# \*\*Metabolix®

**Advanced Bio-Materials:** A Platform for Growth

**26<sup>th</sup> Annual ROTH** Conference

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## Safe Harbor Statement\*

Our presentation includes, and our response to various questions may include, forward-looking statements about the Company's future plans and objectives. Any such statements are subject to risks and uncertainties that could cause the actual results and the implementation of the Company's plans and operations to vary materially. These risks are discussed in the Company's filings with the S.E.C.

\*Under the Private Securities Litigation Reform Act of 1995

# **Investment Highlights**



**Differentiated Performance Bio-Materials Portfolio** 



**Well Positioned Relative to Key Market Trends** 



**Proven Technology and Customers in High-Value Applications** 



**Capital-Efficient Business Model** 



**Extensive IP Portfolio** 



## **Metabolix Mission**

# Growth Through Advanced Bio-Materials

Leading-edge bioscience and innovative capabilities to address the growing demand for sustainable materials



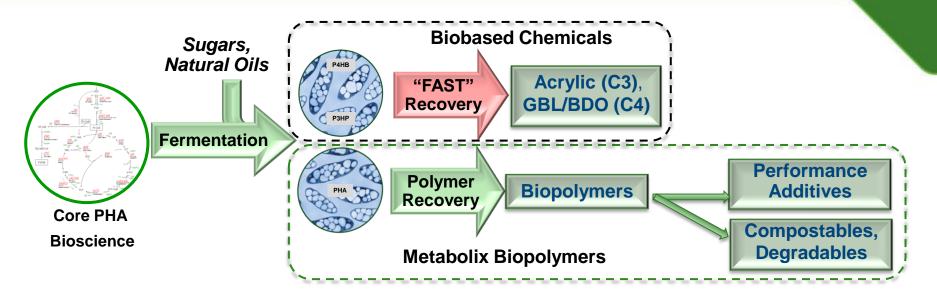
# 2013 Accomplishments

- Launched three new biopolymer products
  - Mvera B5010 compostable resin (film/bags)
  - Mvera B5011 transparent compostable resin (film/bags)
  - I6003rp performance additive for PVC recyclate
- Enhanced commercial position in biopolymers business
  - Driving to site selection for biopolymers manufacturing
  - Developing PHA performance additive solutions for a range of applications
  - Improved product range in films, with new formulations and compostable resin supply agreement with Samsung Fine Chemicals
  - Strategically managing existing inventory to focus on key prospects
- Key technical advances in polymers, biobased chemicals and crops programs
- Filed new patent applications on strategically important technologies; allowed / granted 19 new patents



## Metabolix Core PHA Technology

Versatile Technology Addresses Chemicals and Polymers Markets



- Manufacturing technology proven
- Biopolymers: Gaining traction in the performance additives; focusing on unique polymer properties and product forms in all biopolymer segments
- Biobased Chemicals: Leverage PHA platform and breakthrough "FAST" process for chemicals; anticipate advantaged purity/cost in bio-chemicals
- Transformational crop science program: Aligned with key trends



## Our Products Address Critical Issues

## Key Societal and Customer Needs

- 1. Global migration away from fossil fuels
  - Bio-based raw materials
- 2. Enhancing the management of waste
  - Biodegradable polymers
- 3. Improving the performance of existing materials
  - Versatile, differentiated chemistry



