2012 – 2013 Winter Fuels Outlook Conference

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Ethanol Perspectives & Trends

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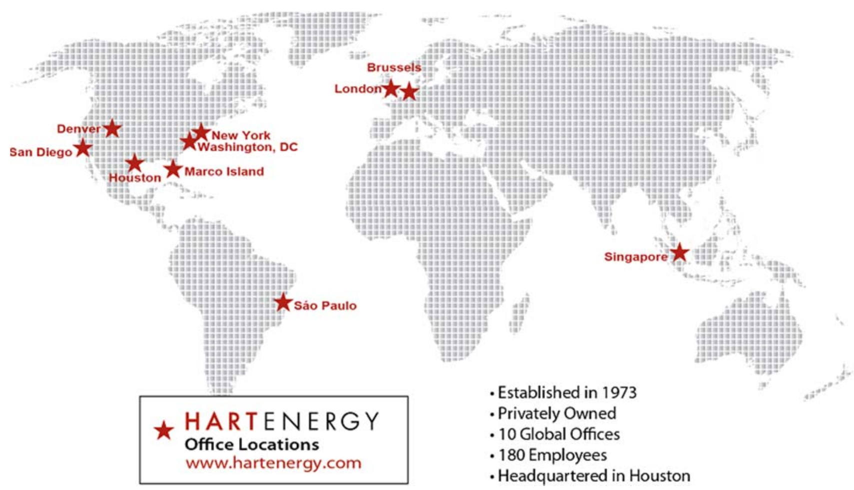
Who We Are



- Established in 1973
- Privately Owned
- 10 Global Offices
- 180 Employees
- Headquartered in Houston

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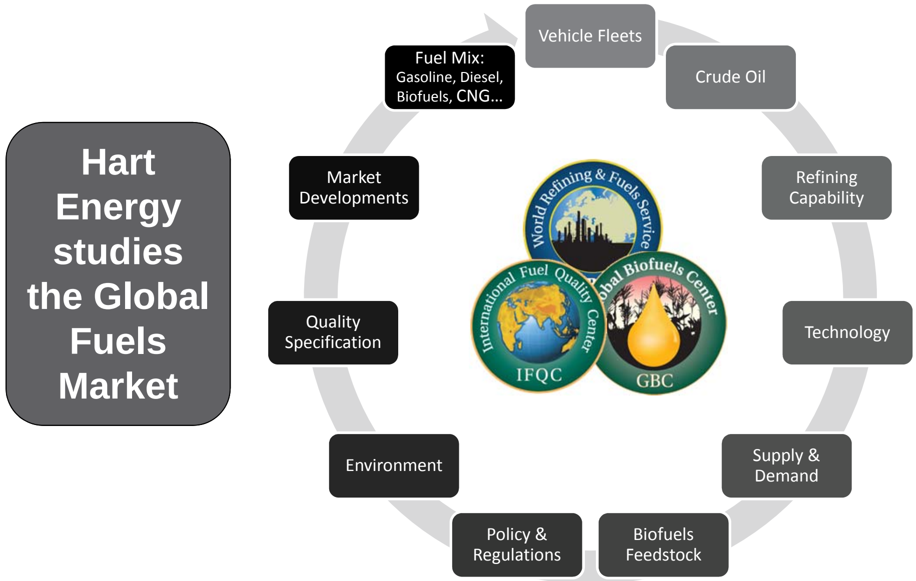
Breadth of Downstream Coverage

Comprehensive Resources & Analyses on All Fuel Related Matters



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Presentation Overview

Current Events
- Summer Drought Impacts
- RFS 2 – Current & Proposed 2013
- Waiver Petitions & Litigation
- National Election

Ethanol Production
- Current Supply & Blending
- Exports
- RINs Compliance

Regional Forecast
- Supply and Demand
- Brazilian Ethanol Supply & Demand
- Next Generation Biofuels

E10 Blend Wall
- Current Status
- E15 Experiment
- Iceberg Right Ahead

Conclusions

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Current Events & Issues

2012 Summer Drought
- USDA WASDE – higher corn carry-in offsets reduced production/harvest for 2012-2013 season.
- Tomorrow's forecast – 10.6 billion bushels that is 9 year low (total supply 11.6 billion).

