Renewable Chemicals and Advanced Biofuels

Biomass 2013

July 31 2013

Brett Lund

Forward-Looking Statements

Certain statements within this presentation may constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements relate to a variety of matters, including but not limited to: the timing and costs associated with and the availability of capital for Gevo's scheduled retrofits of existing ethanol production facilities, its future isobutanol production capacity, the timing associated with bringing such capacity online, the availability of additional production volumes to seed additional market opportunities, the expected applications of isobutanol, including its use to produce renewable paraxylene, PET, isobutanol-based fuel blends for use in small engines, and ATJ bio-jet, addressable markets, and market demand, Gevo's ability to produce commercial quantities of isobutanol from cellulosic feedstocks, the suitability of Gevo's iDGs™ for the animal feed market, the expected cost-competitiveness and relative performance attributes of isobutanol and the products derived from it, the strength of Gevo's intellectual property position and other statements that are not purely statements of historical fact. These forward-looking statements are made on the basis of the current beliefs, expectations and assumptions of Gevo's management and are subject to significant risks and uncertainty. All such forward-looking statements speak only as of the date they are made, and Gevo assumes no obligation to update or revise these statements, whether as a result of new information, future events or otherwise. Although Gevo believes that the expectations reflected in these forward-looking statements are reasonable, these statements involve many risks and uncertainties that may cause actual results to differ materially from what may be expressed or implied in these forward-looking statements. For a discussion of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of the company in general, see the risk disclosures in Gevo's Annual Report on Form 10-K, as amended, for the year ended December 31, 2012 and in subsequent reports on Forms 10-Q and 8-K and other filings made with the Securities and Exchange Commission by Gevo.

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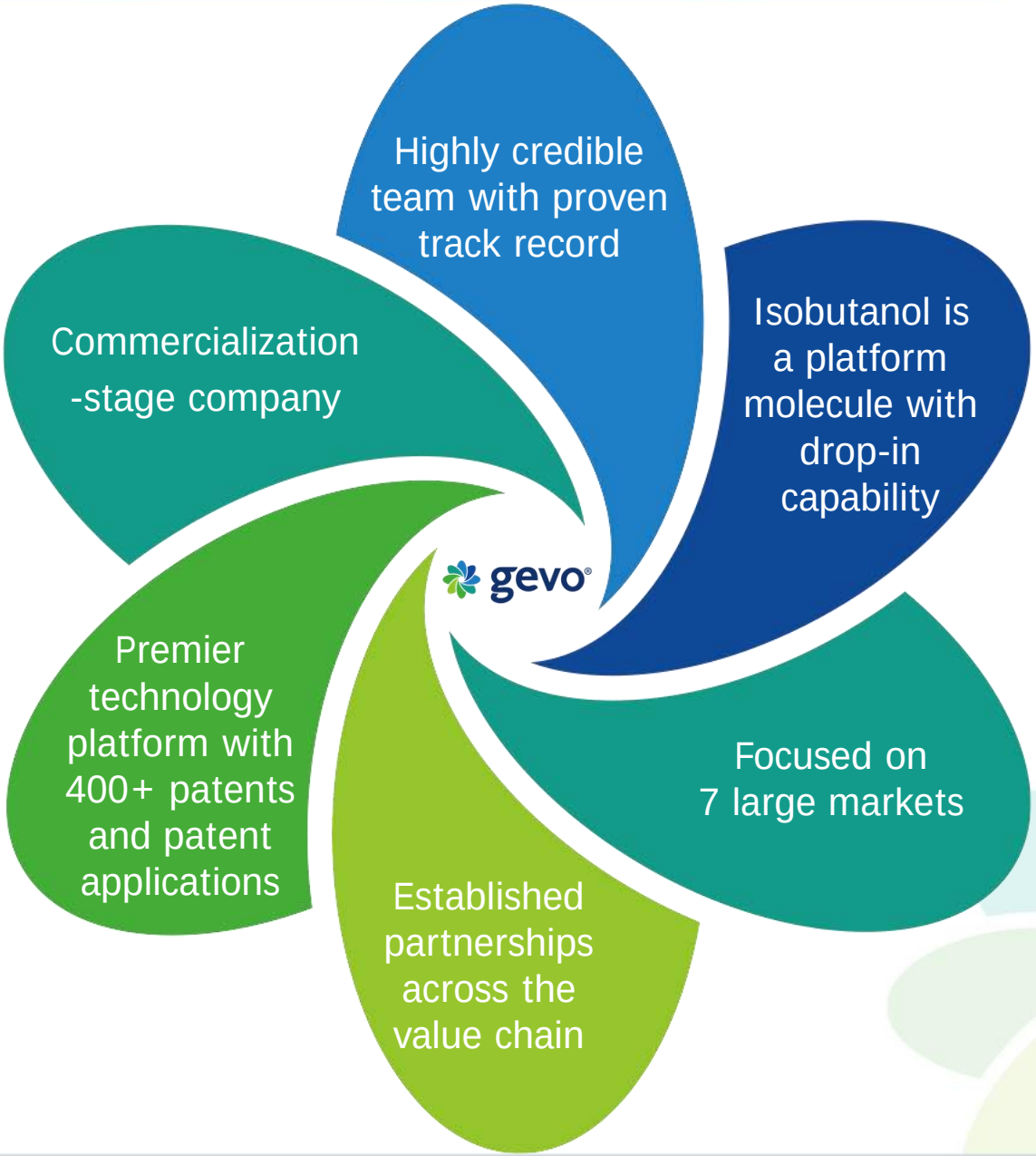
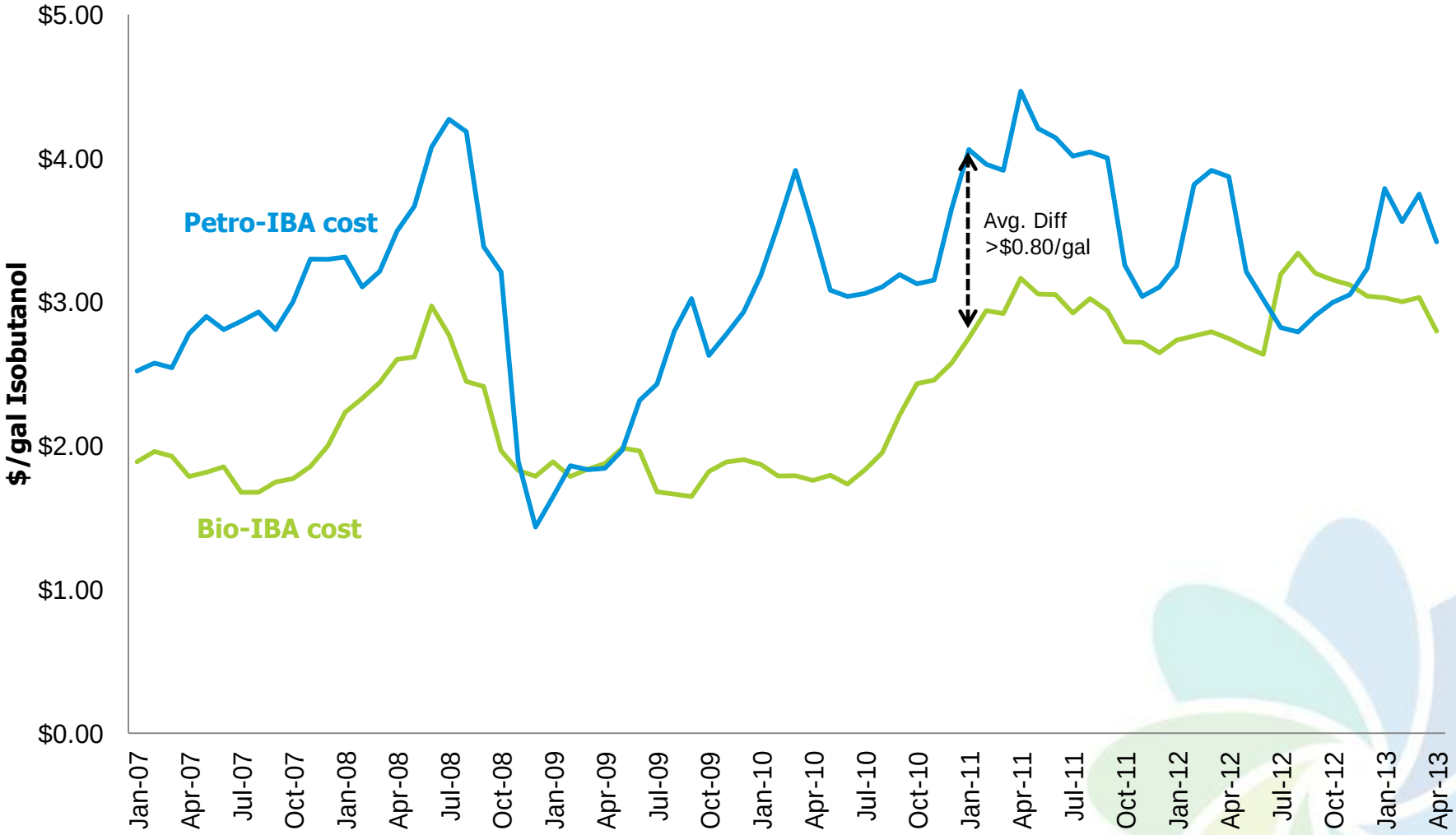
Company Overview