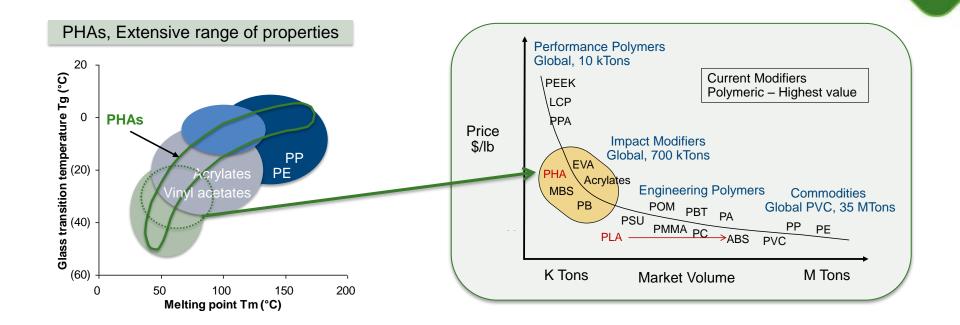






## Biopolymers Focus

PHAs Match a Wide Spectrum of Polymer Performance Properties



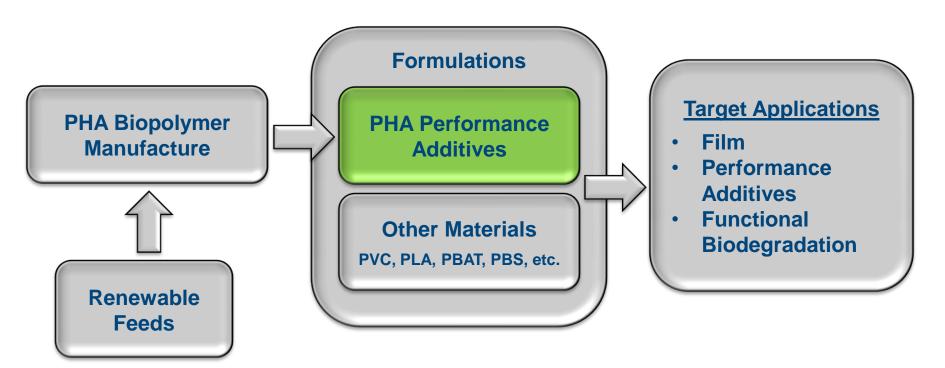
- A significant portion of the global market for polymers is addressable with PHAs
- Focused on segments where price/performance profile delivers value



## Biopolymers Focus

Performance Additives Business Model

PHA performance additives enable formulations that meet customer needs, enhance system performance and/or reduce system cost



# Biopolymers Focus: Performance Additives

Improving Performance of PVC and PLA Plastics

#### PVC: \$1.5 B of Performance Additives

- Metabolix performance additives for PVC can provide plasticization without phthalates, improve UV stability, enhance use of recycled PVC, improve strength and improve PVC processing
- Metabolix performance additives for PVC can also increase "permanence" of other PVC additives, thereby improving properties and reducing migration

### PLA: The Predominant Bioplastic

- Leading bioplastic growing at 20% p.a.
- Metabolix performance additives for PLA can improve softness and flexibility of PLA and enable film applications with high biocontent, transparency, and compostability











# Biopolymers Focus: Biodegradable Films

Strong Societal Growth Drivers; Rich Product Pipeline

🔀 \$400 million market growing 20% p.a.

Growth driven by need to improve organic waste management

Range of Metabolix products to meet customer needs

- Compostable bags (B5010, B5011)
- Packaging films
- Barrier films
- Super strong films
- Agricultural mulch films









# Biopolymers Focus: Functional Degradation

PHA Polymers Naturally Biodegrade in Soil, Lakes and Oceans

- PHA biopolymers are naturally degradable in oceans, streams, soil and anaerobic digestion
- Highly differentiated numerous high-value opportunities
  - Anaerobic digestion
  - Agriculture/Horticulture
  - Fishing/Shellfish industry
  - Water treatment
  - Marine degradable bags

Mirel Biopolymers: Marine Biodegradation





## **Building Global Relationships**

Establishing Partnerships Based on our Differentiated Position

# Collaboration with Samsung Fine Chemicals (Announced July 2013)

- Goal of expanding the global market for biodegradable polymers
- Products designed to deliver best performance and value to targeted customer applications
- Complementary products
  - Metabolix: PHA
  - Samsung: PBAT, PBS
- Complementary regional positioning
  - Metabolix: US, Europe
  - Samsung: Asia





# Biopolymers: Foundation Established Building Momentum



- **Develop Attractive Product Portfolio:** Film, Performance Additives, Functional Biodegradation
- Build Customer Relationships: Established first annual contract; Developments ongoing with leaders in compostables and PVC

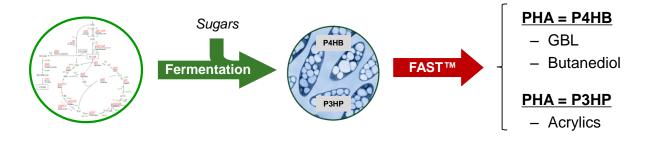
#### The Next Priorities: What are Investors Looking For?