Ethanol Production & Supply
- Economic situation – high feedstock costs, high energy costs = tightened margins.
- Production rationalization – some plant closures.
- Inventory reductions – but RFS & octane maintain blending.

Renewable Fuel Standard
- 2012 requirements being met (except for cellulosic biofuels).
- Proposed 2013 volumes & percent obligations still pending.
- 2013 final rule not out until well into year.

Next Generation Biofuels Largely Not Available
- Technologies still unproven and scale-up has been very slow.

Waiver Petitions & Litigation
- RFS waiver petitions
- E15 partial waivers – petition for full Appeals Court review
- Cellulosic biofuels waiver/credits
- California Low Carbon Fuel Standard

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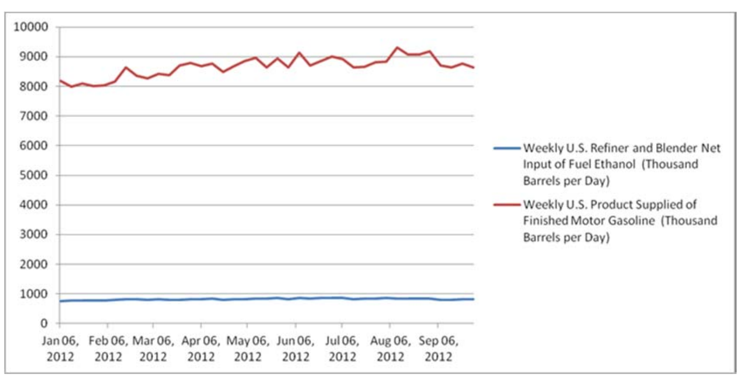
Ethanol Blending



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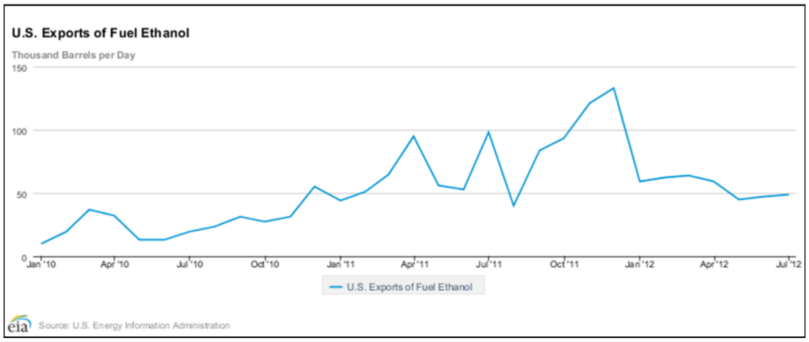
Ethanol Exports - 2012 Volumes



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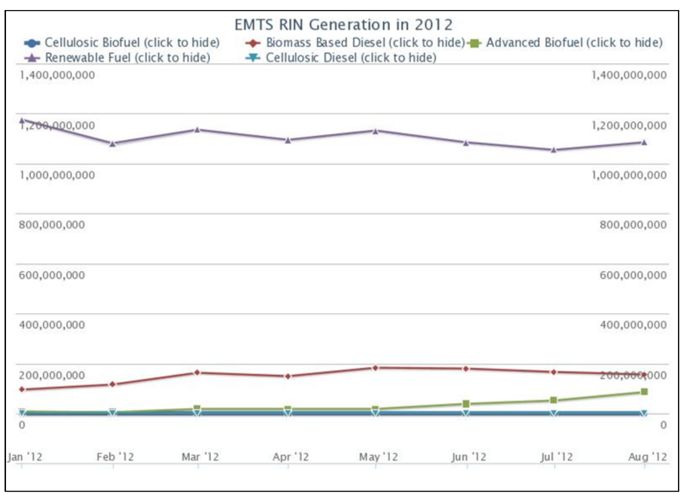
EPA EMTS – 2012 RINs



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Renewable Fuel Standard - 2012

Fuel Category	Amount of Fuel Required to be Renewable Biofuel	Total Volume of Renewable Fuel (in billion gallons)	EISA Goal (in billion gallons)
Renewable biofuel	9.23%	15.2	15.2
Cellulosic-based biofuel	0.006%	0.00865	0.50
Biomass-based diesel	0.91%	1.0	1.0
Advanced biofuel	1.21%	2.0	2.0
"Corn-based ethanol"	N/A	13.2	N/A

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Renewable Fuel Standard – 2013?

