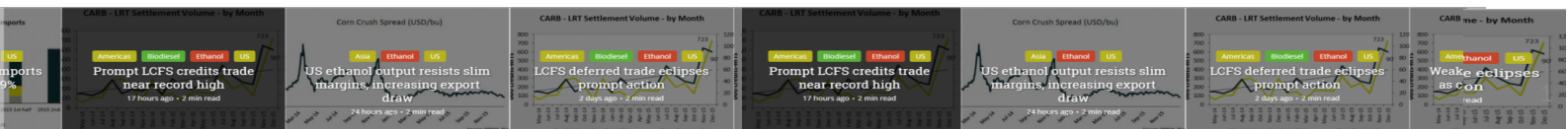




Federal versus State Growth Prospects for US Renewable Fuel Consumption

Heather Zhang



PRIMA: Award Winning Biofuel Analytics

PRIMA European Biodiesel Report
13 January 2013

EU trade adjusts to high premium environment

China's currency devaluation following the country's recent stockmarket slide has put global vegetable oil markets back under pressure, capping their recent rally relative to the collapsing mineral oil complex. While oil's high spreads still remain up WoW, rapeseed oil spread have fallen hardest relative to gasoil, dropping back to around \$430/t to nearly erase any WoW gains after peaking near \$475/t on 12 January. From month \$600 spread peak, \$360/t before dropping back \$20/t, still around \$20/t higher than on 8 January. Oil's timescale the spread remains near the strongest levels seen since February, stronger \$650 and palm oil relative to rapeseed oil have contributed to tighter zero spreads, dropping February offers on the intergrade spread back below leaving March offers at \$50/t.

• Spot biodiesel markets have lagged the slip in vegoil/gasoil or implied spot margins. Now amid signs of strong first quarter demand, premiums have fallen back from levels approaching \$200/t. For spreads further along the curve have been even more pronounced for April and May. Given strong premiums to get trailers opted to roll calendar 2016 requirements far in 2016/17 improvement. Continued strength so far in 2016/17 requirements into smaller periods coupled with gasoil and feedstocks markets coupled with from biodiesel derivatives.

• Current oilseed fundamentals for vegoil and gasoil and a slew of ahead of yet another DOE-wor trimmed to US 3215/2016 year down by 7.5%, 10-year down by 15% mark-down F output. USD consumer.

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PRIMA US Weekly Fuel Data
13 Jan, 2016

US DOE Petroleum Status Report Summary for week ending 8 January 2016

Refinery Utilization (%)	This Week	Last Week	Change	% Change	1 Year Ago	2 Year Ago	3 Year Ago
Crude Oil	91.2	91.5	-0.3	-0.3%	91.0	91.5	91.0
Ethanol	2.27	2.5	-0.23	-9.2%	2.06	2.02	2.09
Gasoline	88.05	88.22	-0.17	-0.2%	87.92	88.22	88.22
Jet	91.24	91.2	0.04	0.0%	91.24	91.24	91.24
Other	185.54	185.11	0.43	0.2%	185.54	185.54	185.54
Blending	18.24	17.95	0.29	1.6%	18.24	18.24	18.24
Inventory	185.42	185.95	-0.53	-0.3%	185.42	185.42	185.42

