The Mesaba Energy Project

Energy, Innovation and Economic Development for Minnesota

By
Excelsior Energy, INC.

Project Goals

- Adding Needed Energy Infrastructure in the State of Minnesota
- Job Creation and Economic Stimulus to NE Minnesota
- Making a Major Contribution to Environmental Protection

Project Team

- Excelsior Energy, Inc.
  - Principal- Tom Micheletti
  - Principal- Julie Jorgenson
  - VP Development-William Ruzynski
- Strategic Finance Resources, Inc.
  - Principal- Renee Sass
- Sherner Power Consulting LLC
  - Principal- Steve Sherner
- Browers Consulting LLC
  - Principal- Bruce Browers

Advisory Team

Plant Engineering:	Bechtel Corporation
Site Engineering and Assessment:	HDR Engineering and SEH Consulting
Transmission Planning and Engineering:	Acres Management Consulting
Economic Forecasting/Project Feasibility:	ICF Consulting Inc
Legal Counsel	Latham & Watkins
Legal Counsel and Government Relations (Federal and Minnesota)	Lockridge Grindal Nauen
Government Relations (Minnesota):	Cook Hill Girard
Project Support:	Iron Range Resources

Description

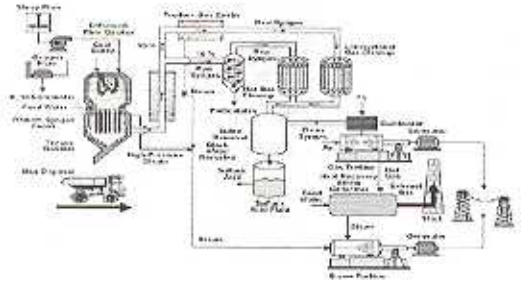
- Integrated gasification combined cycle (IGCC)
  - -Initial phase 550-850MW In-service Spring 2010
- Site on Iron Range in NE Minnesota
  - -Capable of hosting 2000 MW
- Major new 345 KV, 500 KV, or HVDC development will be necessary to deliver output to growing regional markets

Why IGCC Technology

IGCC is a clean, competitive and stable cost option

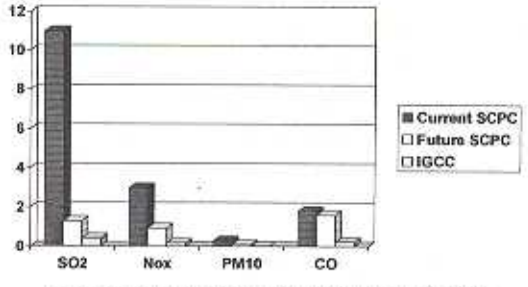
- Provides long-term fuel hedge
- Minimizes use of natural gas for power generation, reducing pressure on natural gas supply and prices
- Environmental profile is substantially better that conventional coal plants, minimizing opposition from environmental groups and risk of retrofit requirements as emission limits tighten
- Cost-effective mercury removal capability is critical under tightening Federal emission limits and measures under current consideration by many states
- Higher efficiency than conventional coal plants
- Competitive capital costs compared to a supercritical coal plant
- Positioned to be BACT for coal fired generation
- Furthers the goals of the National Energy Policy, including Hydrogen Vision and FutureGen initiatives
- Uses abundant, domestic coal resources, reducing reliance on imported fuels
- Enjoys strong bi-partisan support from Minnesota policy-makers

IGCC Process



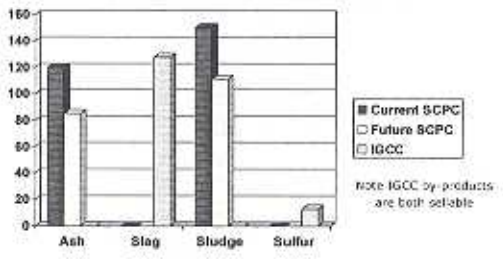
Emissions

(lbs / Mwh)