Cost Competitive Product Drives Market Adoption

Since 2007 >$0.80/gallon lower cost to produce than petroleum isobutanol

(Backcast, Gevo process)



Source: CMAI, Nexant, CBOT, Gevo Process Estimates

*Cash Cost FOB Plant Gate

Multiple Feedstocks; Proprietary Technology; Numerous End Markets

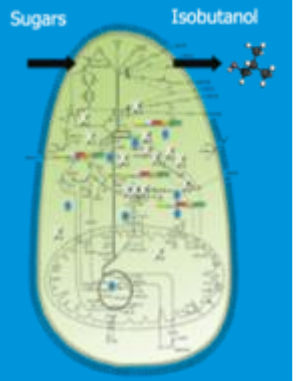
Feedstock



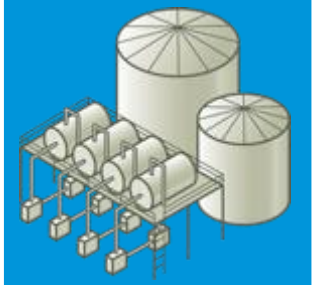


Proprietary Technology

Bio-Cracker



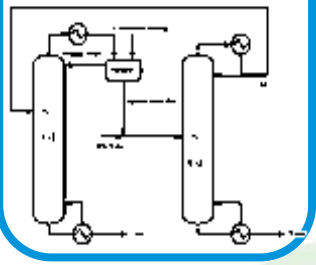
GIFT® Separator



Target Markets

Direct "drop-in"

Green Processing

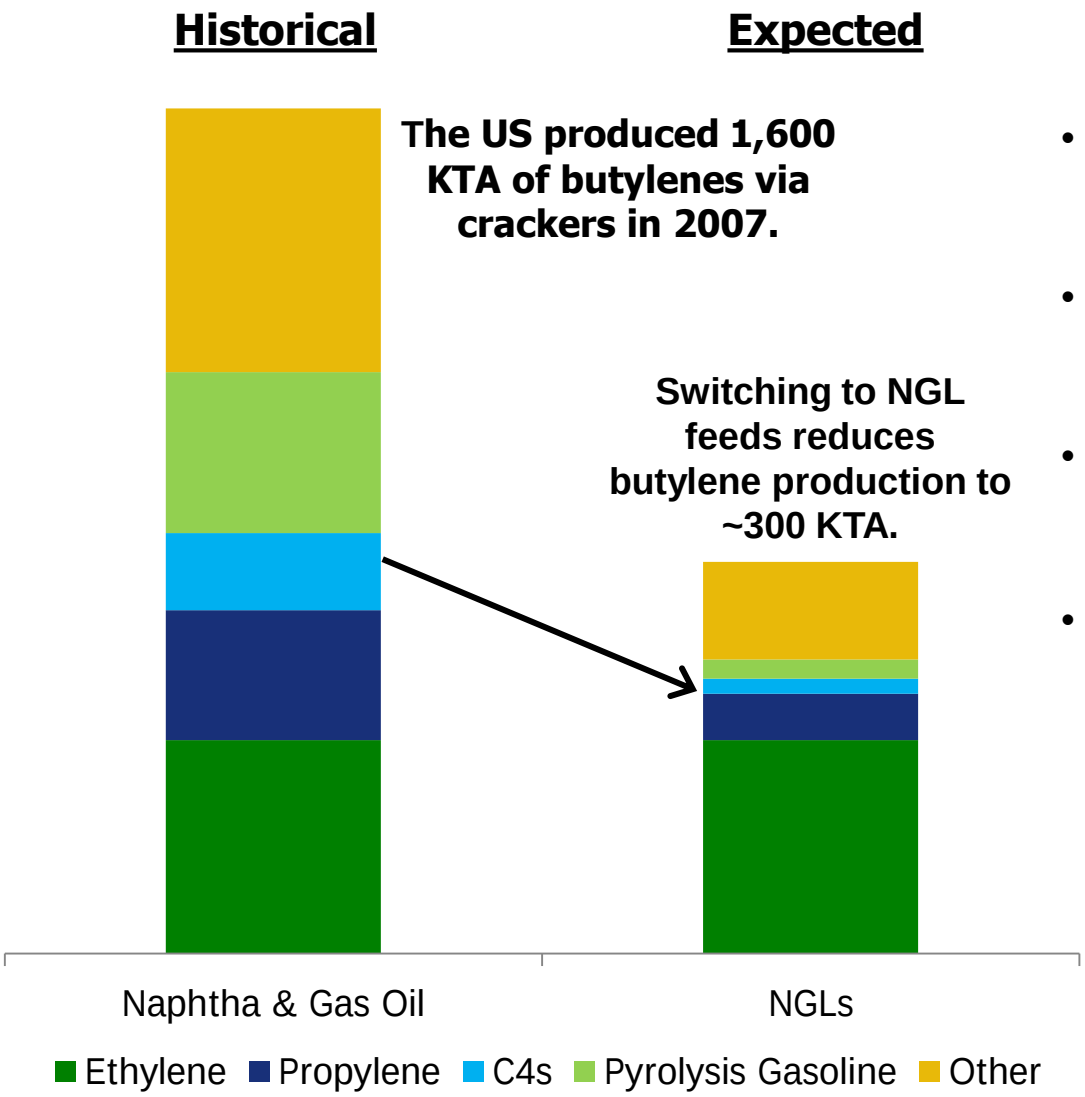


Seven Strategic End Markets; Strong Customers

Specialty Chemicals	Gasoline Blendstock	C4 Market	Bio-PX/PET	Bio-Jet	Hydrocarbon Fuels	Co-Product Revenues
"Lower Cost, Drop-In"	*"Cleaner Performance"*	*"Structurally Short Supply"*	*"Green Supply Chain"*	*"High Performance"*	*"Fully Renewable"*	*"Food First"*
~$7bln TAM	**~$100bln TAM**	**~$6bln TAM**	**~$100bln TAM**	**~$200bln TAM**	**>$1trl TAM**	**~$7bln TAM**
Sasol off-take and distribution agreement in place	Mansfield agreement, with their 900+ supply points, will initially focus on Marine	**LANXESS 10-year exclusive global supply agreement in place**	Coca-Cola partnership to create fully renewable PET for plant-based packaging	U.S. Air Force's (USAF) initial volume delivered with testing underway	Mansfield agreement, with supplier network in place, will support regional distribution rollout strategy	**Purina, the premier brand owner, partnership to maximize value of co-products**
Accounts for majority of initial capacity	VP Racing Fuels to evaluate a wide array of fuel applications	Negotiating terms for Canadian supply agreement	**Toray off-take agreement to create renewable Paraxylene for fibers and films**	USAF interested in energy security / alternative jet fuel supply		Exploring how to enhance the value of isobutanol Distillers Grains (iDGs™ or animal feed)
Customer sampling of Gevo's isobutanol has begun	LOI with Total to evaluate isobutanol as a second-gen biofuel blendstock			**USAF test flight end of June**		
				United Airlines LOI in place		