Crude Oil Production: 9,227 Mbl/d
Last week: 9,219
Change: 8

Crude Oil Stocks: 482,558 Mbl
Last week: 482,224
Change: 334

Ethanol Production: 1,003 Mbl/d
Last week: 998
Change: 5

Ethanol Stocks: 21,345 Mbl
Last week: 21,099
Change: 246

Real time

Daily

Weekly

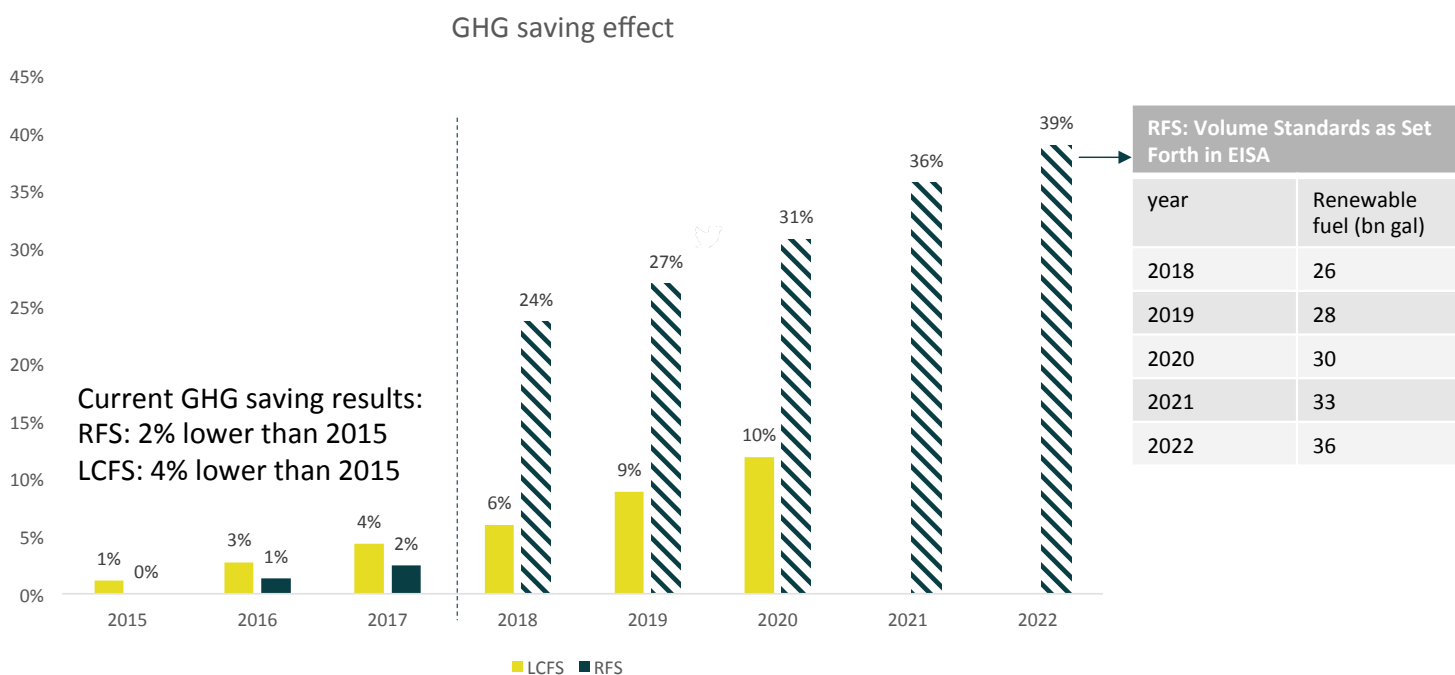
Bespoke

Philosophy questions or market questions?

- Who am I?
- Where did I come from?
- Where am I going to?
- What are the demand for renewable fuels?
- Where did the fuels come from?
- Where the market/program may go?

