

Externally Managed Consortia

By

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National Energy Technology Laboratory

The FLC Mid-Atlantic Regional Meeting

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NETL

- **Only DOE national lab dedicated to fossil energy**
 - Fossil fuels provide 85% of U.S. energy supply
- **One lab, four locations, one management structure**
- **1,100 Federal and support-contractor employees**
- **Research spans fundamental science to technology demonstrations**



Pennsylvania



West Virginia



Alaska



Oklahoma



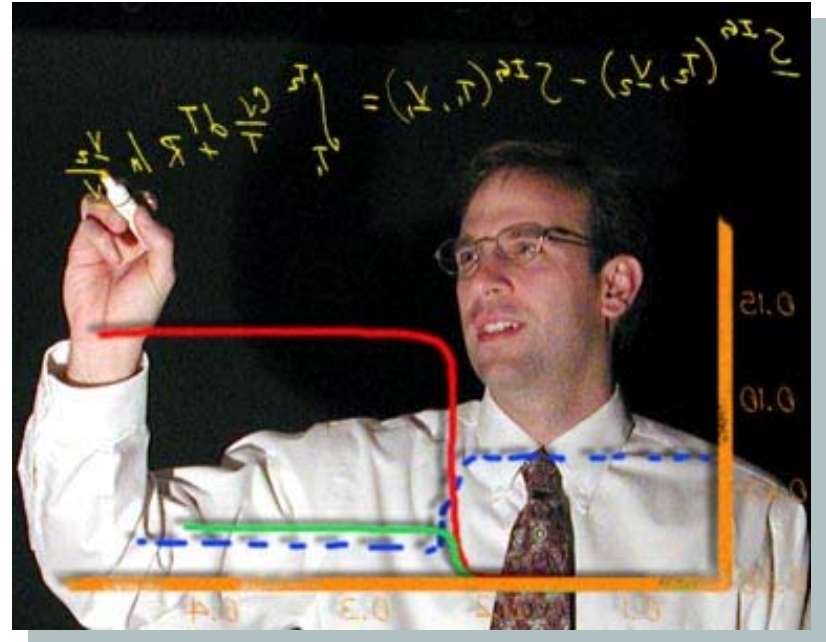
Our Mission

Implement a research, development, and demonstration program to resolve the environmental, supply, and reliability constraints of producing and using fossil resources



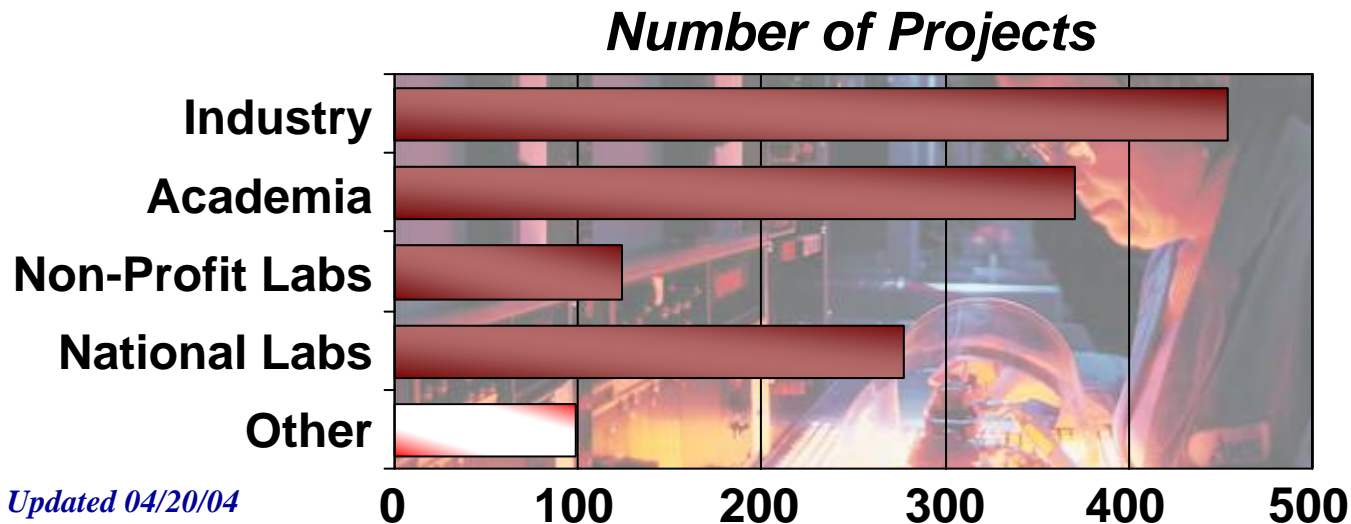
What We Do

- Shape, fund, and manage extramural RD&D
- Conduct onsite research
- Support energy policy development



