Advanced biofuels: Opportunities and challenges

Advanced biofuels are made from non-edible feedstocks including lignocellulosic biomass or woody crops, agricultural residues or wastes. Attempts to commercially produce these new fuels have lagged well behind expectations. There are few success stories to date despite significant investment. Low oil prices and highly publicized failures caused the industry to appear to be inactive. Commercialization efforts are continuing, and there are major projects under development. The next wave of implementation will benefit from the missteps of the prior attempts. There are major projects in progress in North America, South America, Asia, and Europe. These projects are a target at opportunities to valorize underused resources and convert wastes to fuels. There is a continued effort to supplement the income from fuel production by producing high value-added products. To be successful, an advanced biofuel production process must overcome some challenges. Lowering the cost of production is critical. There are concerns about the infrastructure, the economy of scales, complete utilization of the biomass, process integration and lowering the complexity of the process. Improving impression of advanced biofuels is critical. Government support has been shaken by the slow progress and pressure from both environmental groups concerned with land use and sustainability and those supporting the growth of first generation fuels. Other renewable technologies have claimed the attention of the public.

Biography

Lorenz Bauer earned his PhD from Washington University. He is an independent consultant associated with Lee Enterprises Consulting. He has worked over 30 years at Honeywell/UOP and start-ups developing new technologies in the chemical, environmental and energy fields. He is an inventor of over 26 patents and has published more than 15 papers in peer-reviewed journals. Currently, he is evaluating new technologies, his clients include the USDOE, the Southern Research Institute and several University Technology Transfer Departments.

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