Source: Company materials, IEA, EIA and Nexant

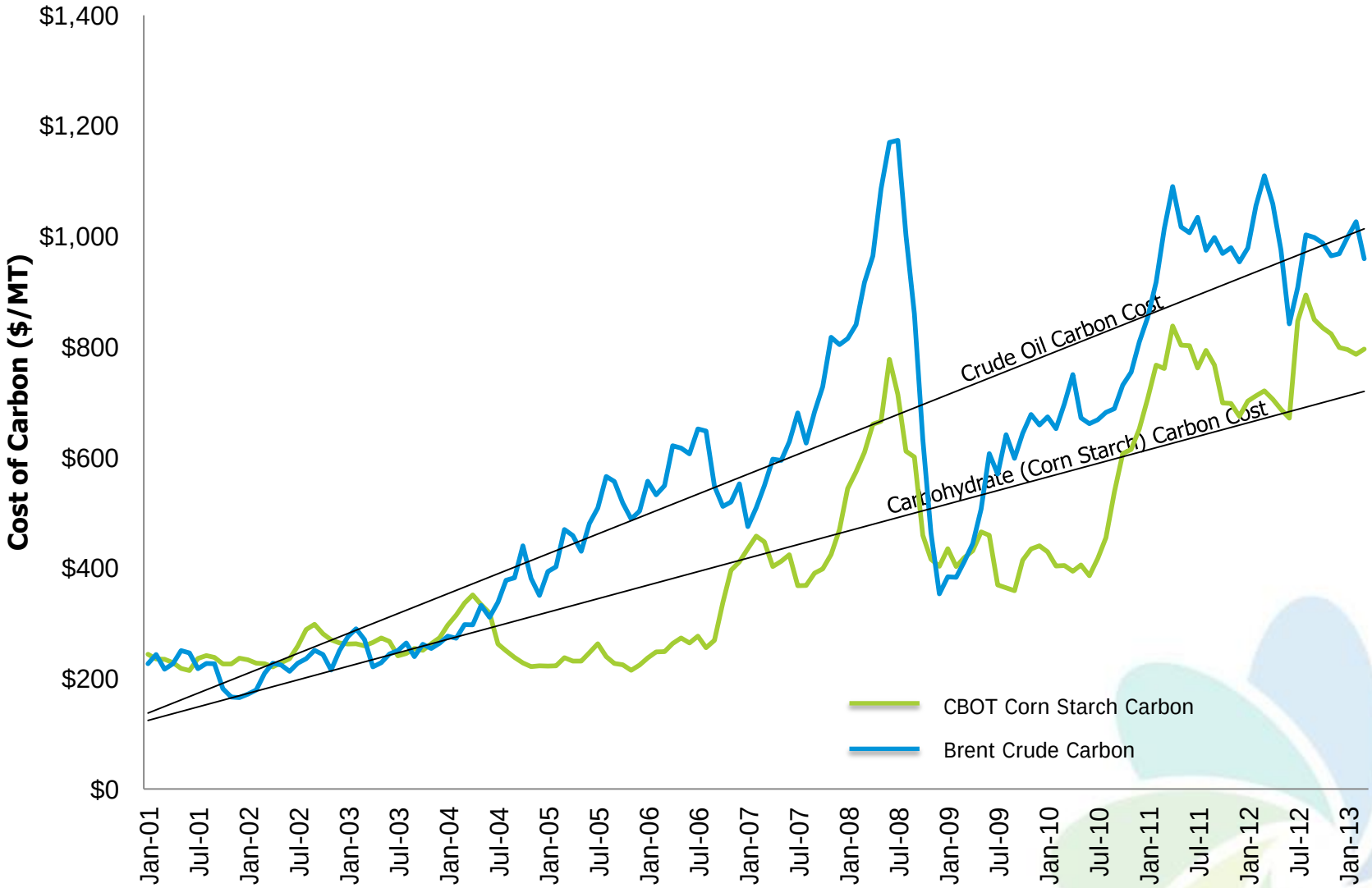
Shift in Petrochemical Feedstock Drives Gevo Opportunity



- NGL's account for 85% of cracker feedstocks
  - Up from 65% in 2005
- <10% of ethylene produced from naphtha
  - Down from 30% in 2005
- Many crackers have completed capital projects to further maximize NGL feeds
- All new projects being announced will utilize ethane, NGL feeds (world scale plants from Dow, Shell, ExxonMobil, Chevron Phillips)
  - Over 50 new chemical projects will invest $64.5 B by 2017, nearly all driven by NGL feedstock economics with the largest proportion of projects being ethane crackers

Source: Figured adapted from CMAI, SRI Consulting, American Chemistry Council

Oil Costs Expected to Rise Faster than Carbohydrates



Source: CBOT & EIA

Economics and Pricing Breakdown

	Lower Oil	Current	Higher Oil
Oil (MT)	$445 ($60/bbl)	$668 ($90/bbl)	$1,002 ($135/bbl)
Carbohydrate (MT)	$258 ($5.50/bu corn)	$305 ($6.50/bu corn)	$305 ($6.50/bu corn)
Oil / Carbohydrate Ratio	1.7	2.2	>3
	$10 B	>$40 B	>$3 T

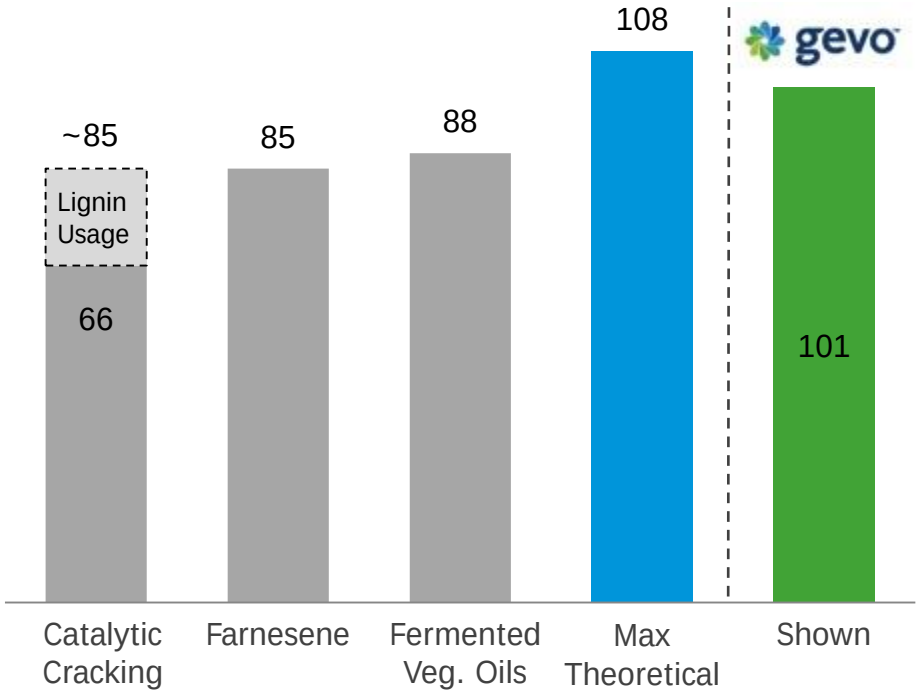
****Market opportunity driven by spread between carbohydrate and oil**

Note: The lowest the ratio has been in last 10 years is 1.5 (Dec 2001 – Jan 2002)
See previous page for sources / assumptions.