Implement and Manage Extramural RD&D

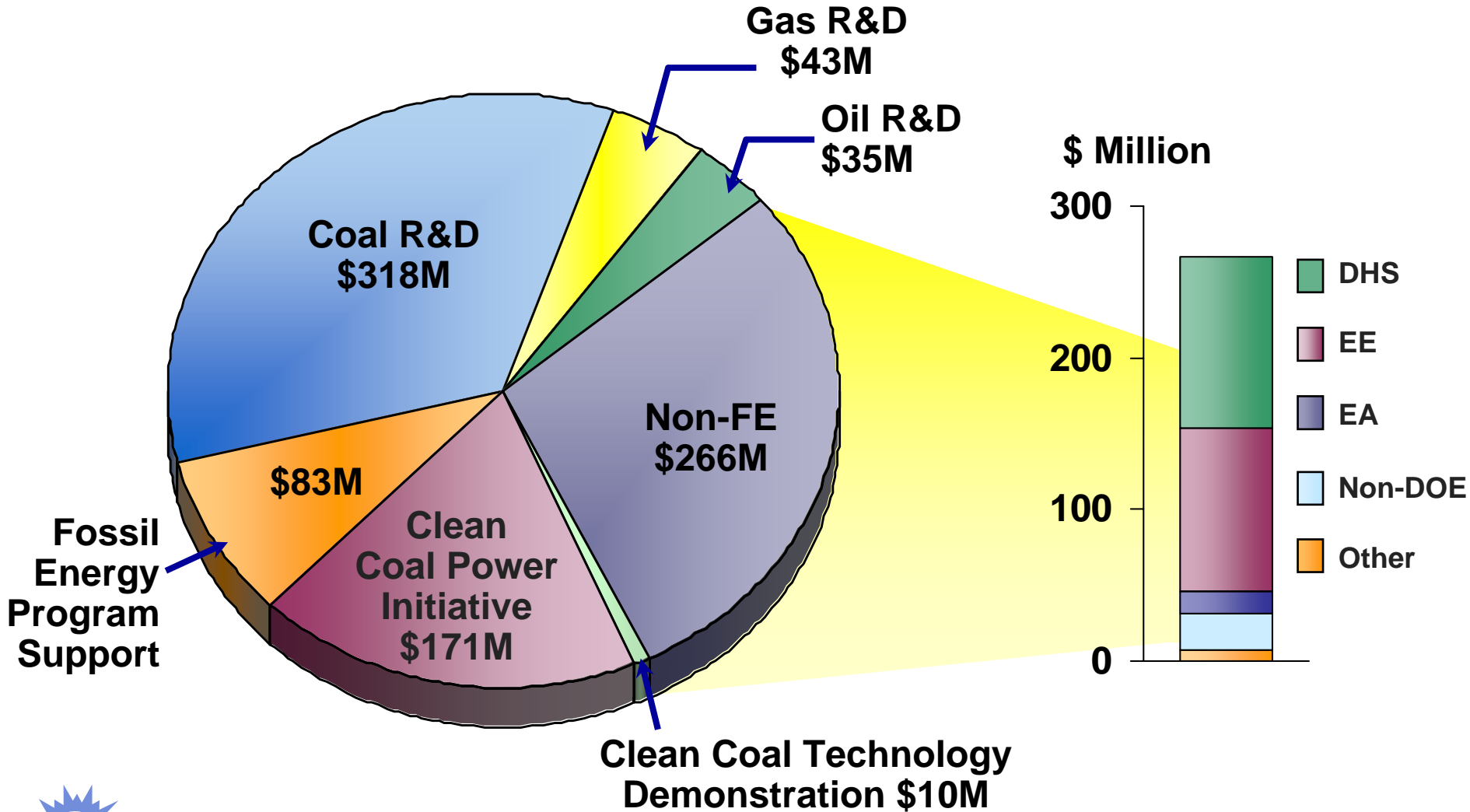
- 1,300 research activities in all 50 states and more than 40 foreign countries
- Total award value of \$8 billion
- Private sector cost-sharing of over \$4 billion
 - Leverages DOE funding
 - Accomplishes mission through commercialization
 - Ensures relevance