** Cost of mercury removal for IGCC is estimated at 10-15% of conventional coal plant and can achieve 90-95% removal

Solids
(lbs / Mwh)



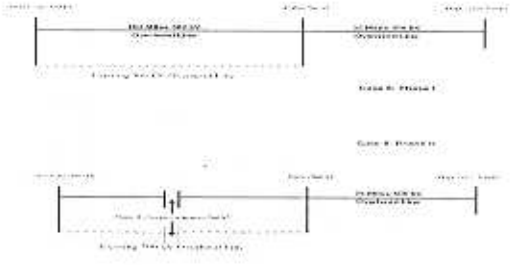
Transmission Concepts Screening Study

- Performed by Acres Management Consulting
  - Technical Support from Sherner Power Consulting
- Technical & Economic Screening
  - No system studies performed
- Completed in first half of 2003

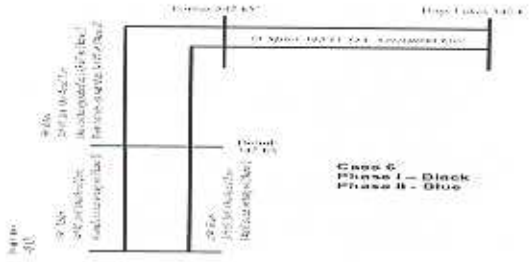
Key Study Parameters

- Delivery of 750 MW in Phase I and an additional 750 MW in Phase II
- Technologies evaluated
  - HVAC, HVDC, and HVDC Lite
- Markets
  - Twin Cities 750-1500 MW
  - Eastern Wisconsin 750-1500 MW
  - NW Ontario 250-500 MW
  - NW Wisconsin 200-300 MW
- Concepts evaluated with and without Duluth –Wausau Project

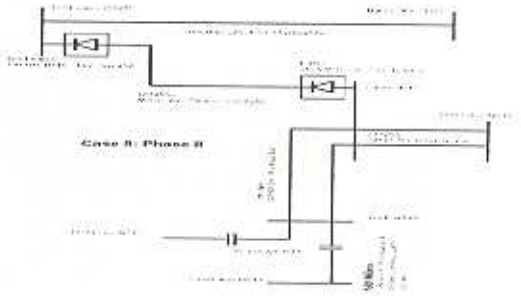
500 KV Concept



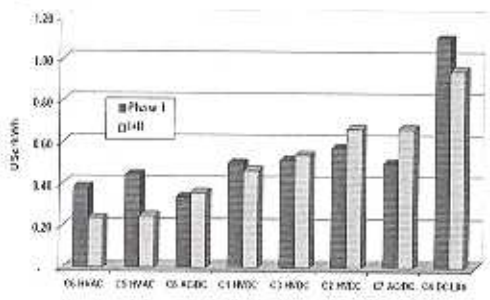
345 KV Concept



Combined 345 KV / DC Lite Concept



Concept Comparison



Transmission Schedule

Current Status

- What we know
  - Major new transmission development will be necessary to deliver plant output
  - Strong political support for transmission line from Northeastern Minnesota to Twin Cities market due to economic development benefits of in-state power generation facilities
    - Both the generation and any related transmission are exempt from the certificate of need requirement
    - Excelsior Energy was given eminent domain rights
  - Planning and development falls under the MISO processes for Large Generator Interconnection and Transmission Service

Current Status

- What we believe
  - Multiple, feasible transmission concepts are possible
  - These concepts should be able to integrate effectively with the existing regional development plans reviewed
  - Proposed transmission development should help improve regional reliability and system performance
    - Single largest contingency in MAPP region should be mitigated
    - Operating reserves can be reduced
  - Extensive use of existing ROWs should help minimize environmental impacts and public opposition

Current Status

- What we don't know
  - Local transmission improvements necessary to deliver to the ultimate loads
  - How we work with MISO, MAPP and local utilities
  - Who pays and how much for transmission service

Questions and Feedback