

# National Energy Technology Laboratory Strategic Center for Natural Gas



*Rocky Mountain Gas E&P  
Technology Transfer Workshop*

*August 5, 2002*

**Brad Tomer, Product Manager  
Gas Exploration, Production, and Storage**



# National Energy Technology Laboratory



- **One of DOE's 17 national labs**
- **Government owned/operated**
- **Sites in:**
  - West Virginia, Pennsylvania, Oklahoma, and Alaska
- **More than 1,100 federal and support contractor employees**
- **FY 02 budget of \$770 million**
- **Primary focus is managing external Fossil Energy R&D**



# Strategic Center for Natural Gas



- Created December 1999
- One place within DOE for natural gas issues
- Borehole to Burnertip



**Exploration  
&  
Production**



**Pipelines  
&  
Storage**



**Fuel  
Cells**



**Combustion  
Turbines**



# Gas E&P Program Mission

**Develop technologies to help ensure an abundant, economical, domestic supply of natural gas with minimal environmental impact**

**Meet expected 30 - 35 TCF demand by 2020**





# Gas Exploration & Production Program Goals

- **Recover more from existing fields (Near-Term)**
  - Effective Technology Transfer
  - Locate by-passed zones in conventional reservoirs
  - Enhance stripper well production
- **Exploit marginal/unconventional resources (Mid-Term)**
  - Reduce drilling cost
  - Improve success rates in finding gas in tight sands
  - Increase recovery efficiency
- **Encourage E&P of frontier resources (Long-Term)**
  - Deep (>20,000 feet) gas
  - Methane Hydrates

