVOs (but excess Biodiesel RINs can cover Advanced shortfall)
- YTD Biodiesel and Conventional Renewable Fuel RIN generation generally on necessary pace to meet RVOs
- RIN stocks at 1.6-1.8 billion entering 2017 compliance year

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2018 Renewable Fuel Standard

- EPA's proposed rule for 2018 RFS requirements will be released very soon
  - Still time to meet statutory deadline of Nov. 30, 2017 for final rule if proposal is released for public comment by mid-June
  - Expect conventional renewable fuel requirement to remain at statutory level of 15 billion gallons
  - Expect very modest (100-200 MG, 2-4%) increase to total advanced biofuel standard
- We do not expect the 2018 proposed rule to address petitions related to moving the RFS point of obligation
  - EPA proposed to deny the PoO petitions in Nov. 2016
  - Agency accepted public comments on the proposed denial
  - Final decision is pending

RFS Politics

- Oil companies continue to push for repeal or reform of RFS
- Reform focus is increasingly shifting to post-2022
- House Energy & Commerce holding roundtable discussions to solicit input on reform concepts, gauge appetite for modifications
- Several "messaging bills" introduced in House to reform or repeal—none expected to leave committee
  - H.R. 1315/1314 (Goodlatte)
  - H.R. 776/777 (Sensenbrenner)
  - H.R. 119 (Burgess)
- Support for RFS is bipartisan and falls along geographical lines
- **41 Senators** on record last summer supporting RFS and opposing legislative repeal or reform
- No meaningful legislative action on RFS is expected in near term
- President Trump continues to voice support for RFS and ethanol
- Administrator Pruitt committed to abide by the statute and Congressional intent in implementing RFS
- Agriculture Secretary Perdue strong supporter of RFS

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Securing RVP Parity for E15

- EPA regulations limit RVP of gasoline to 9.0 psi in the summertime in conventional gasoline areas (2/3 of the country)
  - E10 has RVP of 9.9-10.0 psi when made with 9.0 psi CBOB
  - E15 has RVP of 9.8-9.9 psi when made with 9.0 psi CBOB
- In 1989, EPA gave E10 a 1 psi “waiver,” creating an effective RVP limit of 10.0 psi for E10 only (Congress codified in 1990)
- EPA does not apply the same 1 psi waiver to E15
- Retailers cite the RVP disparity as the top reason for not selling E15
- S. 517 (Fischer) would extend 1 psi waiver to E15 and other blends above E10
  - EPW hearing June 14; bill mark-up in late July
- Administrator Pruitt has also stated that EPA is evaluating how and whether it can administratively apply the 1 psi waiver to E15

