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## **BIOFUELS NEED DOWNSTREAM STRATEGIES NOW**

Focus needs to shift from feedstock technologies to value chains and vehicles, or the sector risks early obsolescence, warns Lux Research

Boston, MA – May 12, 2009 – After 30 years of progress, the biofuels industry has plunged over a cliff amidst rancorous debate over its near-negligible carbon mitigation, competition for arable land, and poor economics. Opportunities remain for the industry, but in order to rise again, biofuel developers and investors will need to change their technology-push approach, warns a new report from Lux Research. Rather than just investing in technology to boost feedstock productivity, for example, the sector needs to expand niche markets and make end-use easier.

The report, entitled “Biofuels After the Fall” provides a reality check for biofuel advocates operating under the false assumption that demand will exceed supply as soon as costs are competitive with fossil fuels. Its strategic insights also provide specific recommendations for development of and investment in future biofuels technologies, from algae biofuels to advanced catalysis for processing.

“Most of the investment to date has been on reducing the cost of ethanol, and making it less reliant on food crops. The problem is that there aren’t nearly enough filling stations and cars – nor will there be for decades – that are capable of using the fuel,” said Mark Büniger, a Research Director for Lux Research and the report’s lead author. “Without changes downstream in the current distribution infrastructure and end-use, ethanol’s growth will soon cease– even if it’s given away for free.”

“Biofuels After the Fall” applies Lux Research’s rigorous analytical approach to market research, deriving its insights and intelligence from primary interviews with over thirty-five leading biofuel developers and investors, as well as secondary research on the sector. Among its conclusions:

- **Biofuels need to shift focus to process flows and end-use technologies.** Despite advances in cellulosic biological feedstocks, ethanol development still lacks a clear pathway from cultivation and harvesting of feedstocks, to biochemical processing, to distribution and end use. Those who want these biofuels to thrive must spur investment in vertical integration, and ethanol-compatible distribution infrastructure and vehicles.
- **Biofuel co-products offer a near-term economic bridge.** Whether derived from feedstocks, cellulosic waste or algae, the manufacturing of biofuels also generates commercially viable co-products, ranging from livestock feed to chemicals to fertilizer and medicine. Prudent companies will prioritize these higher-value products, until their biofuel technology is competitive.
- **The urgent need for carbon sequestration provides an important edge.** Carbon-credits and regulation could provide a revenue stream for algae-based and other biofuels that offer the ability to sequester carbon, long before they resolve the mechanics of fuel production.

“Even assuming every car on the road uses the maximum allowable ethanol blend for every trip it makes, bioethanol demand still won’t top 30 billion gallons annually before 2024, which bodes ill for an industry on track to produce over 10 billion gallons this year and growing at 35%,” said Büniger. “However, if biofuel partisans shift their focus to downstream fuel and adjacent co-product demand, they may still manage to find a profitable and sustainable future.”

“Biofuels After the Fall” is part of Lux Research’s Biosciences Intelligence service. Clients subscribing to this service receive continuous research on the biosciences industry, market trends and forecasts, ongoing technology scouting reports and proprietary data points in the weekly Lux Research Biosciences Journal and on-demand inquiry with Lux Research analysts.

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