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Cost Competitive Bio-Aromatics

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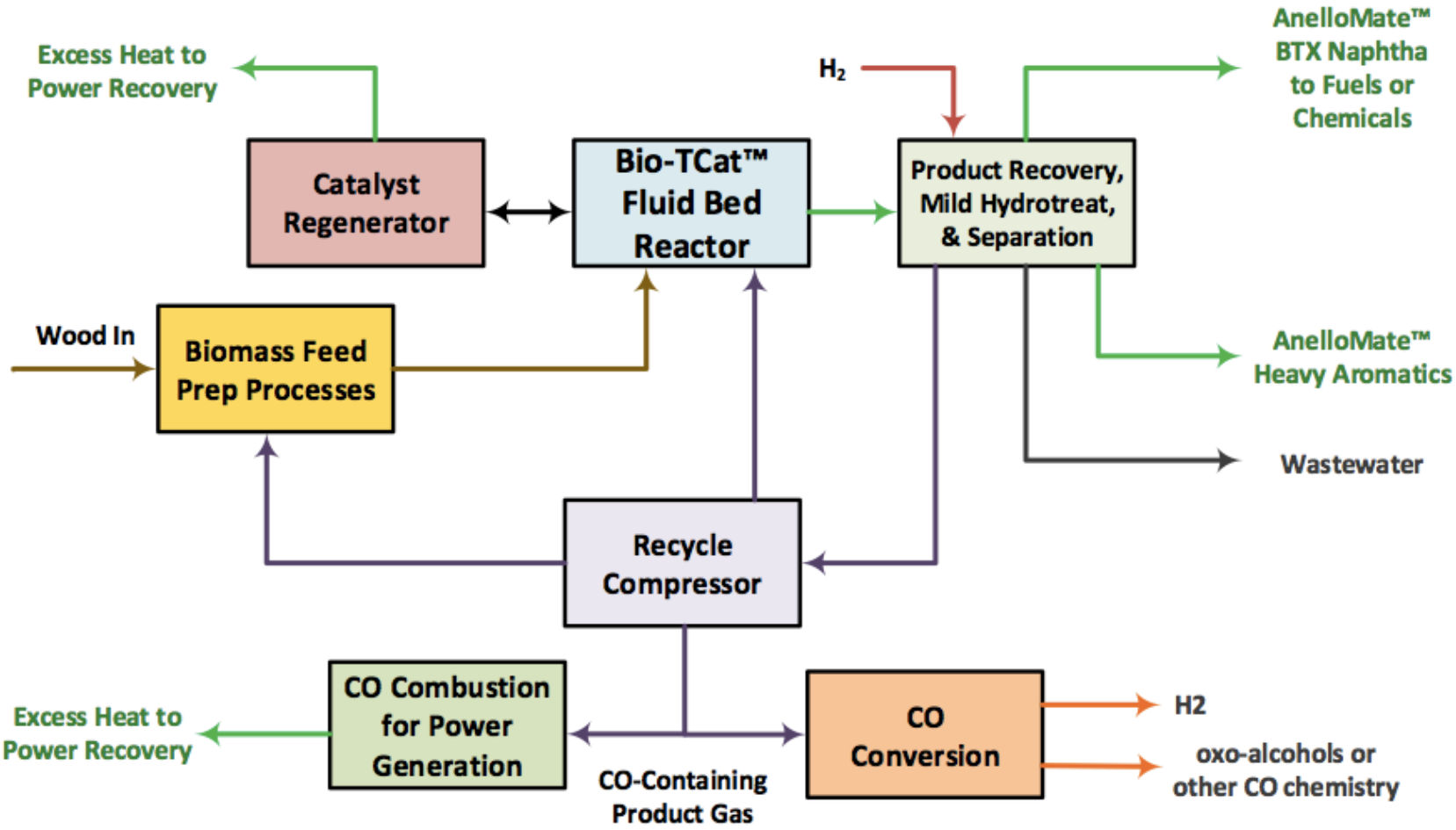
The Bio-Tcat™ Process is low cost

