

LRC-II-12
DEVELOPMENT OF EUROPEAN MARKETS
AND SOURCES FOR LIGNITE TECHNOLOGY
Phase II

CONTRACTOR: University of North Dakota School of Engineering and
Mines Foundation

PRINCIPAL INVESTIGATOR: Don Mathsen
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PARTICIPANTS

<u>Sponsor</u>	<u>Cost Share</u>
University of North Dakota	\$15,556
Grand Forks Region Economic Development Corporation	3,889
Northern States Power	7,778
ND Industrial Commission	<u>17,500</u>
Total	\$44,723

Project Schedule – 1 Year

Contract Date – 4/13/89
Start Date – 3/15/89
Completion Date – 9/14/89

Project Deliverables

Progress Report ✓
Final Report – 9/14/89 ✓

OBJECTIVE / STATEMENT OF WORK

This was Phase II of a two-phase program. The overall objective was to establish successful business ventures and additional research programs, either new or expanded, resulting from cooperative European-North Dakota technology transfer supporting the utilization of lignite and associated wastes and byproducts. Principal objectives were:

- identify potential European markets for North Dakota lignite technology,
- identify European technology for use with North Dakota lignite,
- facilitate meeting between North Dakota and European groups,
- assist in contract negotiation between North Dakota and European groups.

During Phase I it was learned that char produced from Germany lignite was being used to remove impurities from gaseous effluents. Phase II was a study to determine whether chars produced from North Dakota lignites would be as effective in sulfur dioxide removal as the chars produced from Germany lignite.

STATUS

Two North Dakota lignite chars and one Germany lignite char were tested for effectiveness of sulfur dioxide removal from a gas stream. One of the North Dakota lignites was equal, or better, than the Germany lignite char for removal (absorption) of sulfur dioxide. North Dakota lignite chars were formed at 750°C from samples taken from the Indian Head Mine (Zap Seam) and the Coteau Pit #32. The Indian Head char was effective in sulfur dioxide removal, whereas the Coteau char was not as effective. The Coteau char had a greater tendency to reabsorb moisture. The Germany lignite char and the Indian Head char had higher calcium and magnesium contents. This project led to a subsequent lignite char filtration development program, which was funded (\$370,000) by other parties.