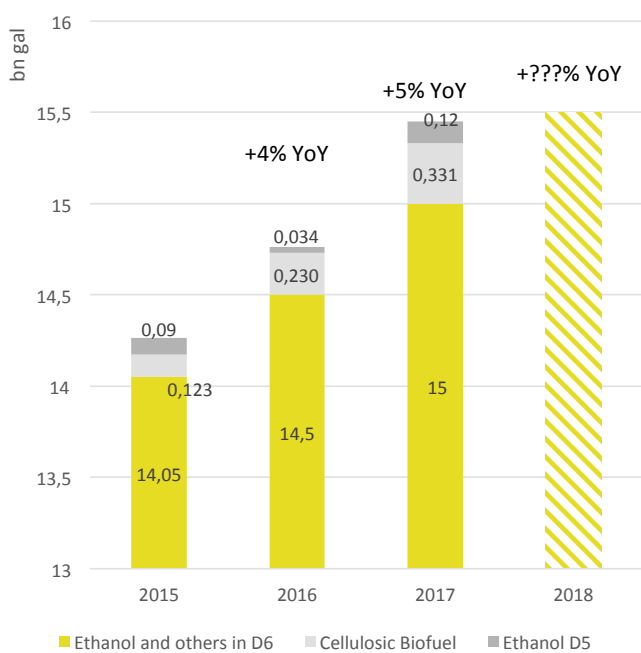


Demand - GHG saving

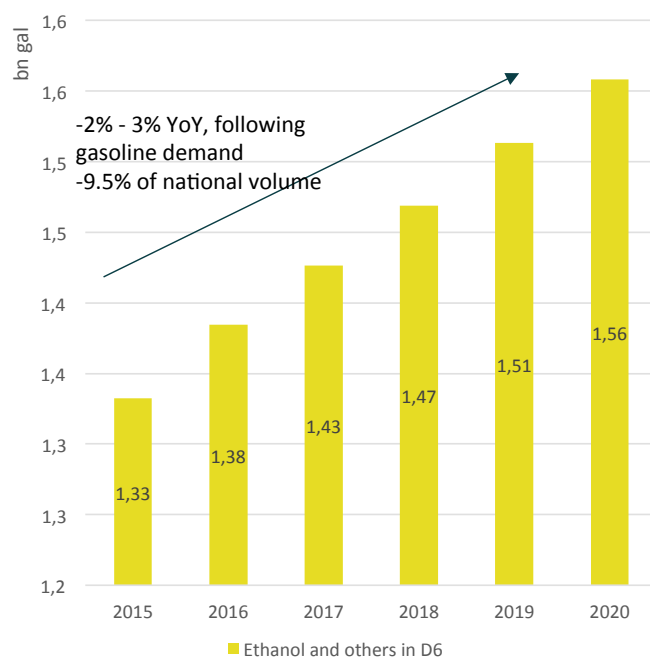


Demand: Ethanol and other Cellulosic biofuels

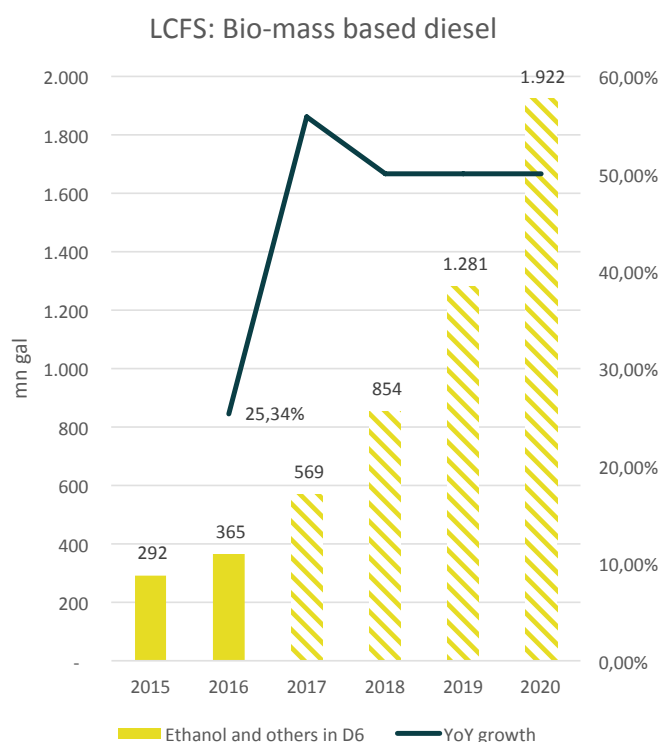
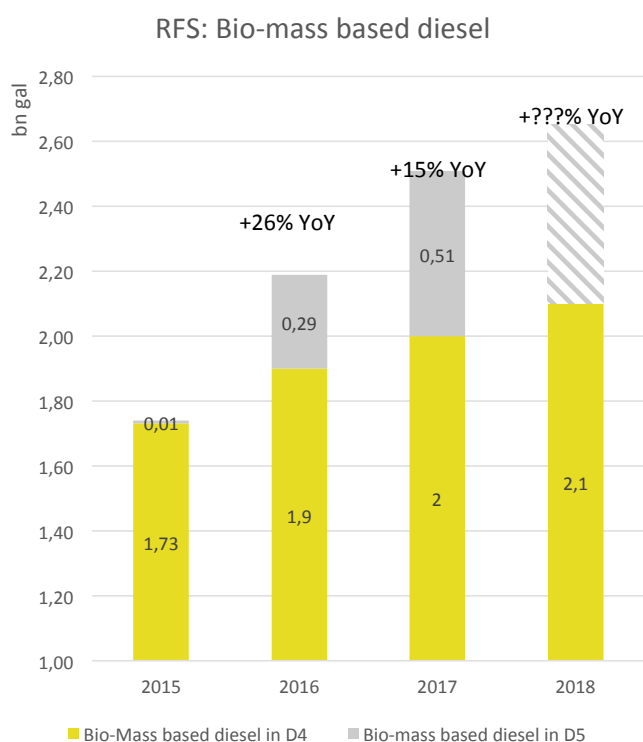
RFS: Cellulosic Biofuels and other renewable fuels



