The global fight for low carbon fuel

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PRIMA: Award Winning Biofuel Analytics

Real time
Daily
Weekly
Bespoke
Who values carbon? Thresholds vs monetization

**Federal**
- N/A

**“State”**
- Alberta RFS -25% baseline
- Ontario threshold 50%
- BC - LCFS

**Federal**
- 20% GHG threshold D6
- 50% GHG threshold D4
- 60% threshold D3

**State**
- California LCFS GHG -2%
  - 2016
- Oregon GHG -2% 2017

**“Federal”**
- 50% GHG threshold
- Wastes can be “double counted”

**“State”**
- Germany GHG -4%
GHG Saving Targets – Germany v California

- Germany GHG Saving Targets
- California GHG Saving Targets
Germany: Biodiesel Price per GHG point saved (Q2 2017)
German feedstock usage (±YoY)

As % of total

- Rapeseed
- Waste & Residue
- Palm Oil
- Maize
- Wheat

2014 | 2015
---|---
Rapeseed | 
Waste & Residue | 
Palm Oil | 
Maize | 
Wheat | 

San Francisco, April 2017
California demand booms
California biodiesel & renewable diesel consumption


BD-Canola  BD-Corn Oil  BD-Soy  BD-Tallow  BD-UCO  RNWD - Total

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Biodiesel and ethanol premiums under LCFS ($/gal)

- Midwest SME Biodiesel (avg CI: 52.45)
- UCOME Biodiesel (Avg CI: 19.26)
- Brazil Sugar Ethanol (Avg CI: 43.03)
- Midwest Corn Oil Bio (Avg CI: 38.67)
- Midwest Corn Ethanol (Avg CI: 72.43)
Will US wastes outpace bean oil biodiesel prices?

UCOME vs FAME $/t ARA

TME vs SME fob HOU cents/gal
2020 low-CI outlook

Federal
N/A

“State “
BC LCFS -10%
Ontario 70% GHG threshold 2017

Federal
20% GHG threshold D6
50% GHG threshold D4
60% threshold D3

State
California LCFS GHG -10% 2020
Oregon GHG -10% 2020

“Federal”
60% GHG threshold 2018
No double count

FQD 6% GHG saving 2020
EU RED II proposal

- Limit crop based biofuels to 3.8% by 2030
  
  - (EU Parliament recommends crop biofuel ban by 2020)

- 1.5% of transport fuels from advanced sources by 2021

  - Advanced biofuels mandate 6.8% by 2030

- Cap on UCO and Animal fats at 3.2% in 2020 and 2030

  - GHG threshold increase to 70% after 1 Jan 2021
An obvious outcome?

Growing Demand for low Cl fuels

Crop Cap

Stronger demand for waste feedstock
Soybean length grows, wastes flatline
Europe’s struggle to source waste

- Total La Mede HVO Input Capacity: 500,000t/yr
- Available UCO in France: 100,000t/yr
- Current UCO collection in France: 45,000t/yr
- Total/Suez: 20,000t/yr
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EU Biodiesel
US Biodiesel
Argentinian biodiesel
Veg Oils
International Ethanol
Asian Ethanol
California LCFS
Monthly RIN Count

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