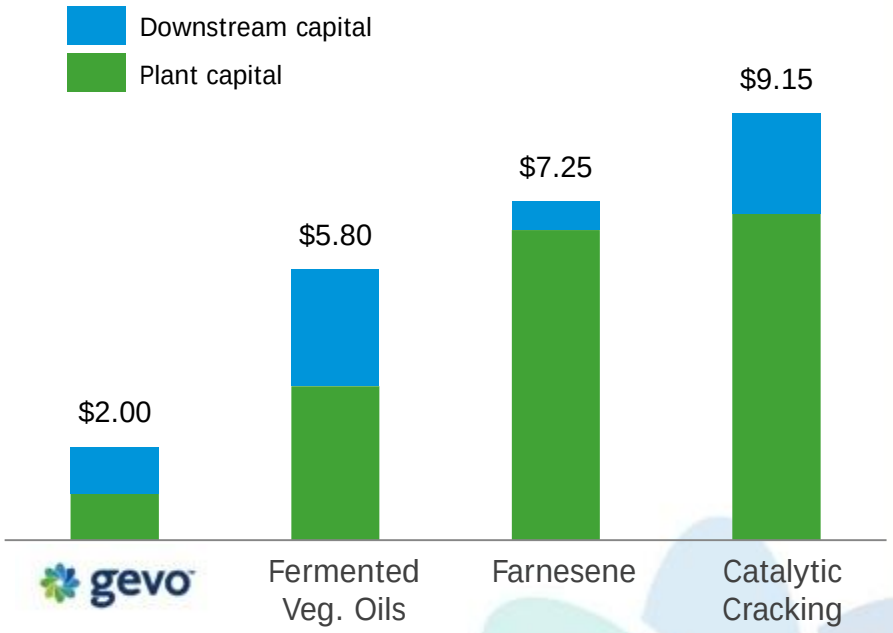
Source: ICIS, CMAI, Nexant

Yield and Capital Cost Comparison

Yield
Hydrocarbon Gallons/MT Sugar



Total Capital Cost
Finished Hydrocarbon $/gal



Comparing isobutanol yield to cost of production, Gevo's propriety processes shows a clear advantage over conventional biofuels, as well as traditional catalytic cracking oil refineries.

(1) Process yields were assumed at 95% for anaerobic processes and 90% for aerobic processes. Adapted from: Dumesic, JA "Catalytic Strategies for Changing the Energy Content and Achieving C-C Coupling in Biomass-Derived Oxygenated Hydrocarbons" *Chemsuschem* **2008,** *1*, 725-733.
Keasling, JD, "Biosynthesis of Plant Isoprenoids: Perspectives for Microbial Engineering," *Annual Review of Plant Biology* **2009**, *60*, 335-355.
Rude, MA "New Microbial Fuels: a Biotech Perspective" *Current Opinion in Microbiology* **2009**, 12, 274-281.

Capital costs based on public data, Wall Street estimates and Gevo estimates.

Isobutanol: How Gevo Displaces Oil

Basic Petrochemical Industry Map

Steam Cracking

Naphtha

Olefins

Aromatics

Ethylene

Propylene

Butylenes

Butadiene

Pyrolysis Gasoline

Benzene

Toluene

Xylenes

Hydrocarbon Fuels

Diesel

Gasoline

Jet Fuel

Chemicals and Materials

Polyethylene

MTBE

EDC

Vinyl Chloride

Poly(vinyl cloride)

Ethylene Oxide

Ethylene Glycol

Polyester

alpha-Olefin

Ethanol

Isobutene

Polyisobutylene

Polypropylene

Propylene Oxide

Polyols

Acrylonitrile

Polyacrylonitrile

Polybutadiene

Cumene

Phenol

Butadiene-Styrene

Acetone

Polystyrene

Ethyl Benzene

Styrene

ABS

Methyl Methacrylate

SB Latex

Adipic Acid

Nylon 66

Cyclohexane

Caprolactam

Nylon 6

Toluene Diamine

Toluene Diisocyanate

Polyurethane

ortho-Xylene

Phthalic Anhydride

Plasticizers

meta-Xylene

Isophthalic Acid

Unsaturated Polyesters

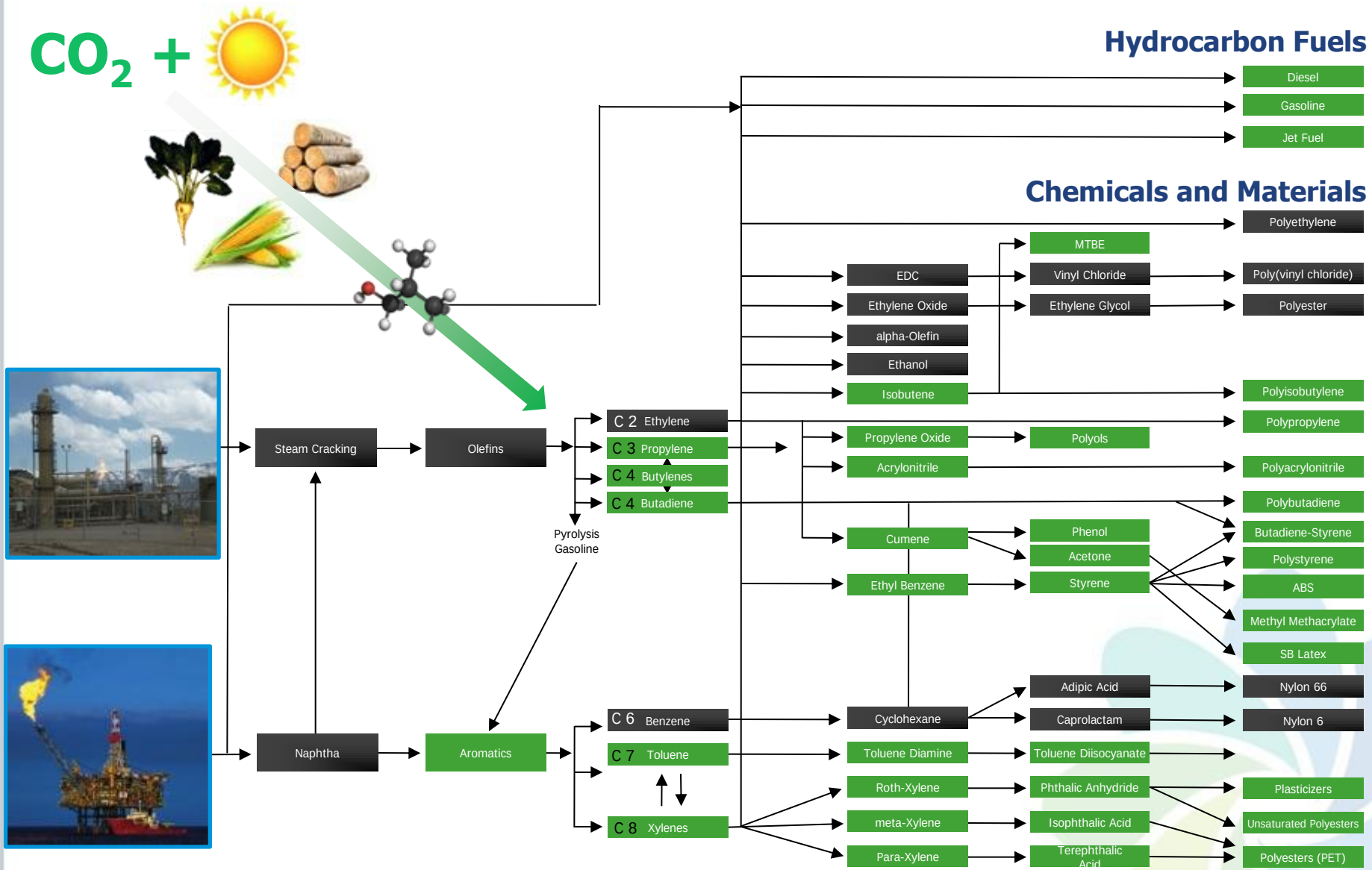
para-Xylene

Terephthalic Acid

Polyesters (PET)