LCFS: Ethanol

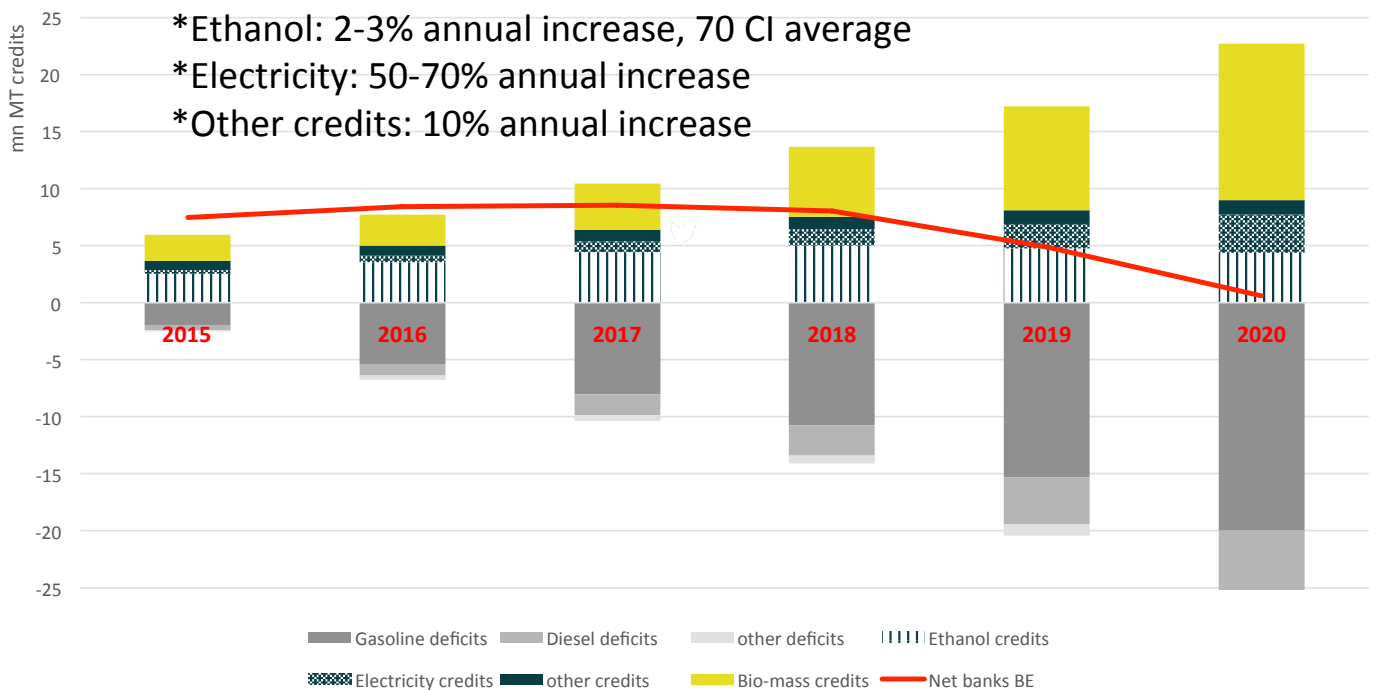


Demand: Bio-mass based diesel



LCFS Credit balances – Breakeven case by 2020

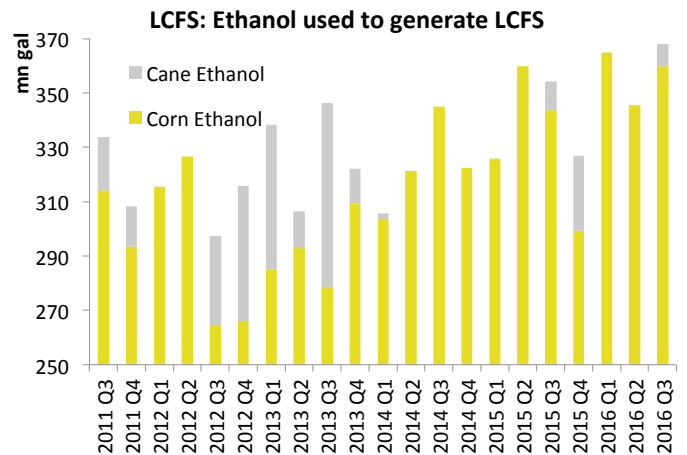
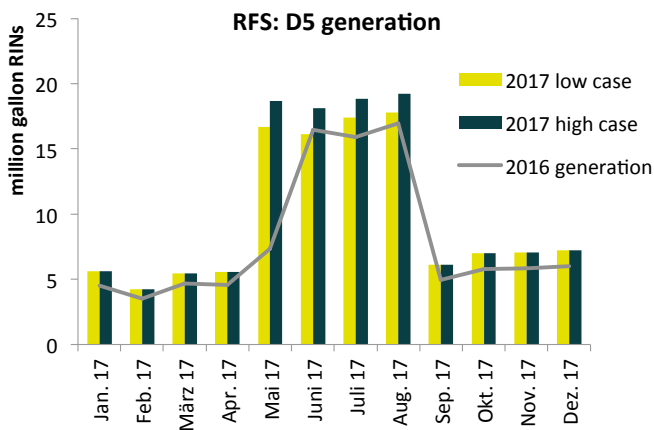
LCFS Credit balances Breakeven



Supply: Ethanol and advanced fuels

	Domestic	Imports from other states	Imports from Brazil
RFS	99.9%	NA	0.1%
LCFS	84%	14%	2%

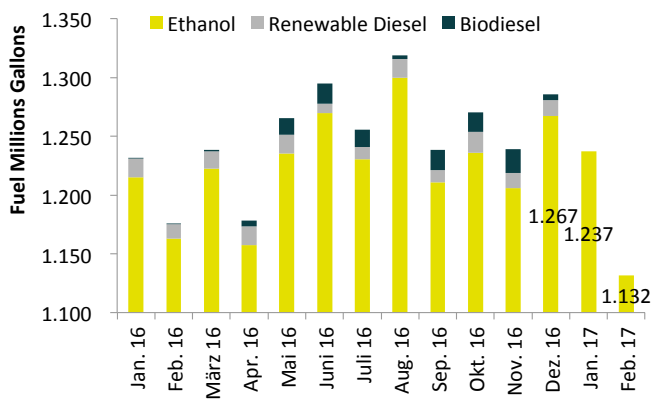
- Annual increase in Brazilian ethanol, from 34mn gal to 50mn gal at least
- Trigger: wide D5 and D6 prices and negotiable Brazilian ethanol price