Updated 04/20/04



NETL FY 2004 Budget: \$926 Million



NETL Plays Key Role in Fossil Energy Supply, Delivery, and Use Technologies

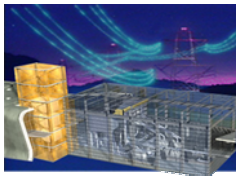
Electric Power Using Coal



Coal Production



Environmental Control



FutureGen Next Generation



Carbon Sequestration

Transportation Fuels



Oil Production



Refining & Delivery



Coal-based Hydrogen



Hydrogen Infrastructure

Natural Gas



Exploration & Production



Pipelines & Storage



Fuel Cells



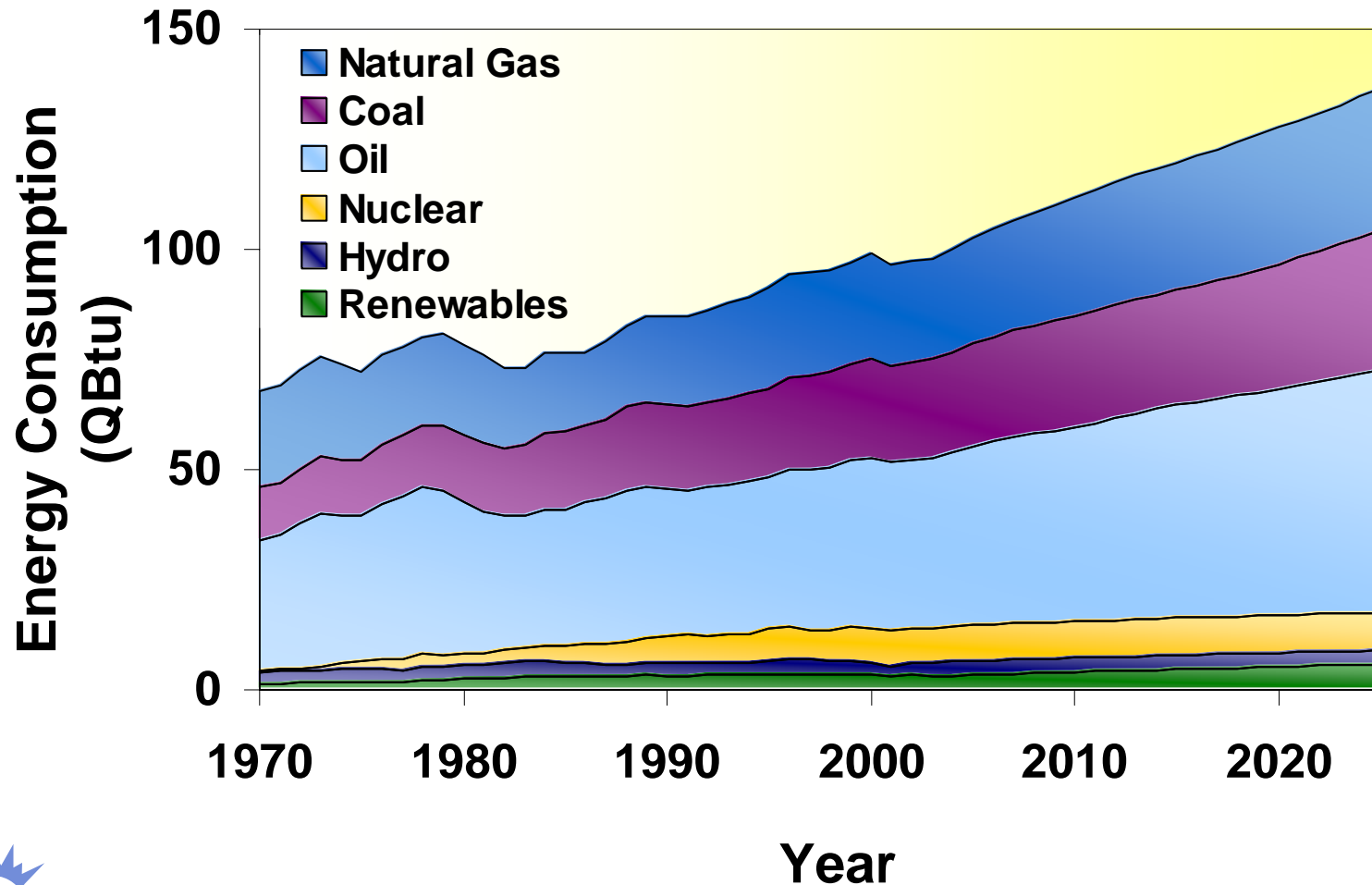
Combustion Turbines



Photo of hydrogen fueled car: Warren Gretz, NREL

Fossil Fuels Provide 85% of Our Energy

U.S. Energy Consumption by Fuel, 1970 – 2025



NETL Mission Areas



**Strategic Center
for Coal**



**Strategic Center
for Gas and Oil**



**Advanced
Initiatives**