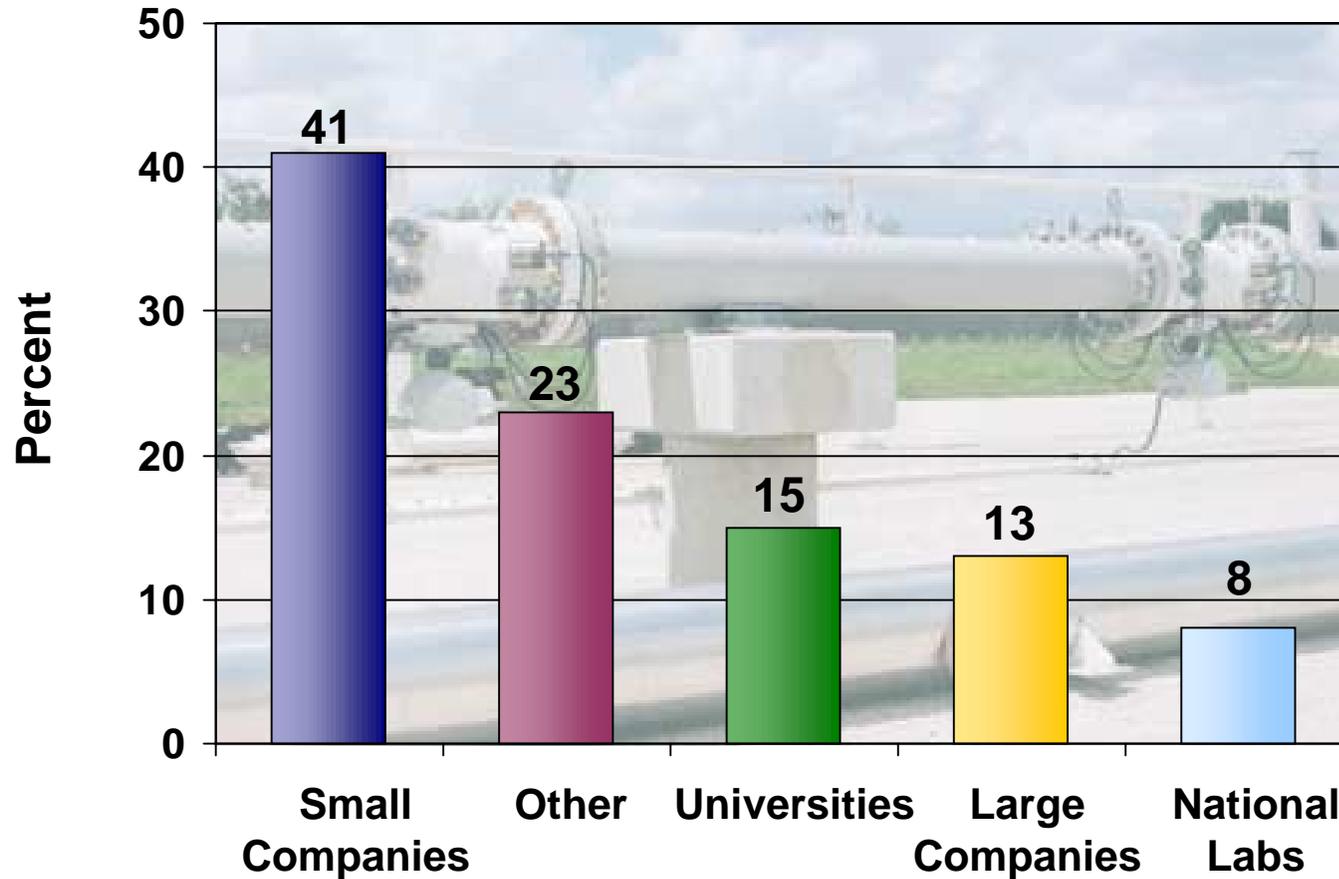


# Partnership Approach

- **Careful Planning with Significant Industry Input**
  - Technology roadmaps; advisory committees; consortiums; merit reviews.
- **Cost-shared R&D conducted with partners**
  - Industry; federal agencies; National labs; universities.
- **Modest budget**
  - Approximately \$30 Million/year
- **Technology transfer**
  - Successful field demonstrations; PTTC; Web Site; workshops; Gas TIPS.



# Gas E&P R&D Performer Profile



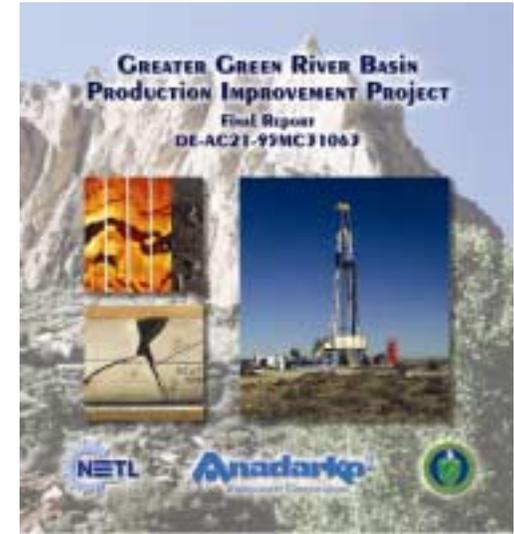
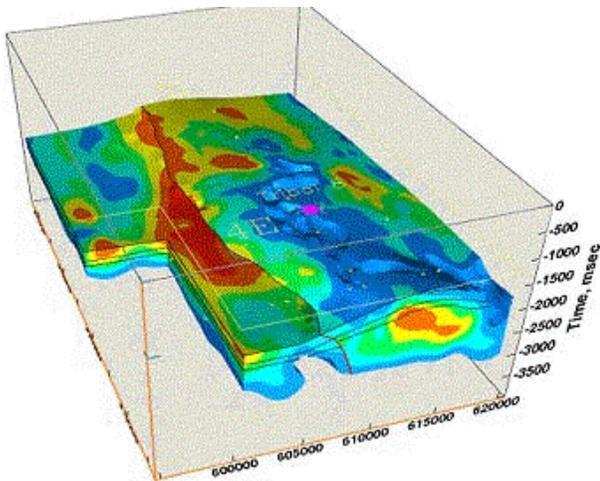
**More than 80 active projects in Gas E&P Portfolio**



# Gas E&P Program Highlights

- **Deep Horizontal Well**

- Intersected 400 open fractures at 15,000'
- Produced over 6.4 bcf in three years
- Encountered significant water
- CD available



- **Water Identification Studies**

- ARI conceptual water flow models for GGRB & WRB
- IDT 3-D basin model for WRB
- Overpressure zones, sweet spots, & gas water content