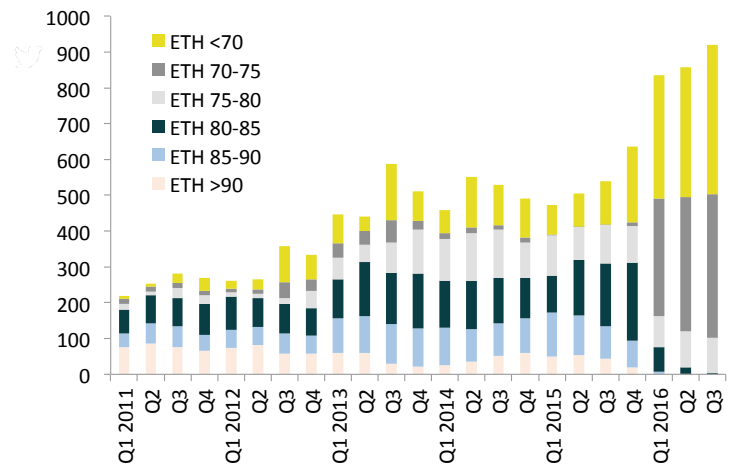
Supply: Ethanol and advanced fuels

	GHG saving	Feedstocks
RFS	20%	Corns
LCFS	30% average	More diversified: corns, sorghum, molasses

RFS: D6 supplied by fuel type



LCFS: Credits By Fuel Type



Supply: Bio-mass based diesel

RFS: Fuel	Change
Domestic biodiesel	Weak Q1, pick up in Q2 onwards
Argentina biodiesel	200-250mn potential shut
Other biodiesel imports	Question mark
Renewable diesel	Strong

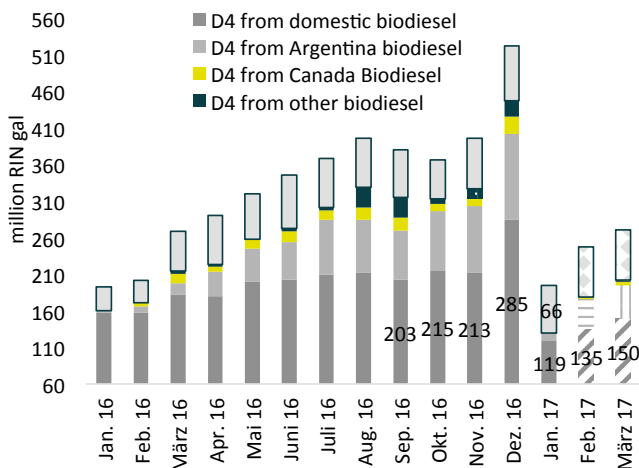
RFS: Fuel	Change
Biodiesel	Weak Q1, POET case threaten
Renewable diesel	Strong

-Total Q1 generation of D4s estimated: 660mn – 680mn RINs, up only 4.6% YoY
 -Generation pace is a 1% slower than same period last year
 -2017 balance: early to say but don't see shortfall

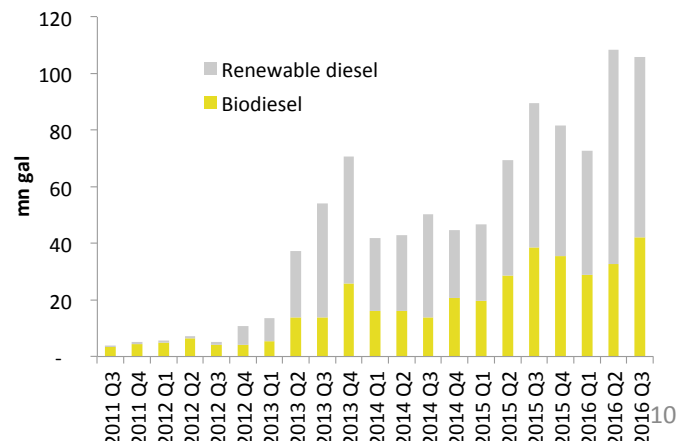
-Long term balance: See potential shortfall in fuels and feedstocks in long term