Thermal Catalytic Biomass Conversion



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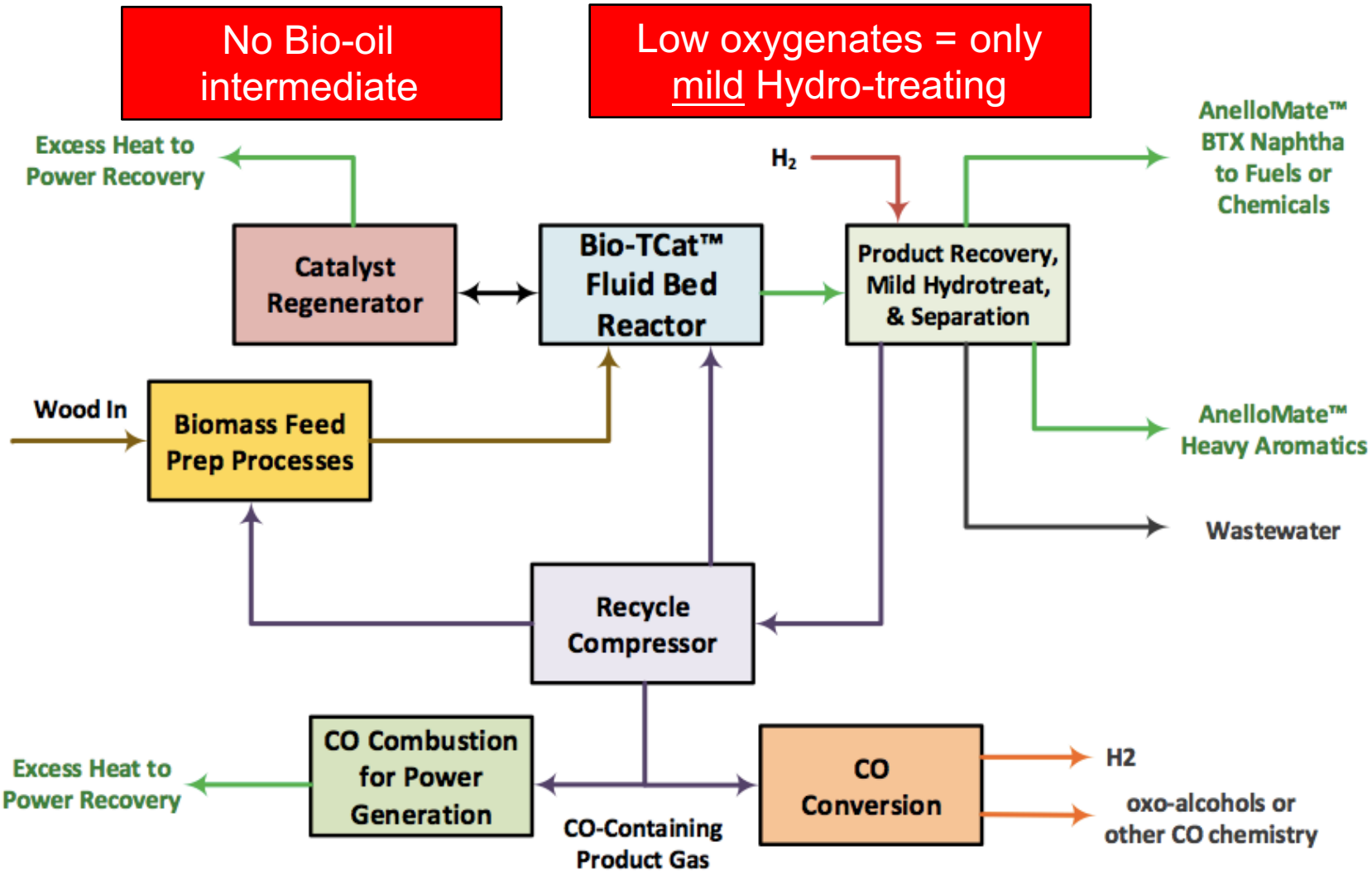
Single step reactor process produces BTX not bio-oil



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Cost Competitive with Petro-BTX

- Renewable, cheap & abundant non-food feedstocks, eg., wood, corn stover and bagasse. Not sugar.