- Establish manufacturing
- Develop and commercialize business to baseload new plant



## **Biobased Chemicals**

#### Utilizing Metabolix Platform Technology to Produce Specialty Products



# "C3" Chemicals Acrylates: > Market size ~\$7 B Applications: Paints / coatings, diapers, personal care products, pharmaceuticals

# "C4" Chemicals GBL/Butanediol: > Market size ~\$3 B Applications: Automotive (PBT), textiles (spandex), solvents, personal care products, pharmaceuticals

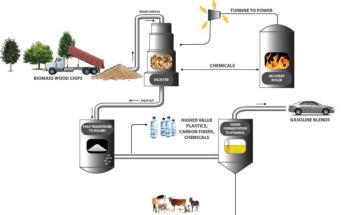
- Metabolix differentiation: proven fermentation process and simple FAST™ recovery process; High purity product
- Recent technological advances: ultra-high purity, deuterated C4, 2<sup>nd</sup> generation sugars as feedstock
- Currently transitioning from laboratory to scale-up



# Recent Technological Advance

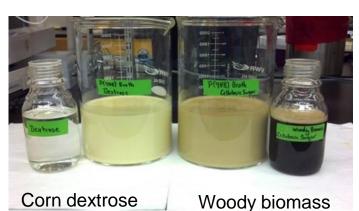
Use of Second Generation Cellulosic Sugar



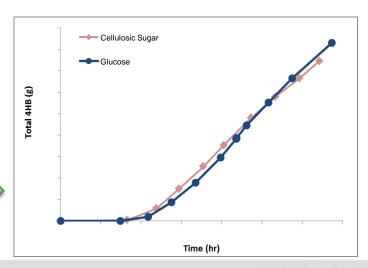




- Leverage existing sources of biomass
- Leverage feedstock costs









# Metabolix Crop Research

### CO<sub>2</sub> Feedstock: Industrial Oilseed and Biomass

- Research activity leverages Metabolix PHA platform technology
- Genetically modify crops to produce PHB polymer directly in non-food crops
- Low cost pathway to plastics, chemicals, and fuels / numerous commercialization options
- Building tool set and IP around enhanced photosynthetic capacity of plants core capability for improved crop yield

#### Oilseeds

- Co-production of bioplastics along with vegetable oils and meal
- Leverage existing infrastructure
- Target crop: Camelina sativa

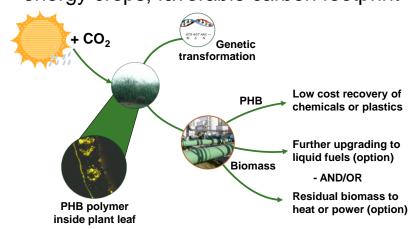


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#### **Biomass**

 Switchgrass/Sugarcane, high density energy crops; favorable carbon footprint





## Financial Results

*In Millions\* (except per share amounts)* 

	Q3 2013	Q3 2012	Nine Mo. 2013	Nine Mo. 2012
Revenue	\$0.9	\$0.7	\$4.5	\$40.9
R&D Expense	\$4.6	\$4.9	\$14.4	\$16.0
SG&A Expense	\$3.0	\$3.2	\$9.7	\$11.0
Net Income	(\$7.3)	(\$7.7)	(\$21.9)	\$13.1
(Loss) Per share	(\$0.21)	(\$0.23)	(\$0.64)	\$0.38
Cash Balance	\$25.7	\$43.8	\$25.7	\$43.8

March 27: Report FY2013 financial results and business update



<sup>\*</sup>Numbers subject to rounding.

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