RFS: D4 Generation by fuels

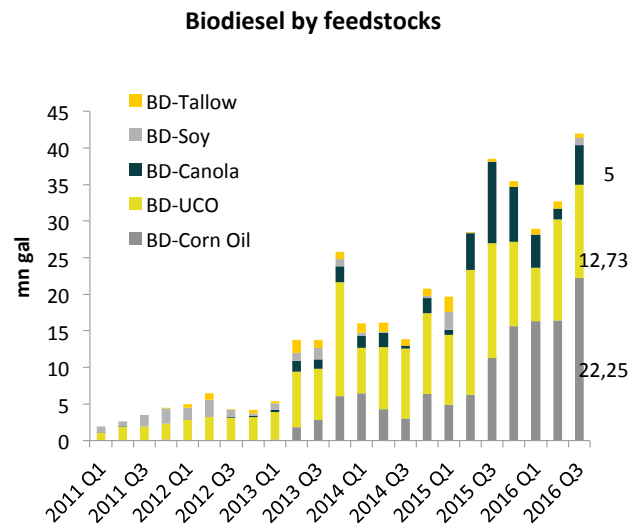
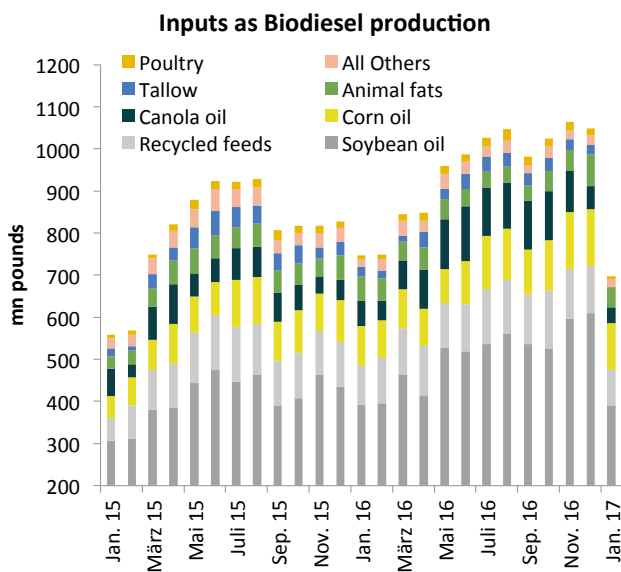


LCFS: Bio-mass based diesel used to generate LCFS

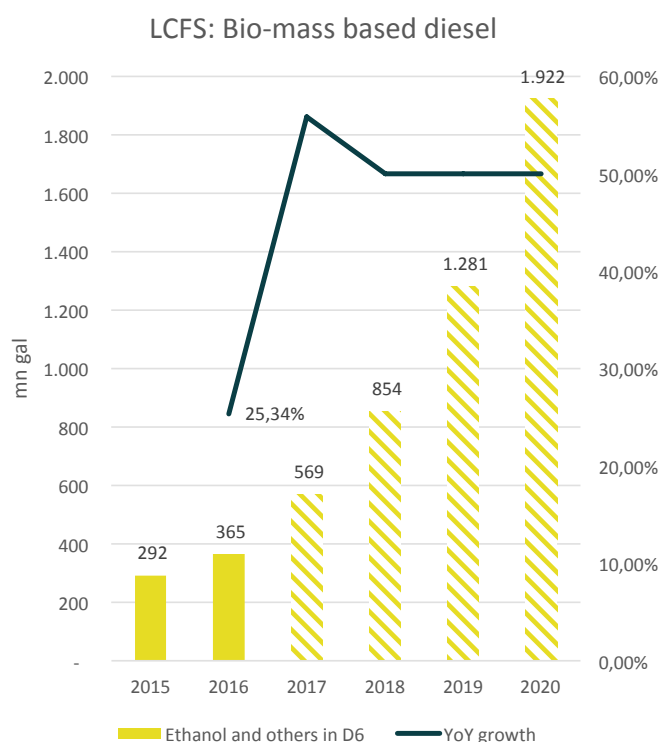
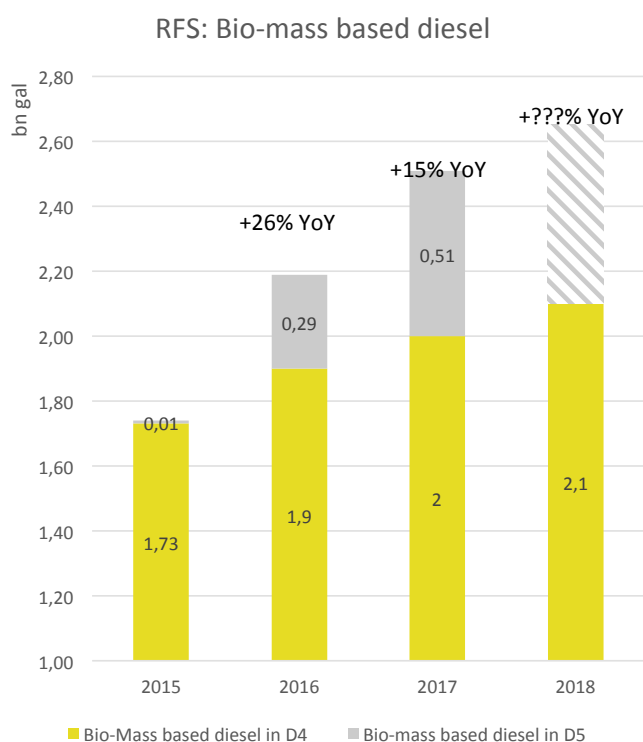


Supply: Bio-mass based diesel

Program	Major feedstocks	Comments
RFS	Soybean oil 52%+, corn oil 15%	Soybean oil: well above USDA expectation
LCFS	Corn oil 54%, UCO 31%, Canola oil 12% Q3 16'	UCO: locally supplied. Seeking for more sources Corn oil: stronger in Q1 2017, both for BD and RD



Demand: Bio-mass based diesel



Where the market/program may go?

