

Indiana Center for Coal Technology Research, CCTR

Round 2 Research Topics, 2005

Bloomington
June 10, 2005

CCTR GOALS ~1

- (a) Justify the importance of the research topic area to the use of Indiana coal
- (b) Identify previous studies related to the research topic area, and evaluate them as to their relevance to the topic
- (c) Using this evaluation as a starting point, identify policy, scientific and technical barriers related to the project that impede Indiana coal use

CCTR GOALS ~ 2

- (d) Summarize the principal areas of expert agreement and disagreement regarding the issues, providing answers to key questions where a consensus is found to exist
- (e) For those areas, where enough is known to proceed with implementation, suggest a public and private action plan for the State, with milestones, deliverables, estimates of resources needed, and potential sources of external funds

CCTR GOALS ~ 3

- (f) For those areas where not enough is known to proceed, suggest a research plan for the CCTR with a set of milestones, deliverables, resources needed and possible sources of matching funds
- (g) Build in-state capability to carry out further research in the chosen areas

ELIGIBILITY ~ 1

All organizations are eligible to submit proposals. However, preference will be given to Indiana researchers and/or those who have strong partnerships with Indiana researchers and Indiana coal related stakeholders.

Each proposal must present a plan involving significant collaboration with potential users of the results from the project. Letters of commitment from potential collaborators, including pledges of in kind and other support are required.

ELIGIBILITY ~ 2

Depending on the research topic area addressed, potential users of the research could be utilities, companies, local or state governments, federal agencies, public interest groups, or other organizations with interests in the project results.

No one is allowed to be a principal investigator (PI) for more than one proposal. However, he/she may be a participant in other proposals.

TIME OF AWARD

2005 Round Two

All proposers will be notified of the CCTR Advisory Panel's decisions in September 2005. The projects can start once the funding is in place and awards are made.

A contractual agreement will be signed between the CCTR and each successful submitter.

11 Research topics are listed for Round Two

(1) Coal Transportation Infrastructure in and Around Indiana

- What are the major policy/technology barriers to reducing our coal transport costs, which are now 3 to 5 times higher per mile than PRB coals?
- Should the CCTR conduct a current and future coal transport needs assessment, building on the findings of the coal portion of the 2002 Indiana Rail Plan? (Illinois' Office of Coal Development just finished such an upgrade needs assessment)

(1) Coal Transportation Infrastructure in and Around Indiana (continued)

- What is the proper role of the CCTR and the State in improving the privately owned and maintained coal transportation system in Indiana?
- Are there new coal transportation technologies, which, if encouraged by the CCTR can help all participants in the coal supply chain?

(2) The Impact of New and Proposed Environmental Legislation on the Competitiveness of Indiana Coals

- How will CAIR and CAMR affect Indiana power stations in the short-term, and the longer-term?
- What, if any, characteristics of Indiana coal could lead to increases or decreases in Indiana coal use as a result of the new regulatory limits?
- Evaluation of emissions from more efficient clean coal use technologies
- What should an R&D orientated CCTR program do to mitigate the impact of new environmental laws on Indiana coal use? (SB 29)

(3) Expanding Indiana's Coal Supplies and the Permitting System

- Are there actions which can remove or reduce delays without compromising IDEM and DNR objectives?
- What can we learn from looking at the permitting process in other states?
- What is the impact, if any, of new mining and reclamation technologies on the permitting system?

(4) Vocational Training Needs for Coal Development, and Clean Coal Technology Operations

- Needing 2000 more miners if we are to recapture our markets lost to PRB
- Each 500MW IGCC plant will need 100 personnel trained in operating what essentially is a chemical plant
- Should CCTR carry out an assessment of the current skills supply in Indiana, with recommendations for avoiding forecast shortages?
- Should this study be regional, to include IL/KY/OH, with their support?
- How can we take advantage of the fact that Indiana has one of two operating IGCC plants in the country?

(5) Key Issues That Encourage or Inhibit the Increased Use of Indiana Coal at Existing Facilities

- Coal imports to the State have increased dramatically
- Identify key issues that control the use of Indiana coals on a plant by plant basis
- Are current power plants locked into current coal sources?
- Will new environmental laws help/hinder switching to local coals?
- What technology issues should CCTR address to help recapture these lost markets?

(6) Coal Combustion Products (CCP) Technology, Use, and Incentives

- What CCP volumes are projected?
- Are there innovative ways of using CCPs which, if adopted, would make Indiana coals more competitive?
- How will the characteristics of CCP change with the introduction of clean coal technologies?
- What new processing technologies are there which CCTR should investigate?
- What are the environmental impacts of CCP use or disposal?

(7) Measuring the Environmental Cost of Coal Use, including Health Issues, Ash Disposal, and Long-Term Effects of Coal Combustion By-Products

- Strategic identification of economic and environmental costs
- Impact of more efficient coal use technologies
- Health related concerns
- Airborne emissions, water, contamination
- Combustion product disposal

(8) Determining the Costs of Retrofitting Existing Indiana Coal-Fired Power Plants for Compliance with Future Environmental Regulation

- What are the least cost compliance options for existing power plants for the various environmental regulation scenarios?
- What are the implications for Indiana coal use arising from this analysis?
- What R&D projects could CCTR undertake which if successful, could benefit Indiana coals?

(9) Establishing a Reliable and Comprehensive, Web-based, Statewide Database of Indiana Coal Characteristics in Collaboration with Indiana's Coal Mining Companies and Utilities

- Facilitate efficient strategic comparisons between Indiana and other coals necessary for utilization
- Creating a systematic tabulation of the multiple physical and chemical attributes that distinguish Indiana coals from other coals
- Systematizing all of Indiana coal characteristic data into the new easily accessible user-friendly website

(10) Expanding the Capacity and Improving Efficiency of Indiana Coal Mining and Production

- Production rate is now close to design capacity
- What productivity enhancing mining technologies should the CCTR investigate for:
 - (a) Surface mining
 - (b) Underground mining
- How can the CCTR take advantage of the Illinois Coal Development Office programs in this area?

(11) Vision, Marketing Strategy and Public Education Programs for Promoting the Use of Indiana Coals across the State and Out-of-State

- Needs for a unified vision of coal program?
- What types of programs should be implemented?
- What are other states doing to promote the use of their coals?
- Host an annual Coal Technology Research Conference?

(12) Other topic(s)?