*Permian Basin oil well - Texas BEG website
Hot water tank - NIST website*

DOE Intellectual Property Scheme

Inventions:

- Subject inventions owned by the Government unless the Government waives rights
 - Automatic waiver for small business and non-profits (Bayh-Dole)
 - All others must request waiver (conditions: 20% cost-share; substantial U.S. manufacturing; Government use license)

Data:

- Data generated in R&D awards need to be made publicly available
- Can withhold publishing data prior to patent application
- “Limited Rights Data” protected
- Authority to withhold data generated with public funds for up to 5 years (Energy Policy Act)



University Turbine Systems Research Program

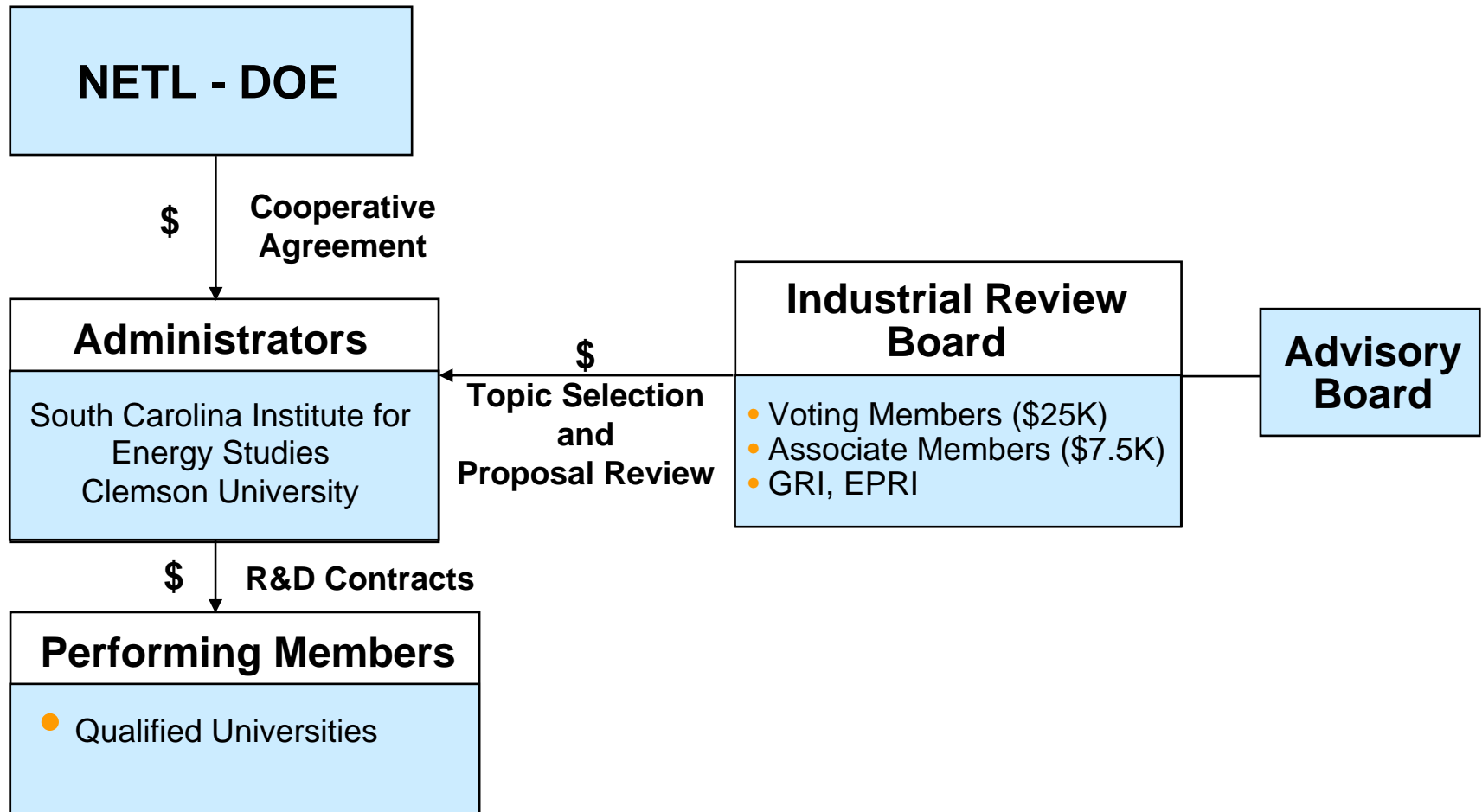
**Managed by South Carolina Institute for Energy Studies
at Clemson University**