RFS

- Argentina/Indonesia Anti Dumping case
- 2018 RVO
- BTC vs PTC

LCFS

- Great amount of deficits
- POET case



Where the markets/program to go-RFS?

Anti dumping case:

Timeline:

April 6: comments period closed

Early May: first decision

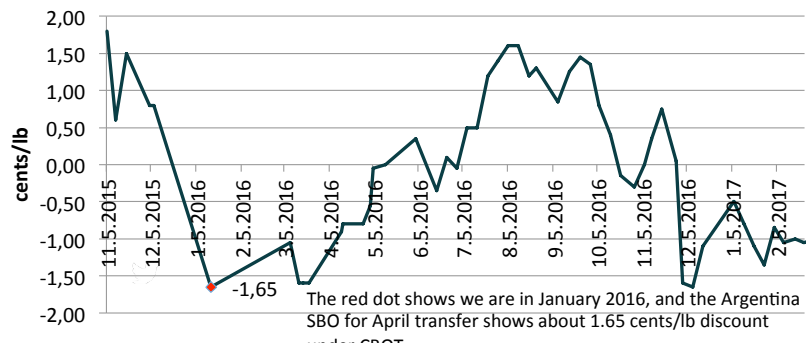
Impact:

-200-250mn decrease in 2017

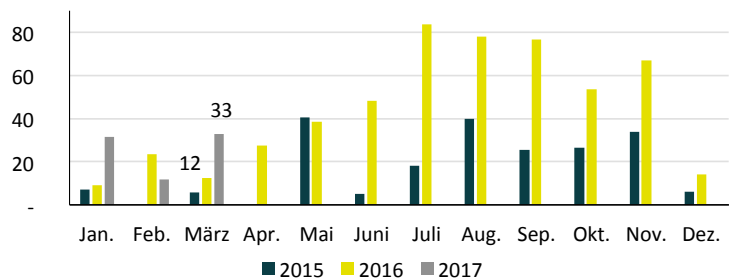
-hardly to see imports in 2018 if ruled against

-If additional PTC, then completely lose benefits

+3 month Argie SBO vs CBOT



Argentina Biodiesel Exports to USA Declared (Millions gal)



Where the markets/program to go-RFS?

RVO:

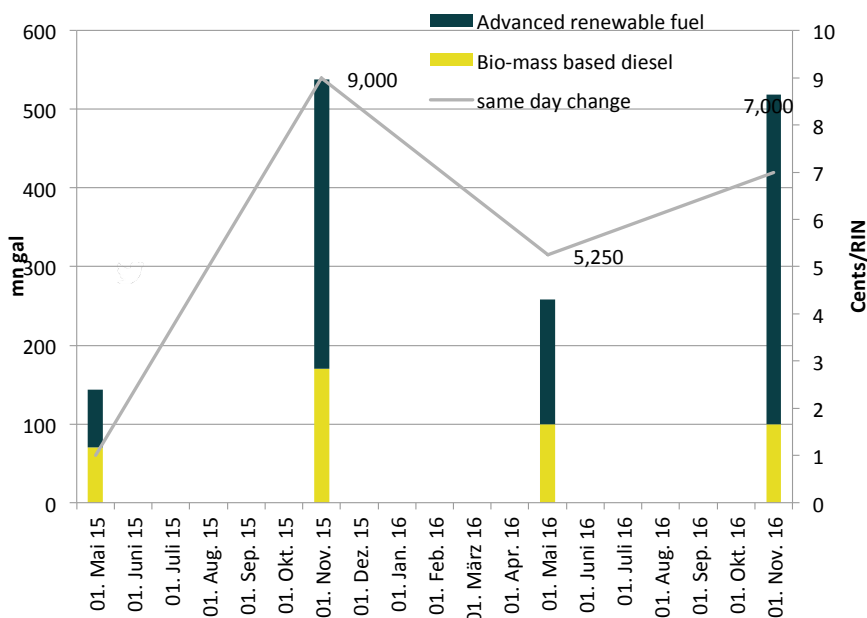
Timeline:

Summer onwards

Impact:

Immediately surge RINs to add additional incentives to supply chain, thus boosting production potentially

D4 intra day change vs annual mandates increase



Where the markets/program to go-RFS?