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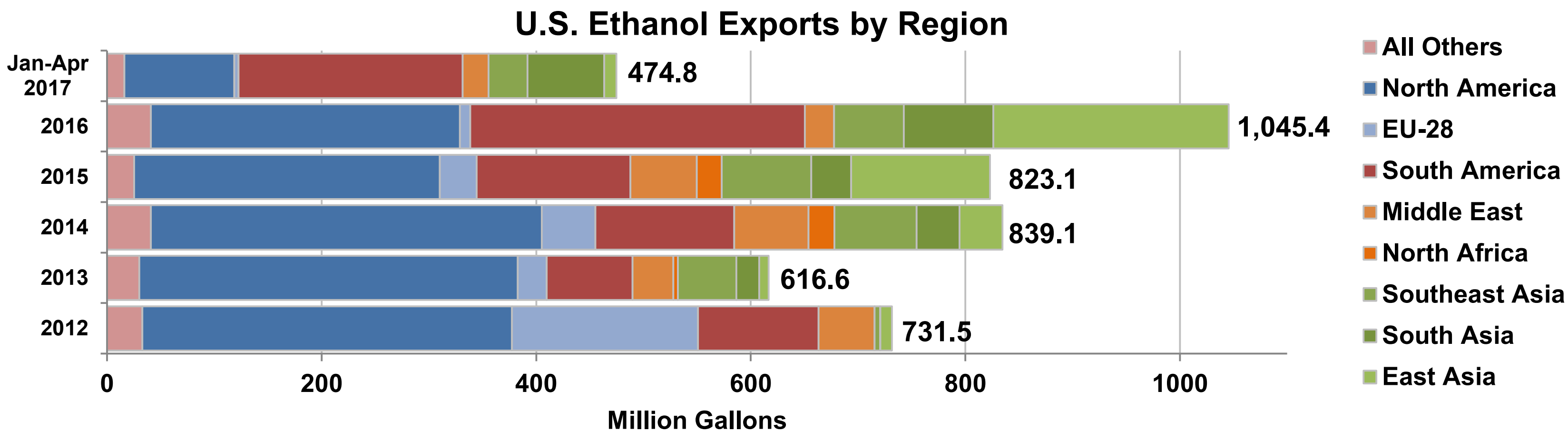
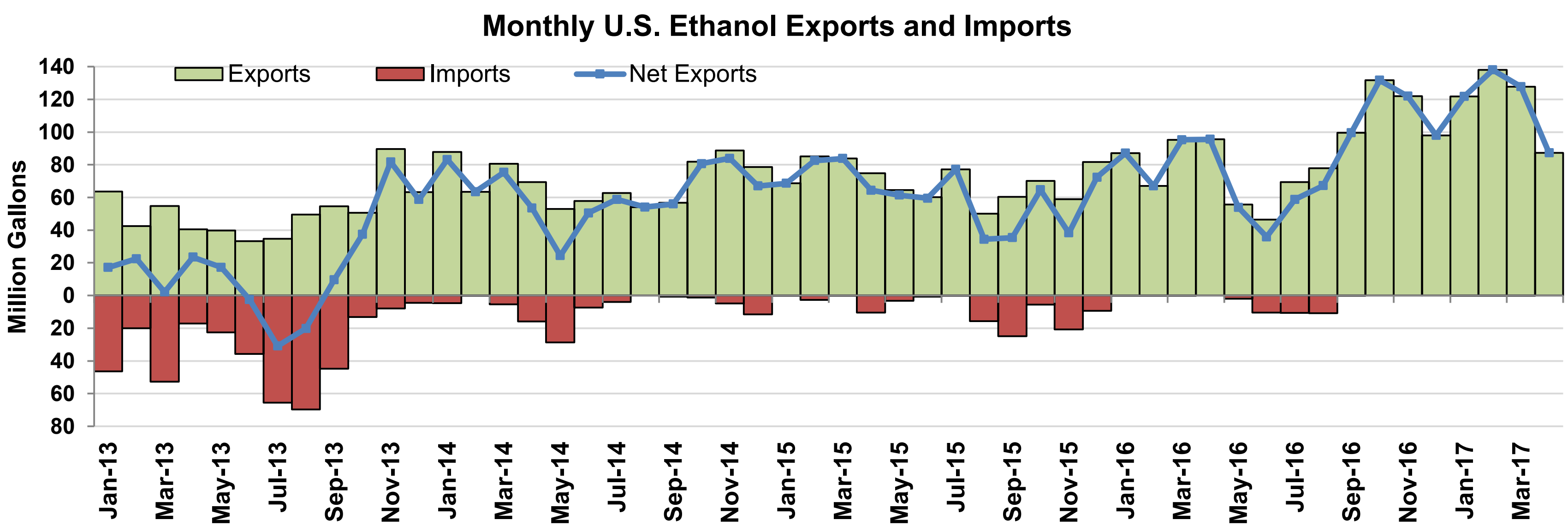
Demand growing for U.S. ethanol exports