Fuel Category	Amount of Fuel Required to be Renewable Biofuel	Total Volume of Renewable Fuel (in billion gallons)	EISA Goal (in billion gallons)
Renewable biofuel	?	16.55	16.55
Cellulosic-based biofuel	?	0.025 to 0.035	1.00
Biomass-based diesel	?	1.28	At least 1.0
Advanced biofuel	?	2.75	2.75
"Corn-based ethanol"	N/A	13.8	N/A

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RFS Waiver Petitions

- Eight State Governors submitted petitions seeking partial waivers
- EISA directs EPA to issue determination within 90 days
- Public comment period ends on Oct. 11
- EPA decision by Nov. 9
- Threshold to establish "severe harm" to economy of state very high

- Outcome – EPA unlikely to grant waivers

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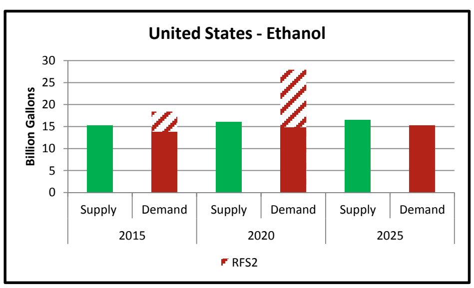
United States – Ethanol S&D Forecast

Projected Blend Levels	2015	2020	2025
Ethanol	10.5%	11.8%	13.1%



Key findings:
- Ethanol demand increases depend on E15 penetration & reform of the RFS2 program;
- Corn-based ethanol production stable;
- Sugar-cane based ethanol imports variable with Brazilian harvest cycles;
- Cellulosic ethanol forecast at only 1 billion gallons.

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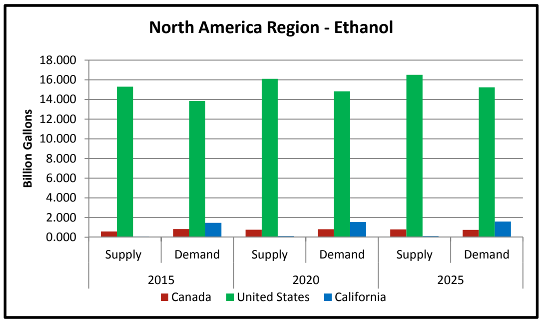
North America Ethanol S&D Forecast



Key findings:

- **Ethanol demand increases as E15 penetration occurs (slowly).**
- **Limited volume of cellulosic ethanol throughout forecast.**
- **RFS2 program advanced biofuels mandates not achieved – requiring reform.**
- **Ethanol capacity for region adequate to meet conventional volumes needed.**

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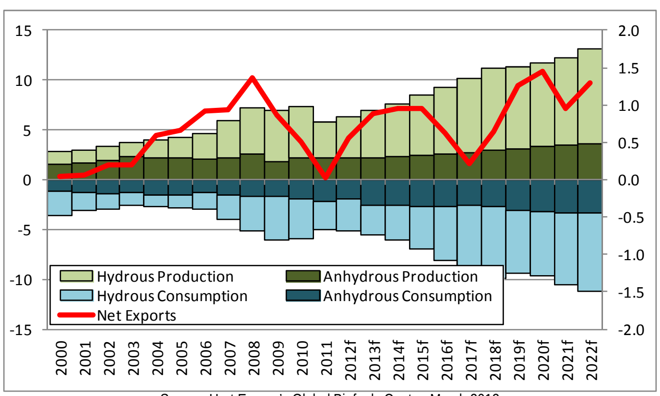
Ethanol Demand/Supply Balance

Upsurges in domestic demand – driven by softer prices – periodically drive down net export availability. Even during peak years of availability, net exports will fall below most forecasts (e.g., Ministry of Agriculture, ICONE, UNICA, etc.)



Source: Hart Energy's Global Biofuels Center, March 2012

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Next Generation Biofuels

Hart Energy projects less than 800 million gallons commercial-scale production by 2020 in the U.S.