	Pricing Source	$/lb	$/tonne	% C+H	$/tonne C+H
Biomass	DOE / Ecostrat		60	54	111
Sugar	Bloomberg	0.18	400	47	851
Cellulosic Sugar	Marketing Presentations	0.12	270	47	574

- Efficient one-reactor catalytic process
  - Process goes directly from biomass to BTX in one step
  - Eliminates highly oxygenated bio-oil intermediate found with multi-step pyrolysis
  - Avoids associated need for substantial amounts of costly hydrogen

Cost + Bio ⇨ Large addressable market of $100B+ across multiple vertical end markets

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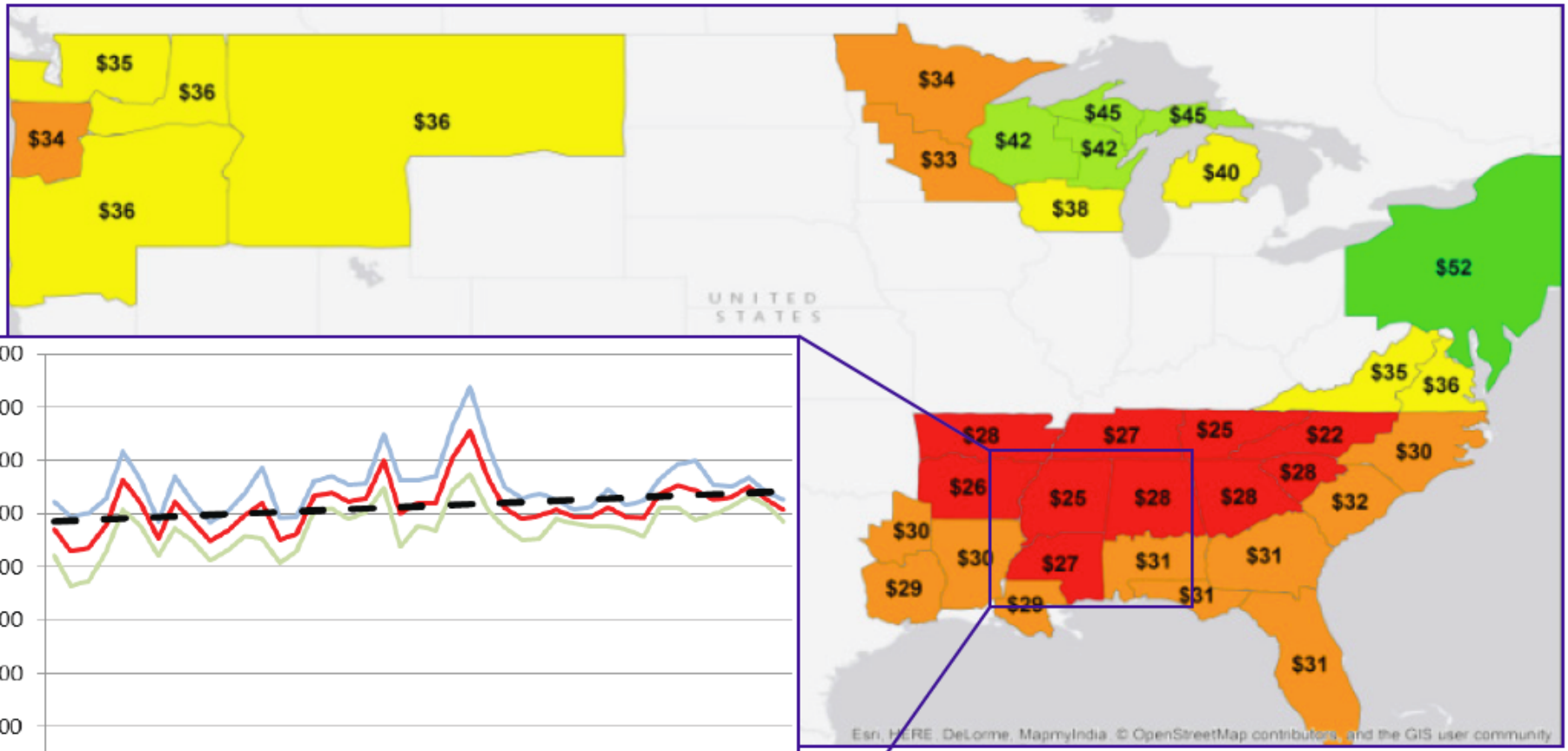
Softwood Pulpwood Price Trends in the US as of 2015



Data provided by Ecostrat Inc.