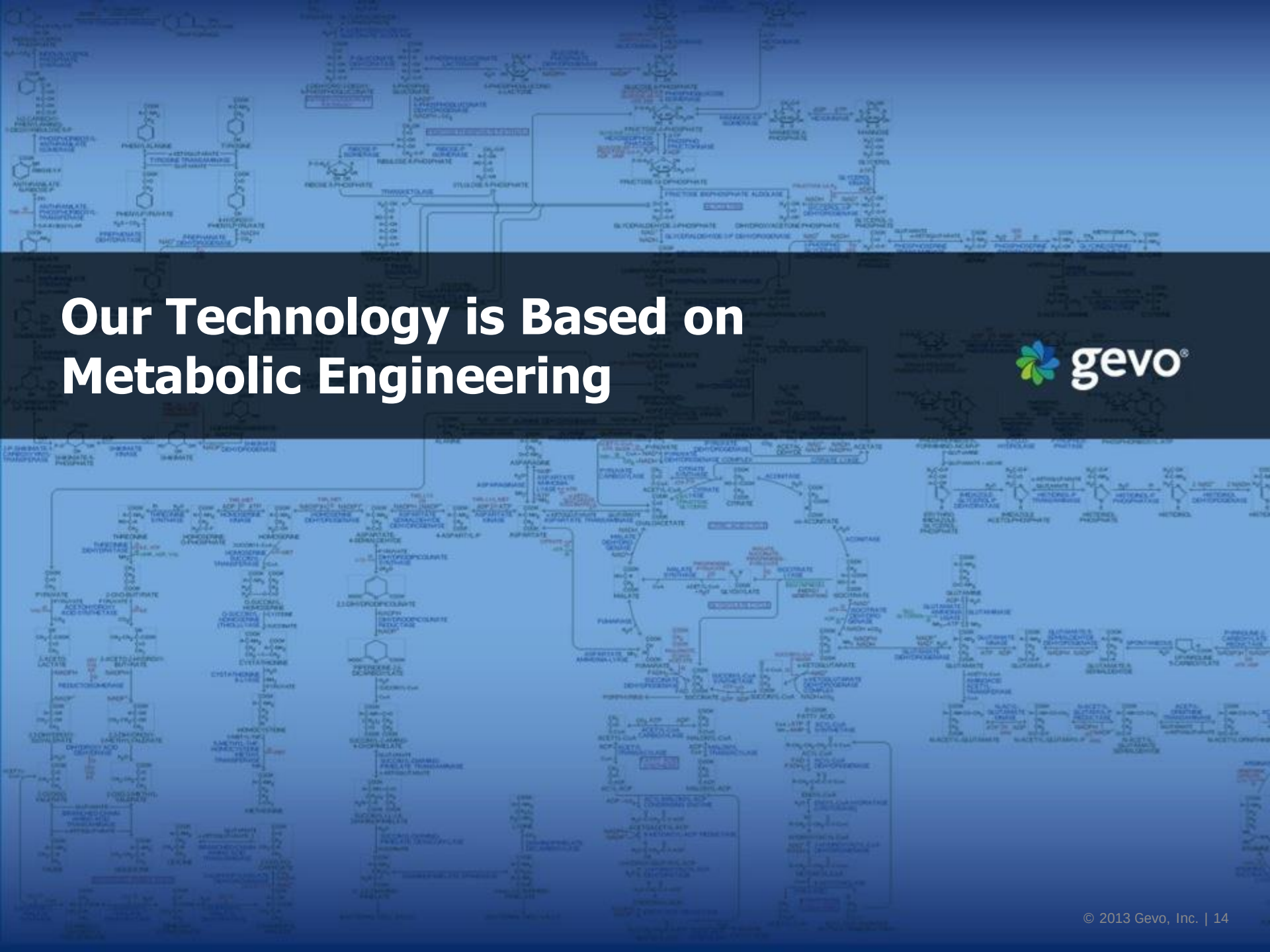
Source: Adapted from Nexant

Green Building Block Leverages Existing Processes and Businesses



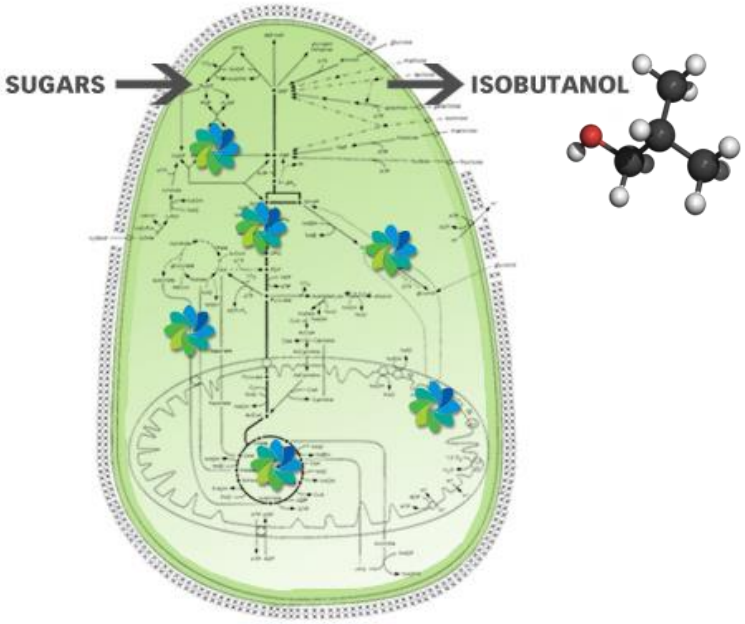
Source: Adapted from Nexant
Note: Chemicals shaded green denote those which can be made from isobutanol-derived building blocks.

Our Technology is Based on Metabolic Engineering



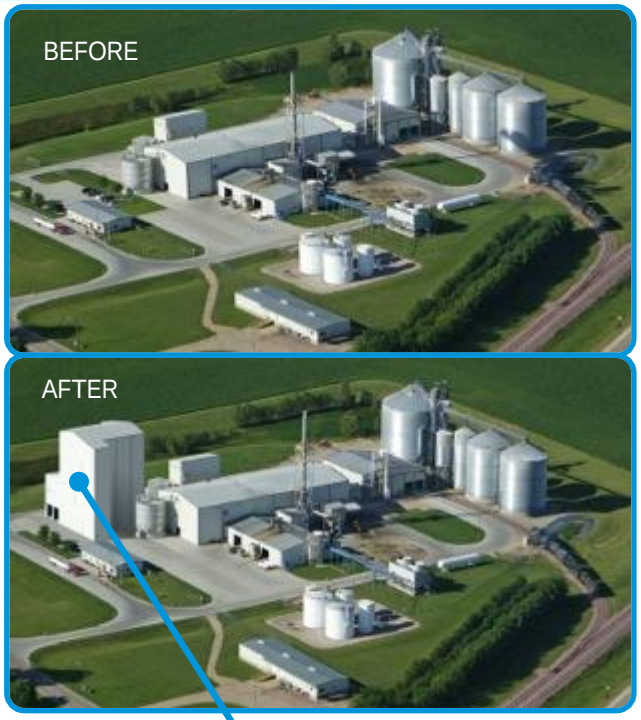
Technology Based on Metabolic Engineering

- Proprietary yeast biocatalyst converts sugars (carbohydrates) to isobutanol
- Combination of biotechnology and process technology leads to competitive position
- Economic focus drives innovation
- Previously demonstrated commercial targets:
  - Yield 94% (goal 92%)
  - Concentration >107 g/l (goal >105 g/l)
  - Productivity Rate 2 g/l/h (goal 2 g/l/h)

