

LMFS-07-39 B
“Beneficiated Lignite Market Study”
Lignite Vision 21 Program Phase V

CONTRACTOR: University of North Dakota Energy & Environmental Research Center

PROJECT ADMINISTRATOR: John W. Dwyer, President & CEO, Lignite Energy Council
701-258-7117
JohnDwyer@lignite.com

PROJECT MANAGER: Michael L. Jones, Vice President of Research & Development
Lignite Energy Council
701-258-7117
MikeJones@lignite.com

CONTRACT AMOUNT: \$150,000

Project Schedule – 9 Months

Contract Date – 07/31/2009

Start Date – 07/1/2009

Completion Date – 04/30/2010

Project Deliverables

Status Report – 9/30/2009 (x)

Status Report – 12/31/2009 (x)

Draft Final Report – 6/30/2010 (x)

Final Report – 9/30/2010 (x)

OBJECTIVE / STATEMENT OF WORK

The objective of this study is an analysis of the status and potential for lignite beneficiation and upgrading leading to new and expanded markets for lignite. The overall goal of this project is to specifically identify potential purchasers of beneficiated Fort Union lignite. The goal of this study is to deliver a market research report that includes industry and market overview, competitive analysis, identification of market opportunities and challenges, and recommended market strategies. Cost information estimates will be prepared assuming 2009 dollars.

STATUS

July 1, 2009 – September 30, 2009

On August 6, 2009, the Lignite Energy Council (LEC) project manager met in Grand Forks to discuss the scope of work, approach and plans for the project. During the quarter, the Energy & Environmental Research Center (EERC) negotiated a subcontract with WorleyParsons. On September 17, 2009, Task 5, the transportation analysis and Task 6 market analysis sections were discussed with the technology team including WorleyParsons. The EERC team initiated a literature review for Tasks 1, 2, and 3. The team met to discuss and plan the interview survey Task 4.

October 1, 2009- December 31, 2009

The contractor continues to work on the various tasks in the Beneficiated Lignite Market Study. Agreement was reached as to the content of the survey to be used as well as the targeted groups to complete this phase of the activity. The Worley Parsons transportation study is roughly 50 % completed. The assumptions used were reviewed and accepted by the North Dakota Industrial Commission’s technical representative. The technical review of potential beneficiation technologies is approximately 50 % complete.

Draft Final Report

The contractor made an oral presentation to the Lignite Energy Council's Lignite Technology Development Workgroup of the findings of the draft final report. In addition, each chapter has been reviewed and changes requested with the final technical report due in October, 2009. The date has been extended due to delays in the initial phase of the activity as the contractor negotiated with the U.S. Department of Energy to allow them to become a cost-sharing partner in this study.

Final Report Summary

The goal of this project was to analyze the market for beneficiated North Dakota lignite (BNDL) and identify potential end users for market growth. The analysis was conducted by the Energy & Environmental Research Center and Worley Parsons, resulting in industry and regulatory overviews, a technology review, a transportation analysis, and a market survey and analysis. The results provide vital information about the application of commercial beneficiation processes to North Dakota lignite and the potential market and uses for those products.

A market survey was conducted to identify potential users of BNDL within the United States and within a 1000-mile radius of western North Dakota coal deposits. Research focused primarily on potential users in closest proximity to potential raw lignite and BNDL sources.

Market opportunities for BNDL include new integrated gasification combined-cycle (IGCC) facilities, higher rank coal-fired facilities, and niche markets. BNDL is a very suitable fuel for an IGCC plant. Small industrial and institutional users in the region are able to switch fuels more easily and rapidly than large utilities, presenting a niche market for BNDL. An additional opportunity for BNDL in a carbon-constrained marketplace is biomass cofiring and blending, which could provide a CO₂ reduction. There is strong interest in North Dakota, South Dakota, and Minnesota to buy "local" North Dakota lignite.