Information provided is high-level, averaged over regions. All prices are provided in USD per short ton delivered (~50 miles on average).

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Meet the Anellotech Alliance

Technology, Catalyst, Engineering, Marketing

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- ✓ Program Management
- ✓ Research & Development
- ✓ Pilot Plants

IFP Energies nouvelles

- ✓ Process Development
- ✓ Modeling & Hydrodynamics
- ✓ Scale-Up

JM Johnson Matthey INTERCAT

- ✓ Catalyst Technologies
- ✓ Formulations
- ✓ Catalyst Supply

Axens IFP Group Technologies

- ✓ Process & Plant Design
- ✓ Technology Licensing & Marketing
- ✓ Start-Up & Operations Support

Suntory

Global consumer beverage company with market-leading brands

- **$20B in annual revenues; 37,000 employees**
- **Promotes various initiatives to reduce environmental impact throughout entire value chain**
- **Features 30% plant-derived PET packaging in Japan**
- **Pursuing the development of a 100% bio-bottle through Anellotech partnership**
- **Already provided over $15 million funding to Anellotech program since 2012**

Suntory Tennensui
Mineral Water
in 30% Bio-PET Bottle

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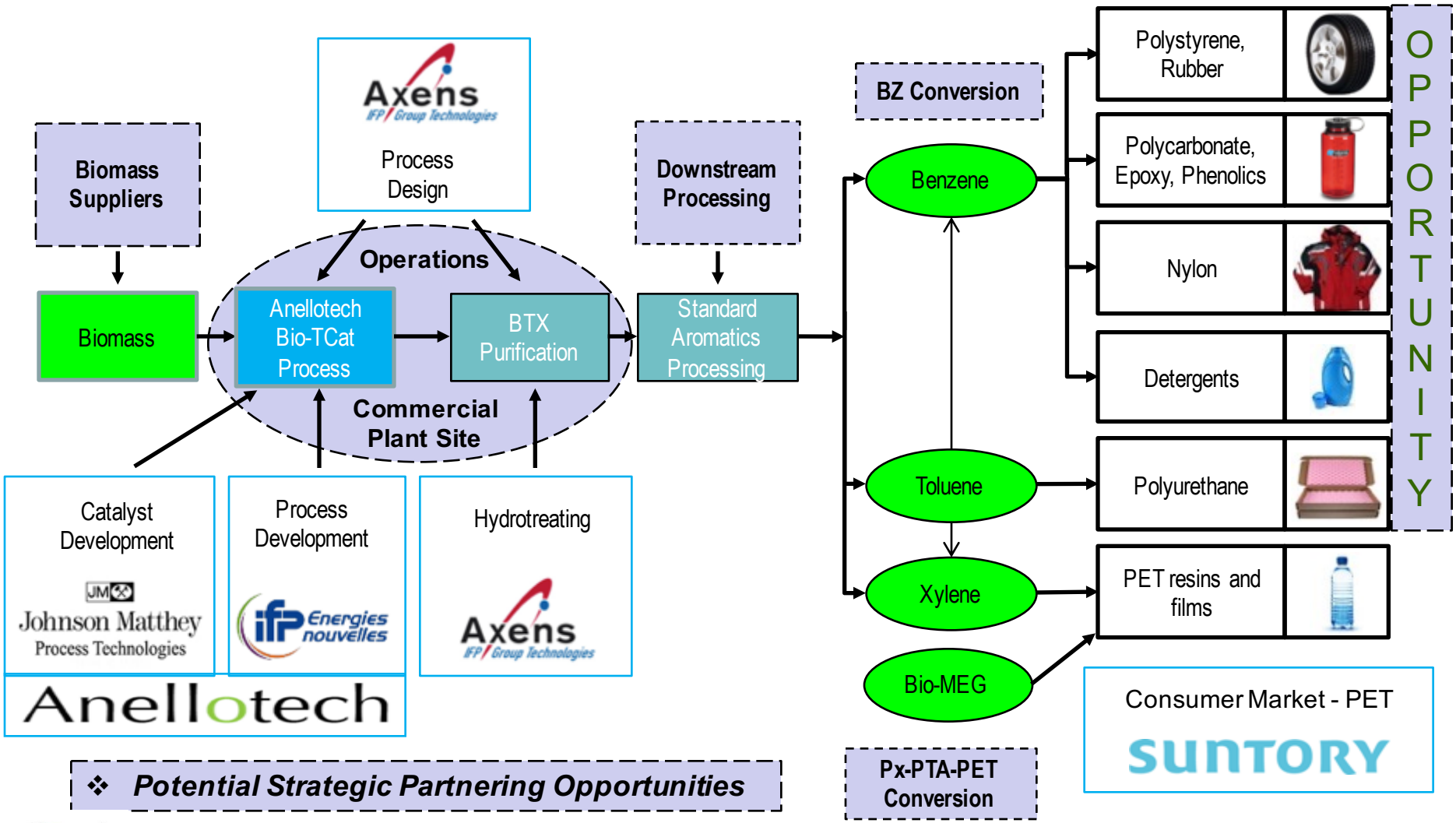
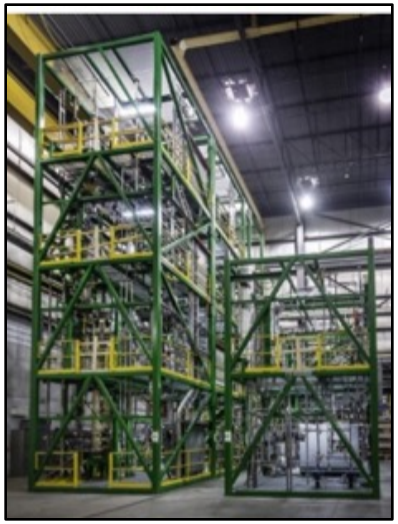
Partnering Opportunities