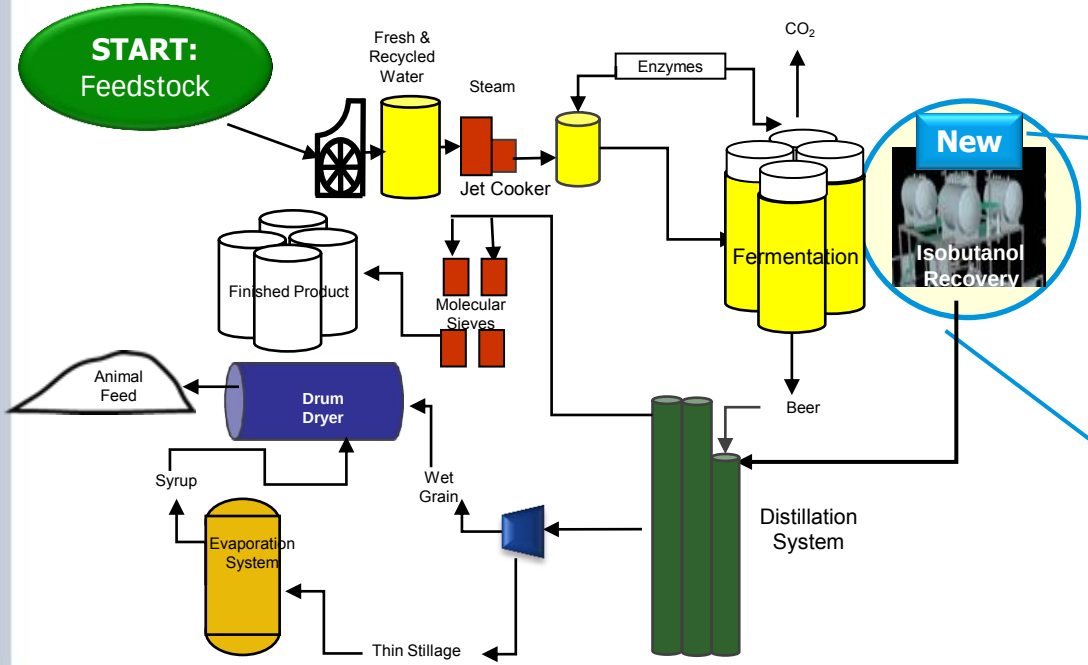


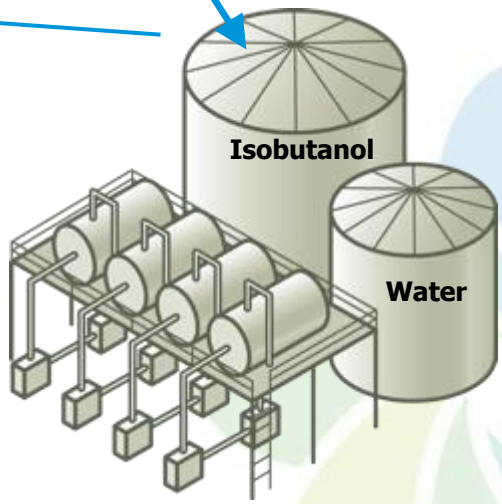
How We Produce Isobutanol (GIFT®)

- Our patented Gevo Integrated Fermentation Technology® (GIFT®) continually separates isobutanol during fermentation
- Gevo owns the patent covering ethanol plants retrofitted to produce isobutanol

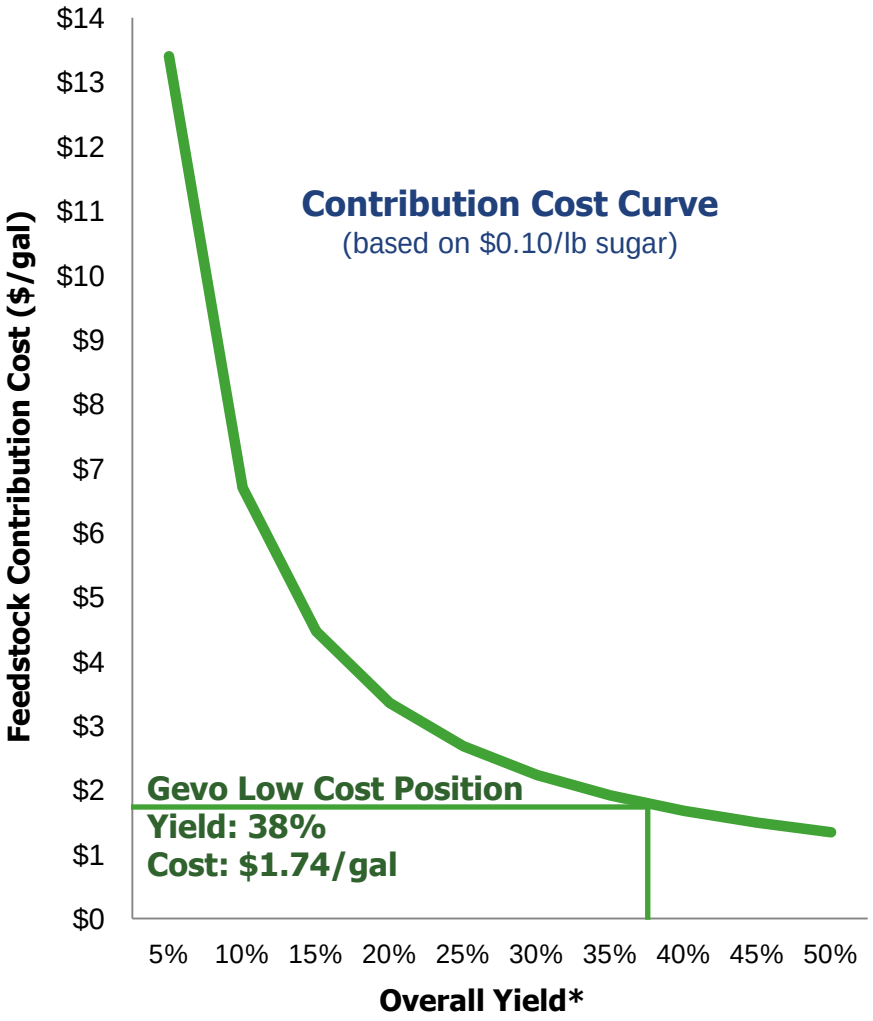


Standard Fermentation Process





High Yield Drives Low Cost



*Overall Yield = Pathway Yield x Process Yield
Source: Gevo Process Estimates

Yield defined by molecule & process

Overall Yield*

Gevo: 41% x 94% = 38.5%

Company A: 25% x 75% = 18.8%

Feedstock = ~70% of net cash cost to produce

Feedstock Contribution Cost

Sugar ($/lb) ÷ Overall Yield x Density (lbs/gal)

Gevo: $0.10 ÷ 38.5% x 6.7 = $1.74/gal

Company A: $0.10 ÷ 18.8% x 6.7 = $3.57/gal

Higher yield = less sensitivity

Sensitivity to $0.01/lb change in sugar cost

@ 38.5%	=	$0.18/gal	$7.56/bbl
@ 18.8%	=	$0.37/gal	$15.54/bbl

Commercial Production

Our Plants

- 1st Commercial Plant: Luverne, MN
  - 18 MGPY commercial isobutanol production facility
  - Purchased in 2010 & 100% owned by Gevo

Luverne, MN Plant

- Redfield Energy, SD - Joint Venture
  - ~40 MGPY commercial isobutanol facility
  - Entered into JV with 650 member Co-op in 2011 with economics, post retrofit, to be split approximately 50/50

Redfield, SD Plant

Leveraging Petrochemical & Refinery Assets

Alcohol

Targeted Hydrocarbon

Jet Fuel Blendstock

Octane, Gasoline

Diesel Blendstock

Para-xylene (for PET)

- ATJ Demonstration Facility near Houston
- Delivered >10K gallons ATJ to AFRL
- Alcohol-to-Fuel US Patent 8,193,402
  - Covers C2-C6 alcohols to hydrocarbon fuel