Program Goals

- **Ensure a long term turbine research program**
- **Respect university mission, “Learning at Highest Level”**
- **Contribute to sustained health of U.S. turbine industry**
- **Support university-industry-government interfaces**
- **Manage university-industry intern program**



University Turbine Systems Research Program (cont.)



University Turbine Systems Research Program (cont.)

Technical Approach

- Execute solicitation for university research projects
- Place fellowships
- Organize annual program review workshop



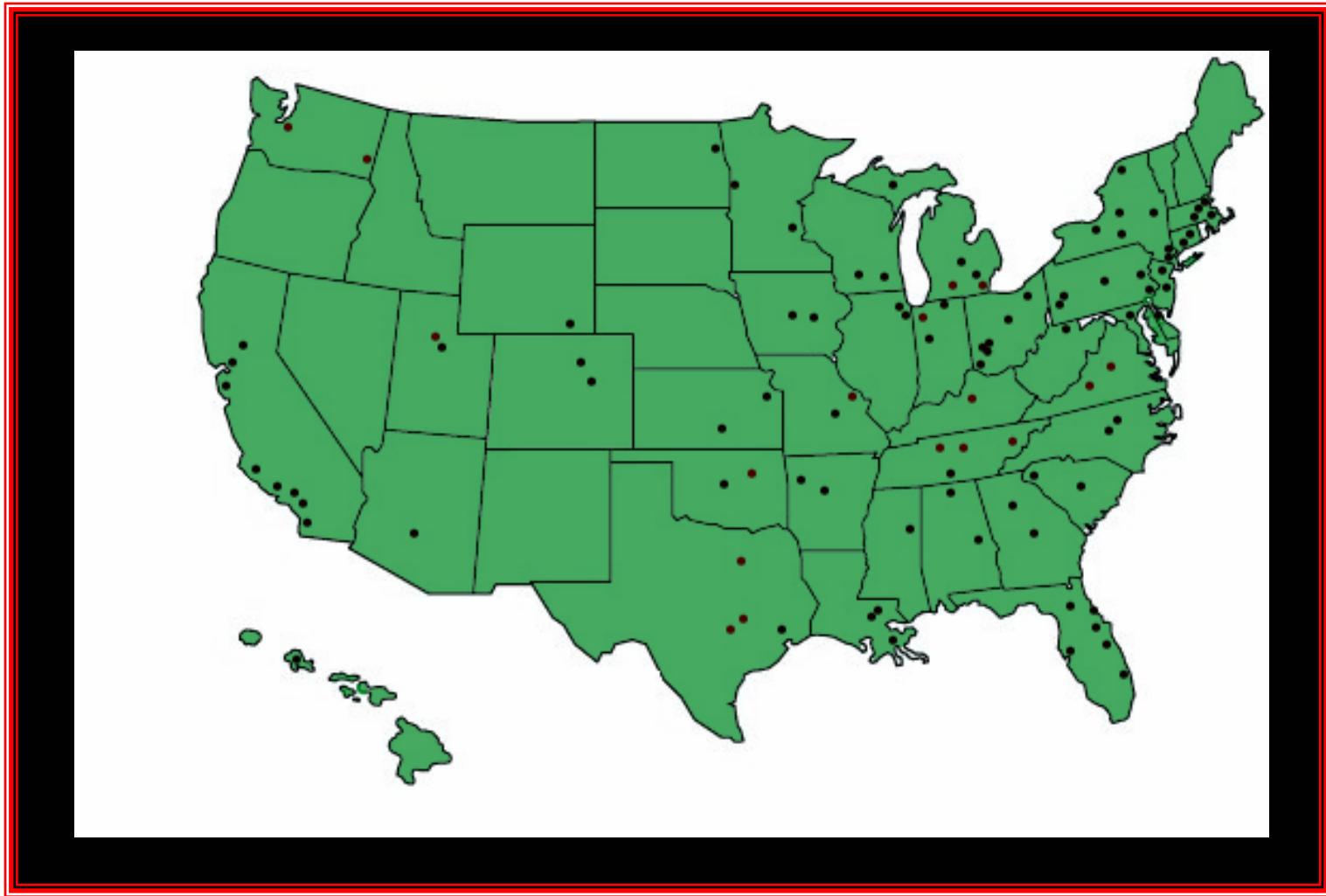
University Turbine Systems Research Program (cont.)

