“Feasibility of Lignite-Powered Ethanol Plants in North Dakota”

**Principal Investigator:** Mark Yancey  
**Contractor:** BBI International Consulting

### PARTICIPANTS

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Cost Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDIC</td>
<td>$ 50,000</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$ 50,000</td>
</tr>
</tbody>
</table>

**Project Schedule - 36 Months**
- Contract Date – 2/2/04
- Start Date – 2/3/04
- Completion Date – 3/19/04

**Project Deliverables**
- Contract Signed: 2/3/04 (√)
- Verbal Status Report: 2/16/04 (√)
- Draft Report: 3/8/04 (√)
- Final Report: 3/19/04 (√)

### OBJECTIVE / STATEMENT OF WORK:

The objective of this study is to evaluate the feasibility of increasing ethanol production using new technology (FBC, Gasification CoGen) to provide lignite energy to an ethanol production plant: Tasks include: 1) Determine ethanol and lignite expansion potential (near-term < 5 years; long-term > 5 years); 2) Evaluate the economics of lignite as a fuel source for ethanol plants; and 3) Characterize the potential total utilization of lignite using a fluid bed combustor (FBC) or a gasification-based co-generation (CoGen) process for on-site integrated lignite-based energy producing power and steam.

**STATUS:** The final report concluded that a natural gas fired-ethanol production plant would be profitable at natural gas prices above $6 mcf. Capital investment cost for lignite-fired ethanol production plants are higher than a natural gas-fired plant.