Gevo ATJ Fuel Makes History in USAF Flight

- June 28, 2012 40th Flight Test Squadron made history flying Gevo's 50% ATJ and 50% JP-8 fuel blend
- "It flew like a usual A-10 without any issues."
  - Maj. Olivia Elliott, A-10 pilot
- "You won't be able to determine the difference and you won't care, because all perform as JP-8."
  - Jeff Braun, Chief for the Air Force Alternative Fuel Certification Division

Feedstocks

Isobutanol Technology To Take Advantage of Many Feedstocks

FEEDSTOCK

TODAY


Corn

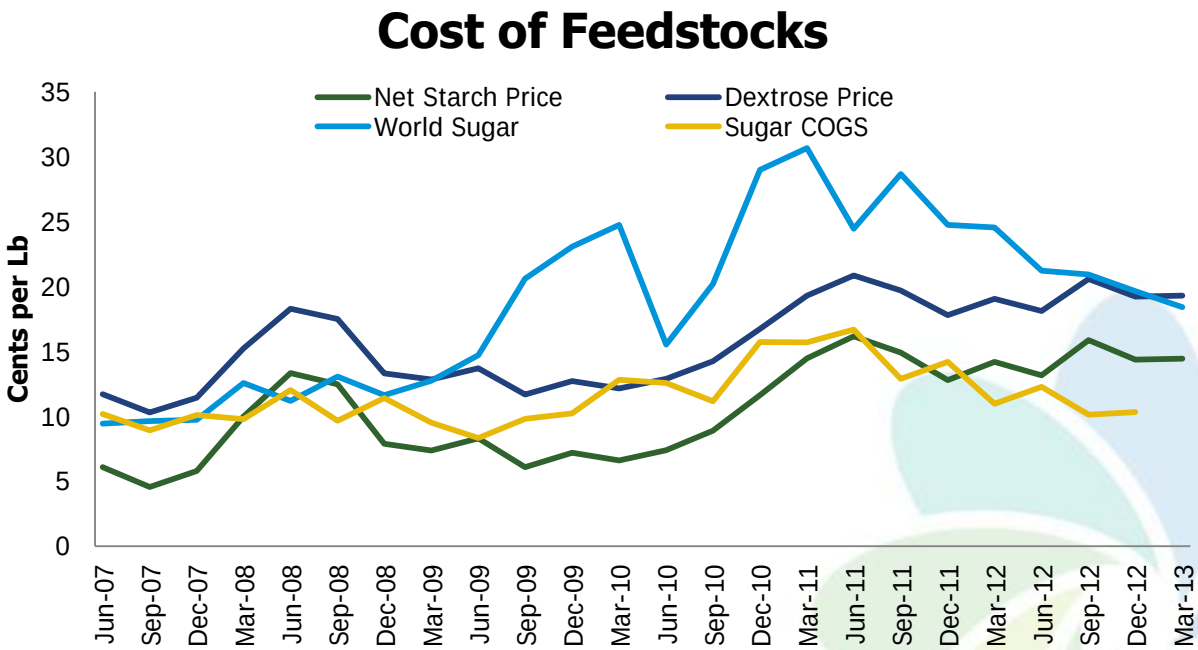

Sugar Cane

TOMORROW


Agricultural Residue


Wood

- Gevo yeast technology converts any carbohydrate feedstock to isobutanol
- Provides world wide opportunity for isobutanol manufacture
- Provides risk reduction via multiple feedstocks versus oil price volatility



Source: NYMEX, CBOT, WSJ, Cosan

Net Carbohydrate Costs

1 bushel
Corn

=

2.2 gallons
Isobutanol

&

17 lbs
Animal Feed

Example Calculation

$/bu corn	$6.50	
Less: Animal feed co-product netback ($/bu corn)	(1.48)	17.0 lbs/bu @ 75% price/bu corn
Net starch cost ($/bu corn less co-product netback)	$5.02	
$/MT Fermentable Sugar (based on net starch cost)	$292	$5.02/bu ÷ 38.0 lbs dextrose/bu x 2204.5 lbs/MT
Feedstock contribution cost / gal	$2.31	$292 ÷ 2204.5 lbs/MT ÷ 41% Yld ÷ 94% Proc Yld x 6.7 lbs/gal
Gallon/bushel yield	2.2	Equivalent IBA gal/bu conservative yield ($5.02 ÷ 2.31)

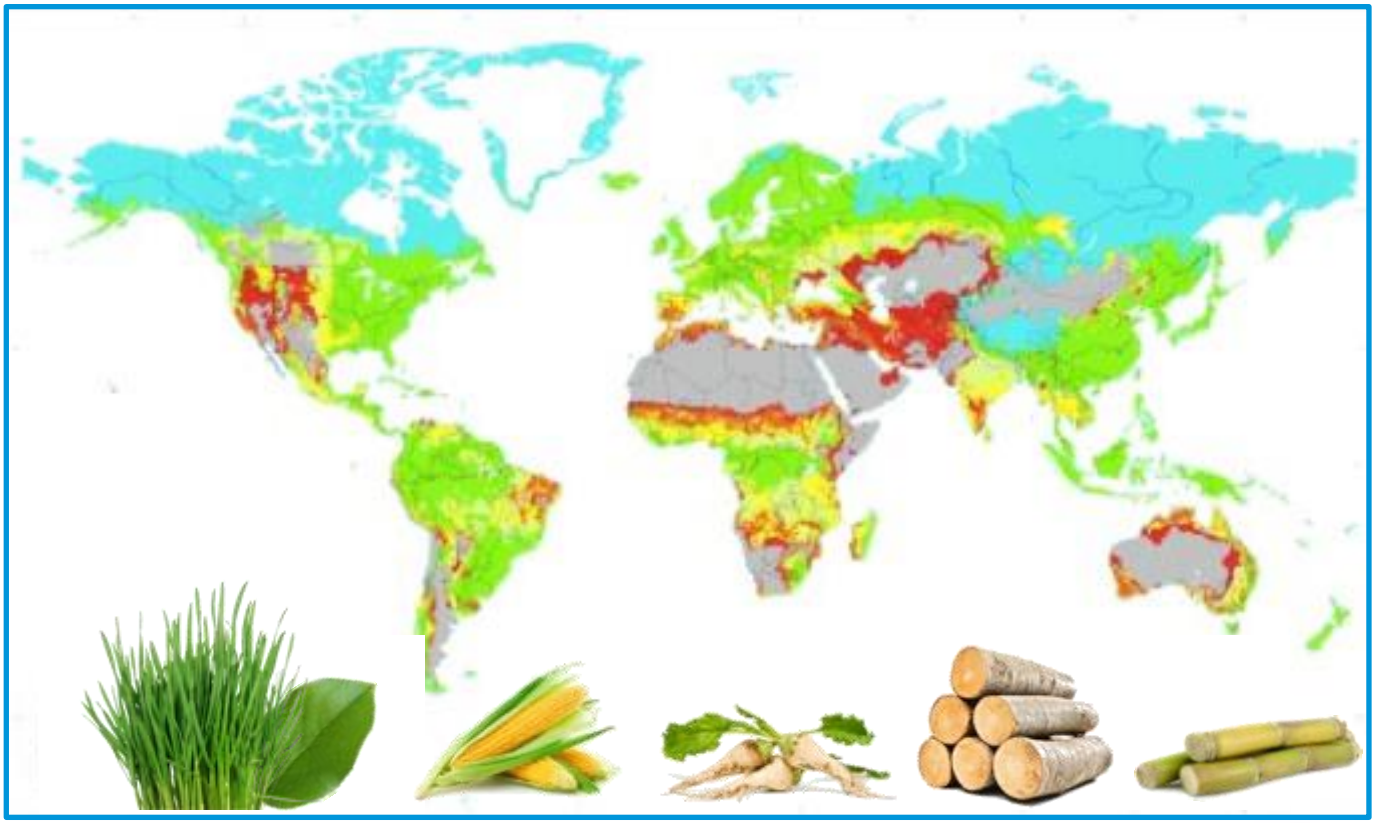
Sensitivity Table

Corn Cost ($/bu)	$4.00	$5.00	$6.00	$7.00
Co-product netback ($/bu)	$0.91	$1.14	$1.37	$1.59
Feedstock Contr. ($/gal)	$1.42	$1.78	$2.14	$2.49
$/MT Fermentable Sugar	$179	$224	$269	$314

A 10% change in iDGs™ =
$ 0.09/gal ▲ EBITDA

Note: Gevo expected gal/bu isobutanol yield. Lbs/bu animal feed adapted from Iowa Corn Growers Association estimate for ethanol.