Relevancy of Program

- Ensures “long term” turbine research by creative research in basic and fundamental areas
- Contribute to breakthrough concepts that result in improved performance, reliability, cost, etc.
- Provides talent to industry:
 - Consulting on fundamental and basic concepts
 - Future engineering and science employees



UTSR PERFORMING MEMBERS



UTSR PARTICIPATING REVIEW BOARD

VOTING MEMBERS

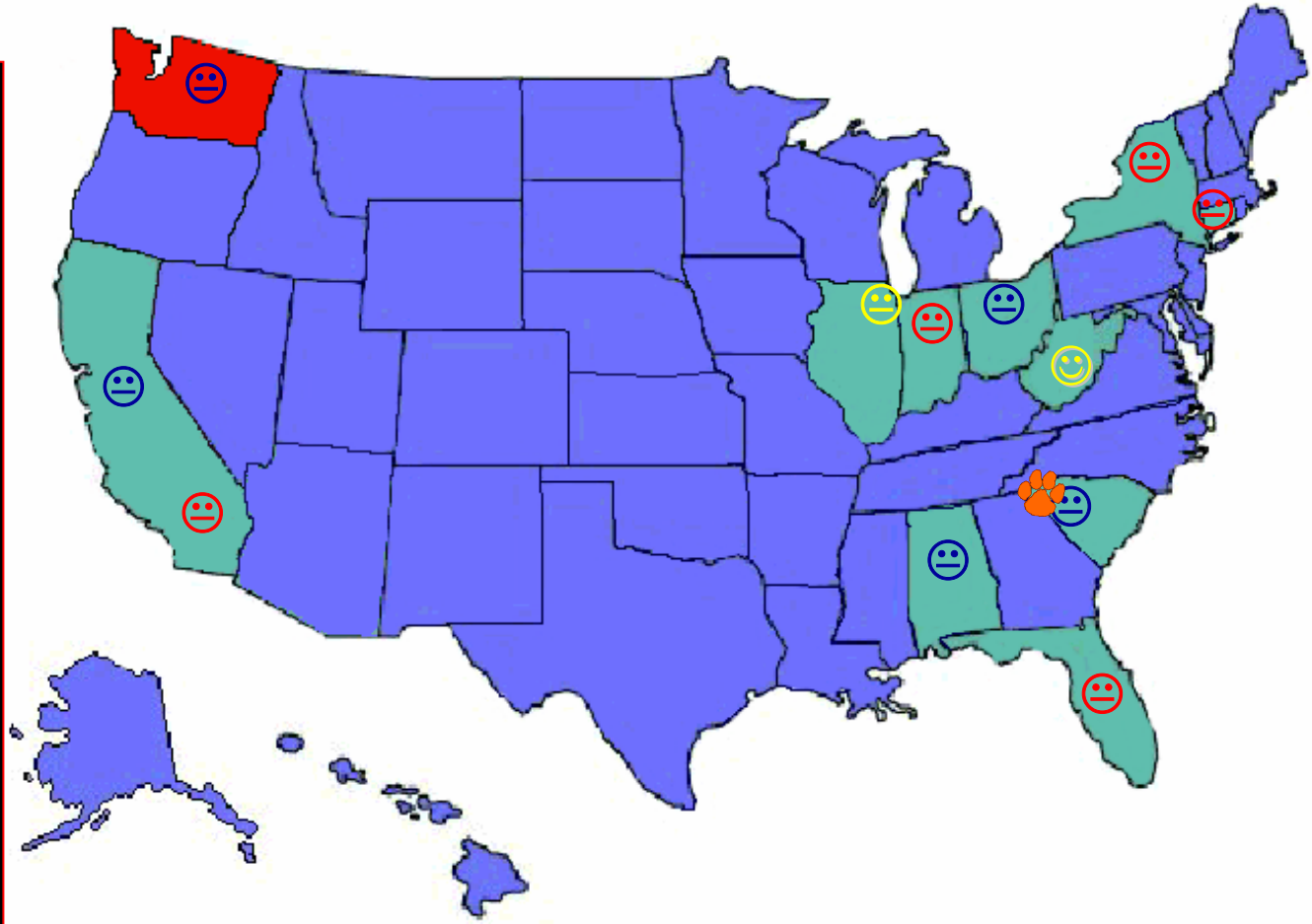
General Electric
Pratt & Whitney
Rolls Royce
Siemens Westinghouse
Solar Turbines