PTC or BTC:

Timeline:

Timeline doesn't help

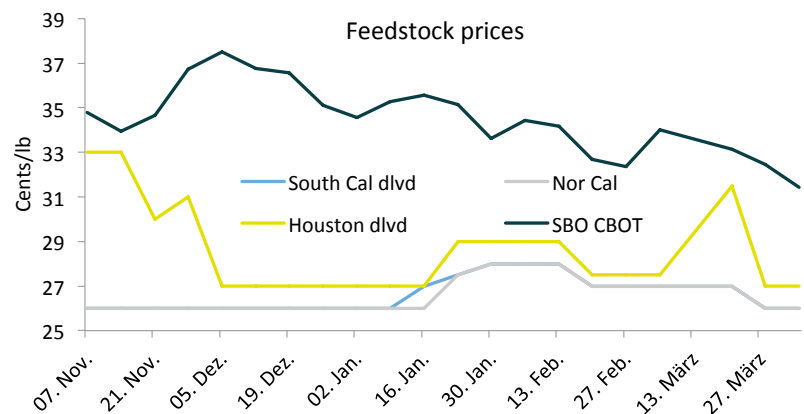
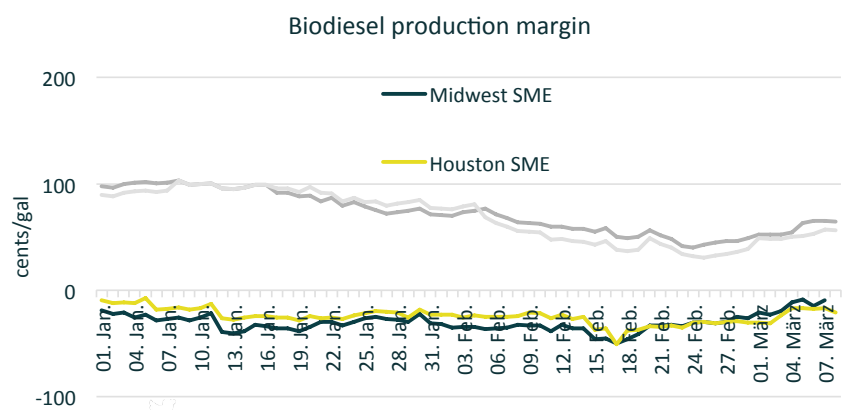
Impact:

Scenario 1: PTC – boost domestic production especially small producers, immediately bring margins to positive.

Scenario 2: No tax credits:

If no Argentina biodiesel, RINs become the only incentives to stimulate more productions as soybean oil may be strong. It is worth to watch switching feedstocks.

If Argentina biodiesel continues, then market operate as is.



Where the markets/program to go-LCFS?

*Volume of deficits is large:

Supply in 2017: good increase in Brazilian ethanol and electricity credits

Long term: increasing supply to be explored

*POET:

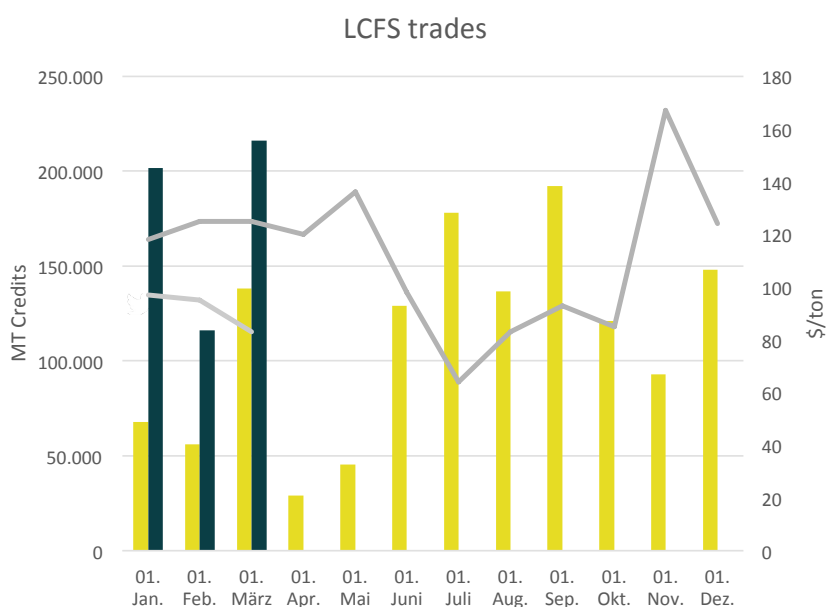
Scenario 1: Suspend Biodiesel

-positive sign for LCFS price

-good for Brazilian ethanol and RD

Scenario 2: Suspend LCFS

-long wait



Stay on top with **PRIMA**

EU Biodiesel

US Biodiesel

Argentinian biodiesel

Veg Oils

International Ethanol

Asian Ethanol

California LCFS

Monthly RIN Count

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