U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

National Geothermal Student Competition

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Principal Investigator: Charlie Visser

Presenter: Tom Williams
National Renewable Energy Laboratory

Analysis, Data System and Education

Geothermal Student Competition

- Principal Investigator: Charlie Visser
- Presenter: Tom Williams
- Organization: National Renewable Energy Laboratory
- Track: Analysis, Data System and Education

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Overview

The National Geothermal Student Competition will be an intercollegiate competition where student teams compete to advance the understanding of the potential for geothermal energy to supply a major component of the nation's energy needs in the coming decades

Start - ***October 2009***
End date - ***December 2010***
May 2010 - ***30% complete***
Budget - ***$327,000***

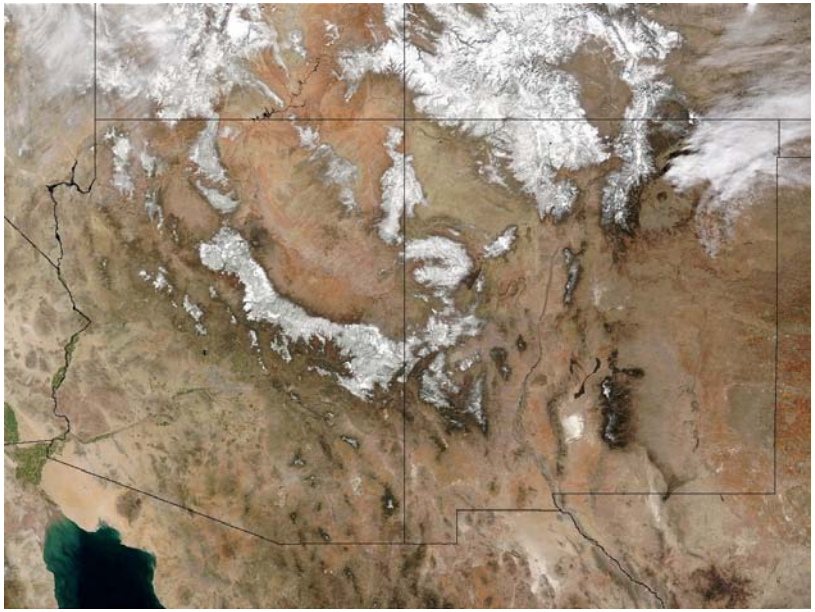
Overview (continued)

- Competition enables a broad range of participant schools
  - Encourages non-existent/non-comprehensive geothermal programs to play up areas of strength
  - Supports different techniques and approaches, stimulates innovation
  - Teams rewarded for individual research, minimal prep for common data package
  - Expands public attention on geothermal potential outside of California/Nevada

Relevance/Impact of Research

- Completion of technical report evaluating potential of Rio Grande Rift trend hydrothermal, enhanced geothermal systems, and low-temperature resource production
  - Identifies and prioritizes specific areas for development
- Expands university-level geothermal energy education, supports expansion of geothermal workforce
- Provides universities with challenging, learning-focused geothermal project and resources to facilitate incorporation of the competition into university curriculum

Relevance/Impact of Research (continued)