❖ ***Potential Strategic Partnering Opportunities***

Commercial Development Plan

- Completed construction of TCat-8™ fully-integrated 25 meter-tall development and testing facility
  - Jointly designed by Anellotech and IFPEN over 18 months
  - R&D catalyst under joint development by Anellotech and Johnson Matthey since Sept 2014
  - Installation and operations in 2016 at South Hampton Resources' facility in Silsbee, Texas

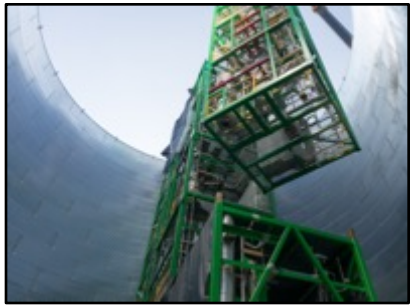


- TCat-8™ studies to confirm the viability and suitability of the Bio-TCat process for scale-up

- Generate the data needed to design commercial plants
- After verification of the continuous operation of TCat-8, Suntory plans to move ahead with studies to consider the development of the first commercial-scale Bio-Tcat™ plant

South Hampton Resources

- ***Proven track record of efficiently and safely constructing, hosting and operating chemical projects***
  - Operating contractor/site host for TCat-8 at Trecora subsidiary SHR in Silsbee, TX
  - Leveraging deep experience and expert staff of chemical plant operators, maintenance craftsmen, plant supervisors, ESH and analytical personnel



May 2016

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IFPEN Expands Involvement

Dec. 2015: Additional Resources in USA & France

IFPEN and Zeton representatives with Anellotech's TCat-8 development and testing unit for converting biomass to BTX. Photo courtesy of Zeton Inc.

Three full-time senior IFPEN engineers and technical experts at Anellotech site for 2 years beginning in 2016

Extensive activities at IFPEN's Lyon, R&D center

- Catalytic reactor modeling
- Catalyst regenerator design
- Analytical
- Aromatics processing

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100% Strategic Partner Funded

All Motivated for Commercial Success

- Development partners' involvement highly motivated:
  - Future licensing and engineering services revenues
  - Catalyst sales to licensees

- Our operating company partners are motivated by first availability of cost competitive bio-aromatics.

- Additional funding/strategic partners sought to support development and participate in the future success of the Bio-TCat technology.
  - Aromatics derivative producers and consumers (i.e. brand owners)
  - Refiners
  - Biomass feedstock and equipment suppliers

Highly interactive, results-driven collaborations, focused on commercial process economic success.