Source: DOC

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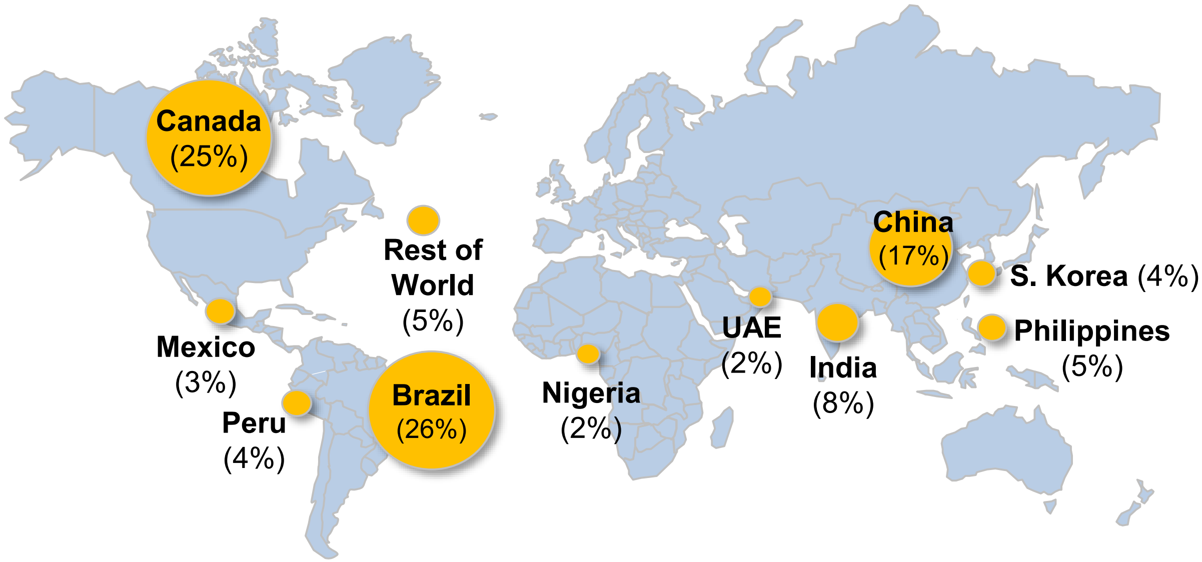
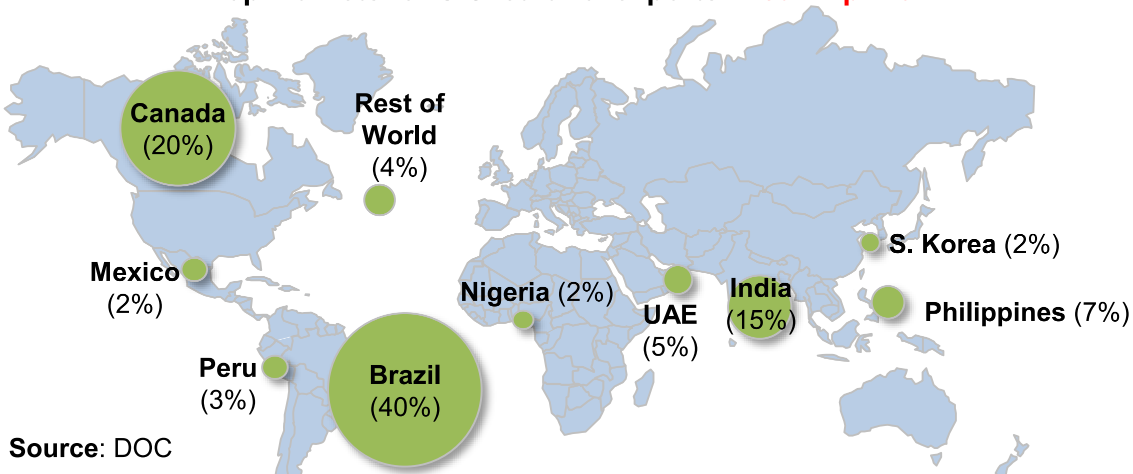
Biofuel mandates, smog concerns, octane value driving demand for U.S. ethanol exports

Top markets for U.S. ethanol exports in 2016



Top markets for U.S. ethanol exports in Jan-Apr 2017



- High sugar prices relative to corn in 4Q16 and 1Q17 resulted in significant increase in U.S. ethanol exports to Brazil
- Exports to China have ceased in 2017 in response to increased tariff rates
- YTD exports to India, Philippines, UAE up in 2017 vs. 2016
- Nearly 50 countries have renewable fuel mandates, targets, or goals.
- Octane value and oxygen content (smog reduction) also driving export demand.
- Still 2+ BG of MTBE blended worldwide.
- **2017 exports expected between 1.1-1.3 BG**

Source: DOC

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