Biomass is Abundant



We believe our technology will allow us to make isobutanol with any cost-competitive carbohydrate source, not just corn

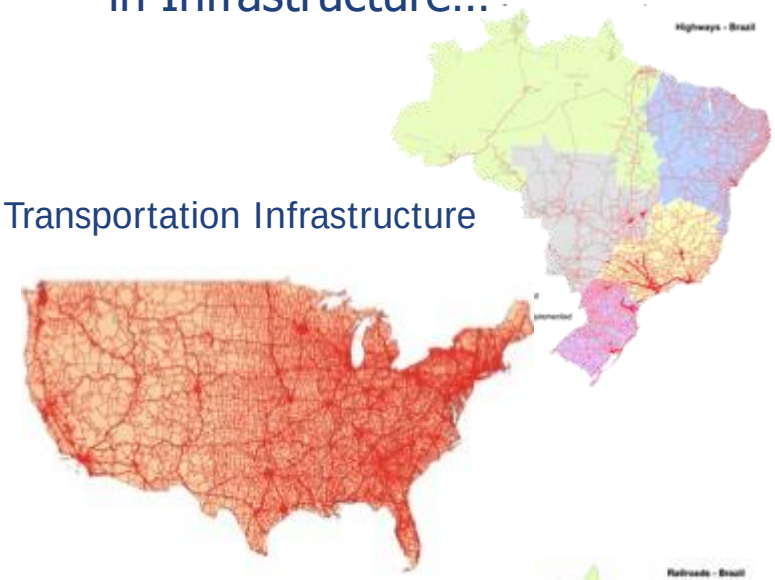
- Crop residues
- Forest products
- Wood
- Energy Crops
- Waste product residues

More biomass should increase the available pool of carbohydrates and keep costs relatively lower

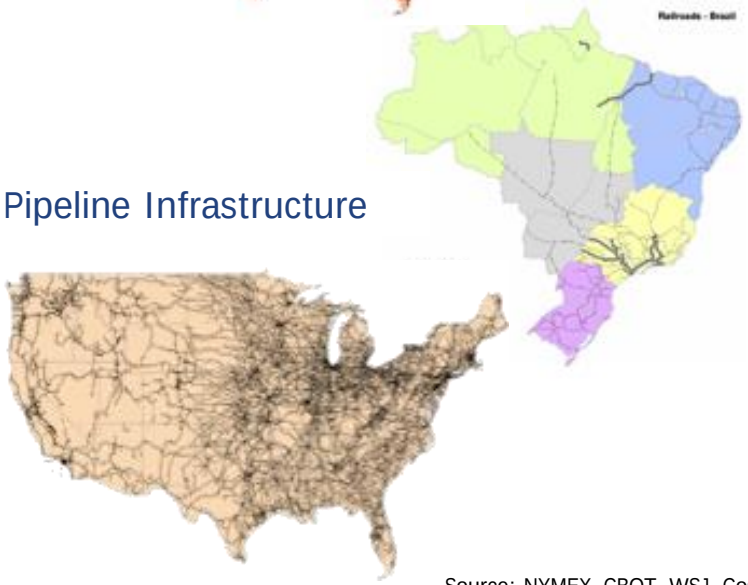
Today, U.S. is Advantaged in Feedstocks

Advantaged over Brazil in Infrastructure…

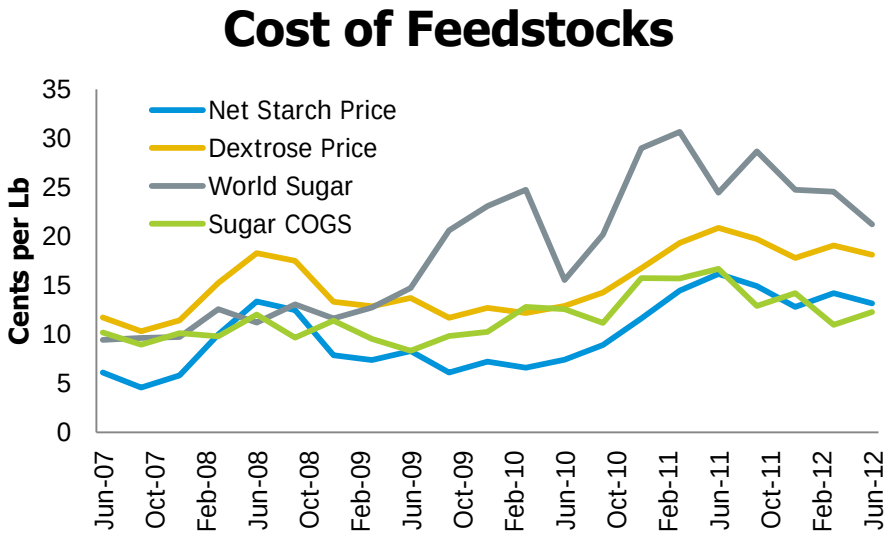
Transportation Infrastructure



Pipeline Infrastructure



Advantaged over Brazil in Price…



Advantaged over Brazil in Scale and Protein Production…

	Acres	Carbohydrate Production	Protein Production
Largest Sugar Producer in Brazil	1.7MM	14 B lbs./yr.	0
Redfield Co-op, SD, USA	10MM	15 B lbs./yr. If only 1/3 of land is corn	7 B lbs./yr. If only 1/3 of land is corn

Source: NYMEX, CBOT, WSJ, Cosan

Next steps – a look forward

Financial overview

Pathway to commercial production at Luverne

DRAFT

Q2 2013	Q 3 2013	Q 4 2013	2014

Single Train Mode testing

Complete bio-burden testing validating contamination reduction in Single Train Mode (STM)

Run STM in batch mode demonstrating ability to produce batches with low contamination rates

- Fermentation using dextrose
- Demonstrate GIFT® system

Deliver renewable isobutanol for conversion to ATJ and bio-PX

Validate entire operation

Run STM in batch mode

- Fermentation runs using corn mash
- Test operating systems throughout the plant
- Operate with consistency
- Complete commissioning

Commercial operations

Operate plant at initial commercial scale

- Increase scale of production
- Deliver product to customers
- Produce and deliver iDGs™

Market Customer Commitment Timeline

2013	2014	2015
Isobutanol used in specialty chemicals & promoted in niche markets		
	C4 & ATJ market introduction	
		IBA conversion into Bio-PX

sasol
reaching new frontiers

Off-take agreement to sell to Sasol's $1B international solvent business

Mansfield Fuels. Simplified.

Partner with Mansfield Oil to market to the marine industry

VP Racing Fuels

VP Racing Fuels agreement targets the small engine market

LAND O LAKES FEED PURINA A DIFFERENCE YOU CAN SEE

Land O'Lakes Purina Feed, LLC off-take & market-ing agreement to sell high-protein animal feed

LANXESS

Gevo addresses C4 void with LANXESS and others as Pet-chem feedstock shifts from oil to NGL resulting in 80% shrink in C4 yield

UNITED

Sell ATJ Fuel directly to DOD & Commercial Air carriers

U.S. AIR FORCE

Gevo aligns with Total to evaluate second-gen biofuel blendstock

TOTAL

Coca-Cola

JDA with Coca-Cola who aims to use PlantBottle® packaging for all their PET plastic bottles by 2020

TORAY
Innovation by Chemistry

Toray to use Gevo's PX and commercial renewable MEG to produce fully renewable PET for fibers and films


gevo®