ASSOCIATE MEMBERS

EPRI
Parker Hannifin
Ramgen Power
Southern Company
Woodward FST

ADVISORS

DOE/NETL
GTI



Consortium for Premium Carbon Products from Coal (CPCPC)

Develop Premium Carbon Products from Coal

- Commercial carbon and graphite products from coal
- Coal-derived feedstocks as direct precursors for carbon and graphite products
- New carbon materials from coal
- New non-fuel uses of coal

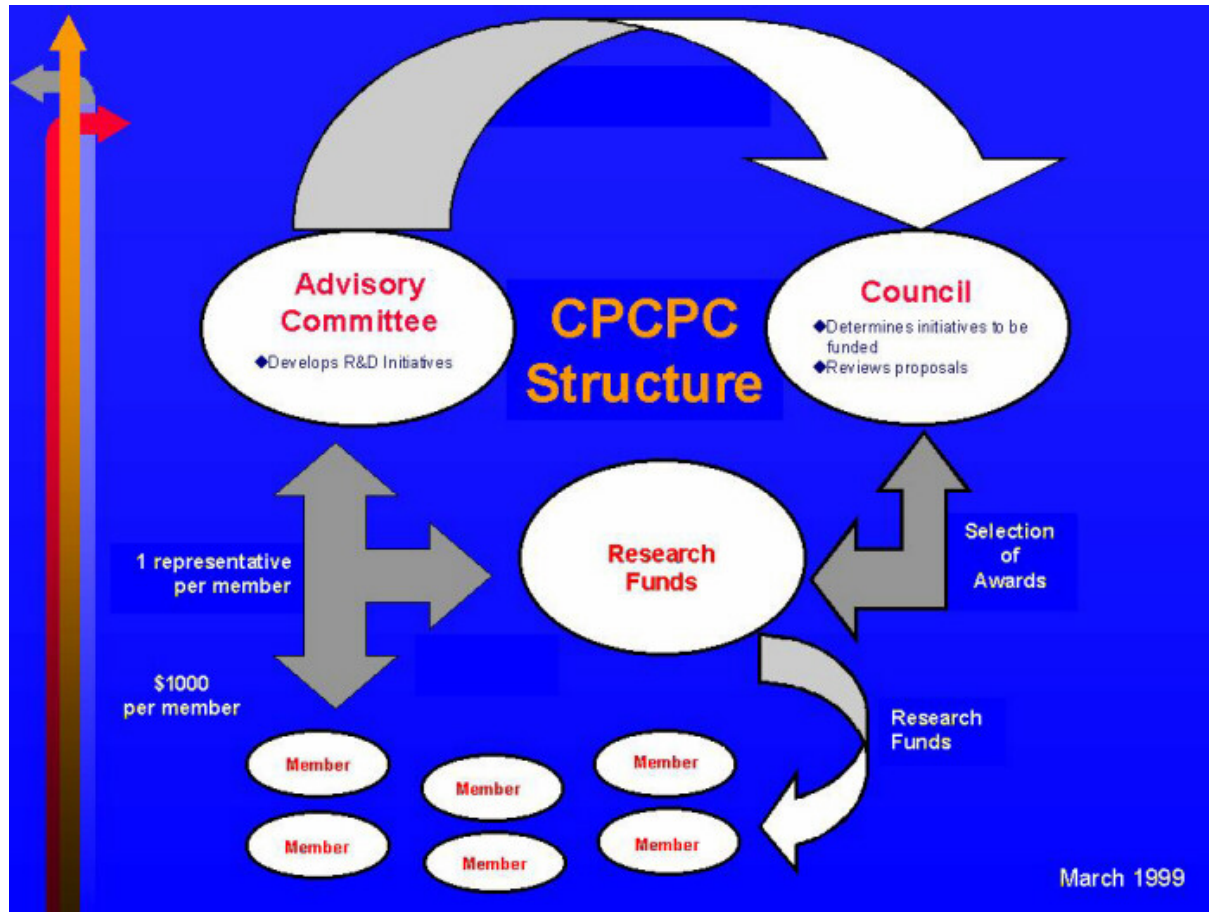


CPCPC (cont.)

- Established in June 1998
- Base funding by NETL
- Industry-driven, national in scope
- Has constitution/ bylaws, Technical Advisory Committee, Executive Council
- Membership (~40 members)
- Penn State has management role
- 63 projects funded to date
- Close to \$10 million directed towards research on "coal to premium carbon products" so far
- Web site: <http://www.energy.psu.edu/cpcpc>



CPCPC (cont.)



CPCPC (cont.)

- **Technical Advisory Committee**
 - Each member designates one person
- **Executive Council**
 - Seven elected positions (voting)
 - Two charter positions (voting)
 - Must be a full member/ elected by members
 - Rotating terms (1 and 2 year terms)
 - Can modify Constitution/ Bylaws
 - Voting Council members approve projects for funding



CPCPC (cont.)

Partners:

- Penn State and West Virginia are the Charter Members
- Department of Energy, National Energy Technology Laboratory as Affiliate Government Agency
- Membership open through application
 - **Universities**
 - **Coal companies**
 - **Coal tar pitch companies**
 - **Carbon fiber companies**
 - **Carbon composite companies**
 - **Carbon & graphite companies**
 - **Carbon & graphite user**
 - **Petroleum coke companies**



CPCPC (cont.)

Proposal process:

- **Must be member to submit proposal**
- **Universities encouraged but not required to partner with industry**
- **Project must be within the defined scope**
- **Requires cost share (cash or in-kind)**
 - Industrial application: minimum of 50%
 - Fundamental: minimum of 25%
- **Project costs typically \$70,000 to \$120,000**
- **One year duration**
- **Submit 6 page proposal by October 4, 2004**
- **Present proposal during November meeting**