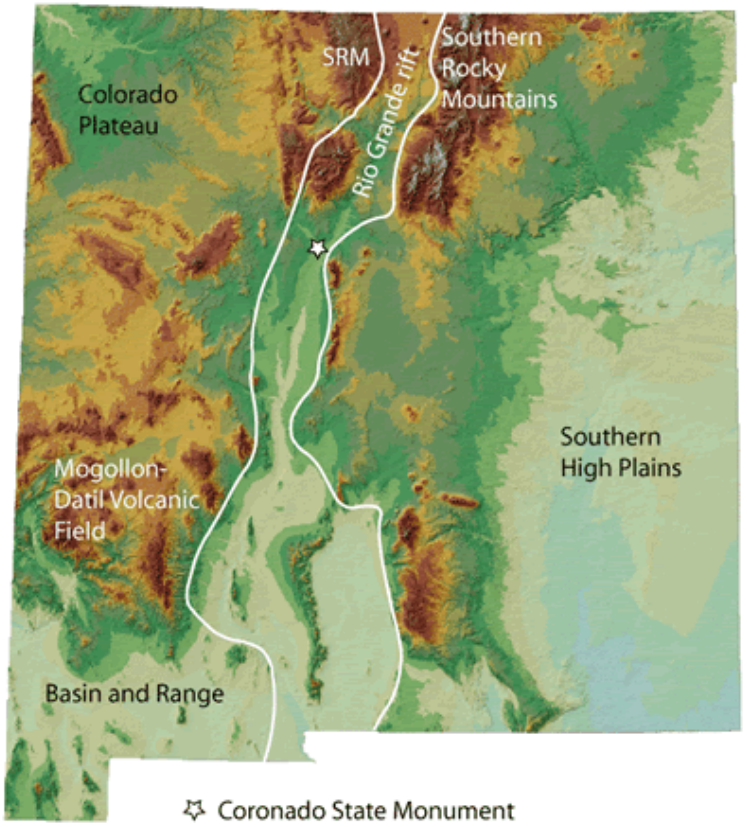
- Fosters cross-disciplinary, systems approach to geothermal energy development
- Elevates public profile of geothermal energy and potential to provide larger portion of U.S. energy needs
  - Highlights DOE investments in geothermal technologies
- Promotes geothermal exploration and development in undeveloped areas with high potential

Scientific/Technical Approach

- Inaugural competition:
  - Ask student teams to produce comprehensive assessment of geothermal energy potential in the **Rio Grande Rift** geologic province in southeastern Colorado and northeastern New Mexico
  - High potential area, relatively undeveloped “frontier” geothermal trend
- Review Meetings held throughout period of performance
  - Intro and orientation
  - Pre-competition workshop
  - Monthly conference calls
  - Final forum for team presentations

Scientific/Technical Approach (continued)

- Deliverables (each team required to submit, must meet NREL electronic reporting requirements)
  - Project plan
  - Rio Grande Rift Geothermal Development Assessment Report
  - Multi-media presentation



Accomplishments, Expected Outcomes and Progress

- Initial development and concept design accomplished, December 2009
- RFP development began in spring 2010, currently being reviewed and modified
  - Will allow schools to prepare proposals during Summer Term 2010
- Sponsor and school recruitment beginning
- Currently exploring venues for awards banquet to highlight winners and their accomplishments in December 2010

Project Management/Coordination

Task	Milestone	Status
Develop competition design	12/28/2009	Complete
Full draft of rules and framework	2/28/2010	Complete
Plan, write statement of work/RFP	3/22/-3/26/2010	Complete
C&BS preps RFP, issues	4/30/2010	In progress
Recruit sponsors	4/30/2010	In progress
Recruit schools	5/7/2010	In progress
School responses due	6/30/2010	
Merit review, awards announced, negotiations	7/31-8/20/2010	

Project Management/Coordination (continued)

Task	Milestone	Status
Workshop	8/30/2010	
Competition	8/31-???	
Final reports due	11/26/2010	
Final presentations	12/4/2010	
Scoring and selection	12/17/2010	

Synergies with other GTP programs

Analysis tasks (resource assessment, policy analysis, exploration success rate); funding support for competing schools from NREL analysis program

Low Temperature Geothermal, Unconventional Exploration resource assessment and exploration

Future Directions

- Inaugural year of competition will provide valuable guidance for subsequent years
- Growth in participation, recognition, complexity, and funding is expected in subsequent years

Summary

- University undergrads and grads conduct multi-disciplinary assessment of EGS and other geothermal potential in Rio Grande Rift
- College teams deliver a summary report and presentation on their findings
  - Helps DOE gain data for geothermal deployment in undeveloped area
  - Motivates students, faculty, schools to implement geothermal curriculum and showcase potential for geothermal jobs