

Co-locating a Cellulosic Biomass to Ethanol Plant with Existing Coal Fired Power Plants

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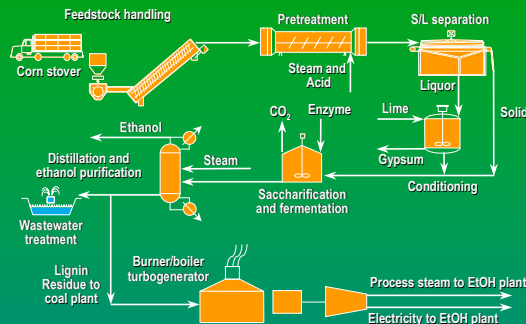
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AES Greenidge coal-fired generating station; Dresden, NY

Biomass to Ethanol Process Diagram



Sites Investigated for Co-location

- Easterly Consulting investigated AES Greenidge Generating station, located in Dresden, NY
- BBI investigated an existing location and a greenfield site
 - R.M. Schahfer Generating Station, located in Wheatfield, IN
 - Grand Island, NE (site proposed by NE Public Power)

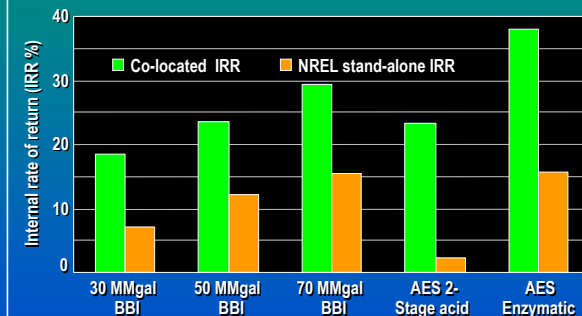
Benefits of Co-location for Bioethanol Plant

- Significant capital cost savings by utilizing existing boiler/turbogenerator
- Other cost savings via labor, warehousing, site development and wastewater treatment facilities

Benefits of Co-location for Coal Fired Power Plant

- Ability to sell excess steam and electricity to ethanol plant, allowing the coal plant to operate at full capacity
- Replacing a portion of coal with lignin, a clean burning fuel
- Reduce SOx, NOx, particulate, and green house gas emissions

Economic Advantages of Co-locating



Factors Influencing Economics

- Major impact
 - Plant size
 - Ethanol market price
 - Delivered feedstock costs
 - State producers credit
 - Owner equity
 - Capital and operating costs
- Minor impact
 - Steam costs
 - Electricity costs
 - Labor costs
 - Lignin selling price
 - Feedstock inventory
 - Permitting costs



Office of Energy Efficiency and Renewable Energy