Stripper Well Consortium

- Opportunity for stripper well operators to jointly solve similar problems
- Provides an avenue for stripper well operators to afford remediation options (consultants, universities)
- Provides a forum for stripper well operators to discuss problems/ solutions from across the U.S.
- Success will be based on industry involvement



Stripper Well Consortium (cont.)

- **Mission**

Assist in the development, demonstration, and commercialization of technologies to improve the production performance of natural gas and petroleum stripper wells

- **Benefits**

- Partnership between industry, academia, and government
- Industry plays key role in prioritizing research
- Networking and partnering opportunities
- Investment by members leverages Federal R&D funds



Stripper Well Consortium (cont.)

- **NETL and NY State Energy and Development Authority provide base funding and guidance**
- **Managed by Penn State University**
- **Full/Affiliate membership (63 members)**
 - Full (Industrial \$1,000/ yr or \$2,500/ 3 yrs)
 - Affiliate (Organizations \$200/ yr or \$500/ 3 yrs)
 - Natural gas and petroleum producers, service companies, industry consultants, universities, and industrial trade organizations



Stripper Well Consortium (cont.)

- **Technical Advisory Committee**
 - Each member designates a person to represent their company - 1 vote
- **Executive Council**
 - Seven elected positions (voting)
 - Four standing positions (non-voting)
 - Must be a full member/ elected by members
 - Rotating terms (1 and 2 year terms)
 - Can modify Constitution/ Bylaws
 - Voting Council members approve projects for funding



Stripper Well Consortium (cont.)

- **Companies join for different reasons**
 - Low-cost access to new technologies
 - Networking
 - Ability to compete for research monies
- **Research Monies**
 - Full members compete
 - Requires 30% cost share (cash and/or in-kind)
 - Short proposal/ presentation required
 - Executive Council selects
 - Technology transfer presentations required



Externally Managed Consortia

Thanks for your attention!

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