# Gas E&P Program Highlights

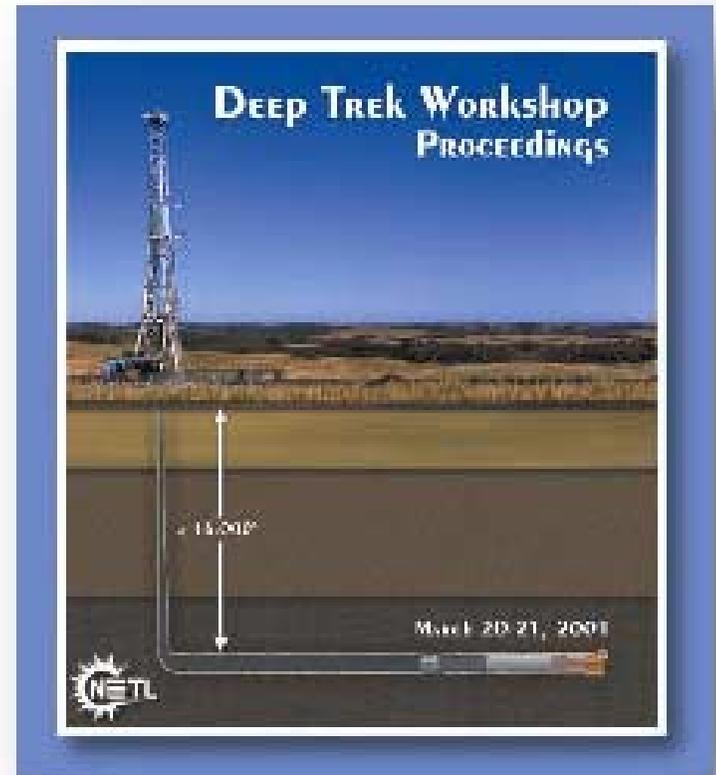


- **Microwave Processing - binding cutters to bits**
  - Penn State University/Dennis Tool Co.
  - Dramatically longer-lasting bits
  - Applications to various other industries
- **Advanced Composite Drill Pipe**
  - ACPT
  - Half the weight of steel pipe, extend the capacity of current rigs and allow high speed data communication
- **Intellipipe**
  - Novatek/Grant Prideco
  - Steel drill pipe with high speed data communication capability

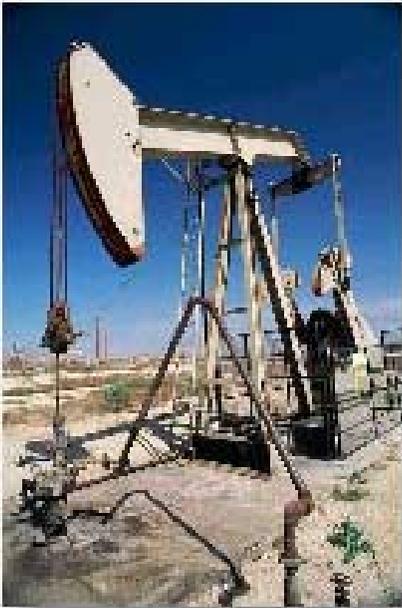


# Deep Trek Program

- **Purpose**
  - Develop drilling and completion technologies for very deep drilling (>20,000')
- **Status**
  - Roadmap workshop March 2001
  - Budget established in 2002
  - Solicitation issued February 2002
    - Round 1 complete
    - Round 2 proposals due November 2002



# Stripper Well Consortium



- Industry-driven consortium est. Oct 2000
- Funded by NETL, NYSERDA, members (60)
- FY 2001: 13 projects valued at \$1.6M
- FY 2002: 14 projects valued at \$2.1M
- Target: small independents
- Projects: 1 year duration

- **Products:**
  - GOAL PetroPump
  - METEOR software
- [www.energy.psu.edu/swc](http://www.energy.psu.edu/swc)



# Options for Industry Participation

- **Advisory Committees**
  - Hydrates program
- **Roadmapping**
  - Infrastructure, hydrates, and many others
- **Cooperative Agreements**
  - Joint industry projects, individual firms, etc.
- **Consortiums**
  - Advanced turbines, carbon products, SWC
- **National laboratory partnership**
  - NGOTP, hydrates, ultra-clean fuels





March 19, 2001

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## The Strategic Center for Natural Gas

### Methane Hydrates Solicitation

The Strategic Center for Natural Gas is seeking applications for the solicitation titled, "Methane Hydrates" The closing dates for submission of proposals is April 24, 2001. [Read More!](#)

### Honeywell Hybrid Fuel Cell Tech. To be Added to DOE/SCNG R&D Program

DOE has selected Honeywell International to begin developing a new type of "planar solid oxide fuel cell" hybrid power system. [Read More!](#)

### Lasers Studied for 21st Century Oil, Natural Gas Drilling

DOE and the natural gas industry are exploring whether lasers could be the next revolutionary advance in oil and gas drilling. [Read More!](#)

*Integrating All Elements of DOE's Natural Gas Research From Borehole to Burner Tip*

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**Internet Location:** [netl.doe.gov/scng/index.html](http://netl.doe.gov/scng/index.html)

*Strategic Center for Natural Gas*

# Today's Event



*Rocky Mountain  
E&P Technology  
Transfer Workshop*



*August 5, 2002  
Denver, Colorado*