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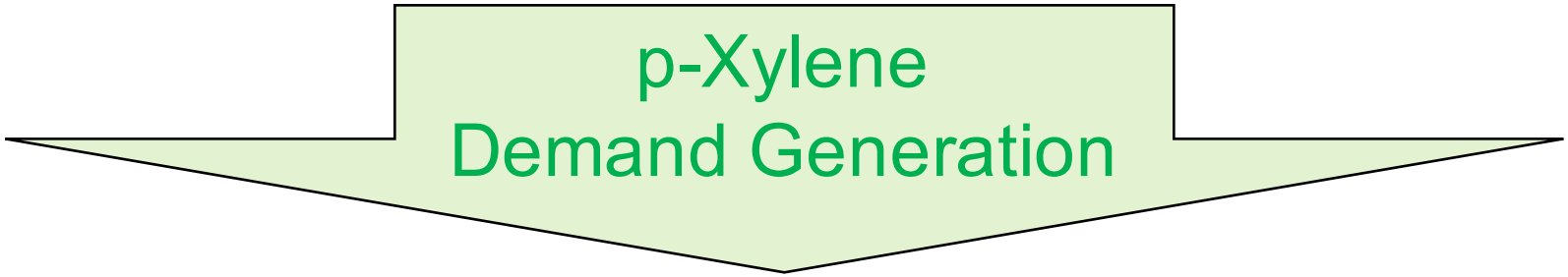
Aggressive new partners sought to leverage an established platform

- Suntory is pioneering Bio-pX for 100% renewably produced PET



- Additional plants needed to serve PET followers
- Cost-competitive aromatics stream enables:
  - First mover advantage in industrial chemicals & polymers
  - Fuels play

Finally - a Renewable source of Benzene

Product	Benzene, % w/w	Major Markets
Polystyrene (EPS, PS)	74	Packaging
Nylon 6	70	Outerwear, engineering resin
Polycarbonate	62	Auto, construction
Epoxies	35- 55	Adhesives, electrical, paints and coatings,
Nylon 6,6	34	Outerwear, engineering resin
Acrylonitrile butadiene styrene (ABS)	30-45	Auto, appliance, construction
Linear alkyl benzene (LAB)	28-36	Industrial and institutional detergent
Polyurethane	25-53	Auto, appliance, household, construction
Styrene butadiene rubber (SBR)	17-30	Tires, manufactured rubber goods

Large, receptive markets for drop-in, cost competitive, renewably produced benzene

Note: Large variations in benzene content of epoxies (formulation, hardeners, fillers), ABS (formulation), linear alkyl benzene (chain length of paraffin), polyurethane (formulation), and styrene butadiene rubber (formulation to service requirements).

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Fuels via the Bio-TCat™ Process

Renewable Gasoline Blendstock

- Renewable cellulosic biofuel we call ‘AnelloMate’
- Cost competitive with petro-based fuels & blendstocks
- Fungible with pipelines, refinery blending systems, fuel distribution and service station infrastructures
- Many product-related advantages over ethanol
  - No oxygenates
  - Less sulfur
  - Higher energy density
  - Greater RIN value in USA

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Anellotech Summary

- Thermal catalytic biomass conversion (**Bio-TCat**™) of non-food cellulosics for
  - Petro-cost competitive aromatics benzene, toluene, xylenes ("BTX")
  - Fuels: High octane, low RVP, fungible, renewable fuel to meet renewable mandates
- 100% strategic partner funded, licensing business model
- In-depth, long term, highly collaborative joint R&D partners
  - **Johnson Matthey** Joint Catalyst Development & Manufacturing
  - **IFPEN** Joint Process Development & Scale Up
  - **Axens** Process Licensing, Engineering/tech Support
- Funding by multinationals seeking early access to cost competitive bio-aromatics, including…
  - **Suntory (announced Jan 2016, >$15MM)**
  - **Confidential Strategic ($10 million funding Aug 2015, Feb-Mar 2016)**
- Fully integrated development and testing unit start-up in 2016
- Commercial plant by end of this decade
- Anellotech seeks synergistic partnering opportunities
  - **Bio-benzene and other BTX derivative suppliers and their brand owner customers that want a first mover advantage**
  - **Refiners looking for alternative renewable fuel blendstocks**

IFP Energies nouvelles

Johnson Matthey Process Technologies

Axens IFP Group Technologies

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