25 operating next generation biofuels pilot/demo plants in the U.S.

- 18 cellulosic ethanol plants with capacities ranging from 1,600 gallons to 1.5 million gallons per year
- 5 FT or HVO renewable diesel plants: undisclosed to 0.07 gallons to 5 million gallons per year
- 2 for biogasoline or biojet

2 operating commercial plants in the U.S.

- Gevo: 18 million gallons per year of butanol
- Dynamic Fuels: 18 million gallons per year of HVO renewable diesel

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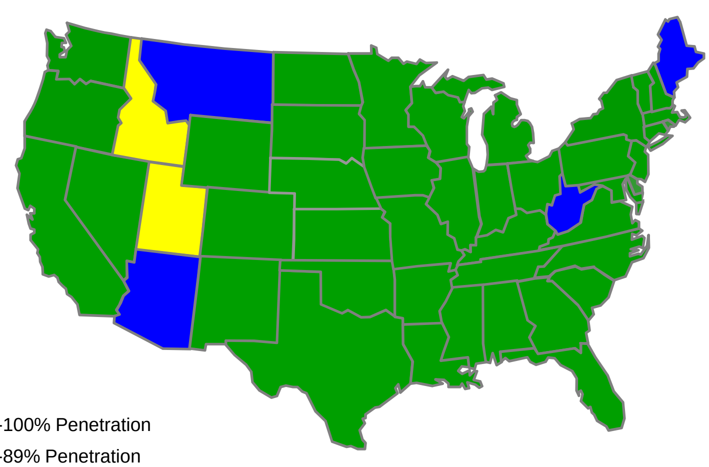
E10 Penetration – Low Case Estimate



90-100% Penetration
75-89% Penetration
Below 74% Penetration

Alaska – 70%
Hawaii – over 90%

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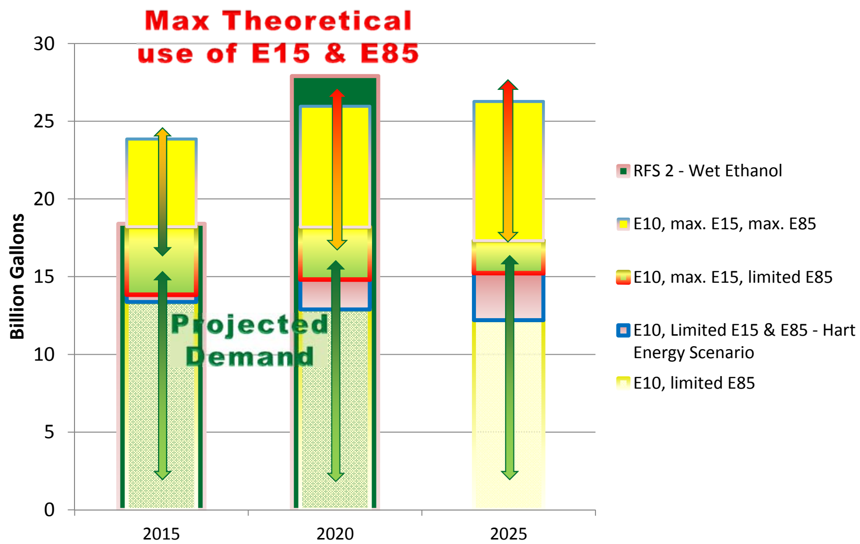
Iceberg Right Ahead!

U.S. Ethanol Demand and RFS2



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Conclusions

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Conclusions

Current Ethanol Supply Available to Meet Demand

- U.S. has hit the E10 blendwall – further blending requires mid-level (E15) market penetration.
- Longer forecasts impacted by vehicle fuel economy improvements - gasoline consumption down further reducing ethanol blending potential.
- Brazilian ethanol market suffers from competition with the sugar industry – impacting exports.

RFS2 Program in Need of Reform

- Advanced & cellulosic biofuels shortage strains program compliance.
- Expanded ethanol use dependent on E15 market penetration.
- Waiver petitions likely denied – ongoing litigation creates uncertainty for producers & refiners/blenders.

National Election Outcome

- Future regulatory programs & market responses impacted by election.

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Thank You!

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