

Government/Industry Pipeline R&D Forum



*Roadmapping
Houston, Texas
March 22 - 24, 2005*

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Strategic Center for Natural Gas & Oil



Goals of This Session

- **Presentations**
 - Introduce existing procedures for Roadmapping
 - Illustrate some of the products
- **Discussions**
 - Discuss alternative Roadmapping approaches
 - Identify possible enhancements
- **Is there a better way?**



Panel Presenters

- **Rodney Anderson, USDOE/NETL**
- **Jim Merritt, USDOT/OPS**
- **Paul Beckendorf, GTI**
- **Gerald Paulus, Mesa Utilities**



Purpose of Roadmapping

- Understand key stakeholder values
- Identify key trends and drivers
- Determine technical barriers and issues
- Identify critical research needs and opportunities
- Develop a set of priorities and an implementation strategy (R&D Roadmap)
- Provide feedback on the current portfolio
 - Correct R&D activities
 - Progress
 - Gaps
 - Adjustments to strategies
- Update Existing R&D Roadmap



Roadmap Overview

- **Determine focus and scope of roadmap**
- **Select targeted technology areas**
- **Identify broad cross section of key stakeholders**
- **Select venue and required facilities**
- **Determine structure of roadmap sessions**
 - Type of facilitators
 - Number of breakout sessions
 - Recording mechanism
 - Final product
- **Compile/analyze results**
- **Develop implementation strategy w/timetable**
- **Implement roadmap**



Workshop Scope

- **Focus on technology area**
- **Timeframe**
 - Near-, mid-, or long-term focus (define)
- **Type of R&D emphasis**
 - Basic or applied R&D
 - Demonstrations
- **Identify what is NOT included**
 - Natural gas storage
 - LNG
- **Determine appropriate role for all collaborators**
- **Capture what is different, what is missing**



Breakout Sessions

- Detailed agenda
- Specific technology focus
- 10-12 participants is optimum size
 - Assign or float participants
- Facilitator & flipcharts
- Scribe
- Adequate notes to record results
- Everyone participates
- Elect spokesperson
- Report outs in general Roadmap session



Roadmap Steps

- Identify and group technology issues & barriers
- Determine challenges and possible solutions
- Identify R&D opportunities
- Assign time frames
- Determine implementation steps
- Determine roles/responsibilities for R&D
- Determine R&D path and possible milestones
- Develop implementation strategy
- Develop metrics

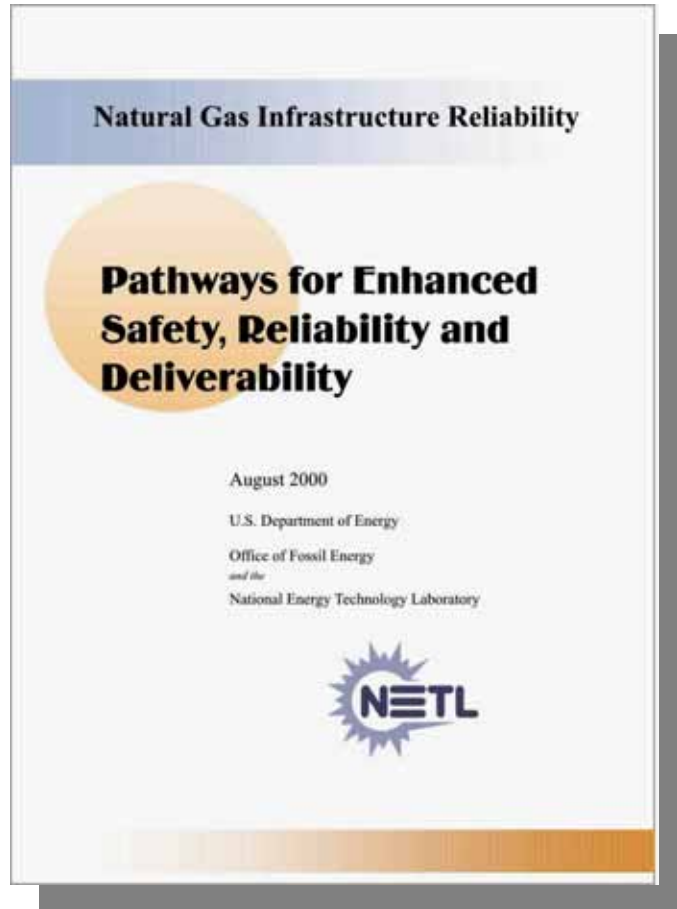


Caveats

- Roadmapping is a lot of work & expensive
- Alternative may be more work and more expensive
- Attendance is difficult to predict
- Trained facilitator necessary
- Dominant participant
- Consensus is often NOT possible
- Data collection and reporting requires focus
 - Someone must be responsible
- Avoid mission creep
- Priorities can change
- Funding levels may not be adequate
- Keep stakeholders aware of progress



Wrap-up



- **Distribute the results**
- **Let participants know they contributed**
- **Use the results**
- **Refer to Roadmap**



Recent DOE Roadmaps

Interagency Workshop

March 22-23, 2000 Washington, DC
DOE, DOT, FERC, EPA, DOI

Visioning Workshop

May 3, 2000 Pittsburgh, PA
15 industry executives

Roadmapping Workshop

June 6-7, 2000 St. Louis, MO
40 industry experts

Roadmap Update Workshop

January 29-30, 2002 Pittsburgh, PA
40 industry experts

Roadmap Update Workshop

February 8, 2004 Phoenix, AZ
40 industry experts

Industry Forum

September 16-17, 2002 Morgantown, WV
100 attendees

Gas Storage Workshop

November 29, 2001 Pittsburgh, PA
50 industry experts

Gas Storage Roadmap Update

February 3, 2004 Atlanta, GA
50 industry experts

LNG Roadmap Workshop

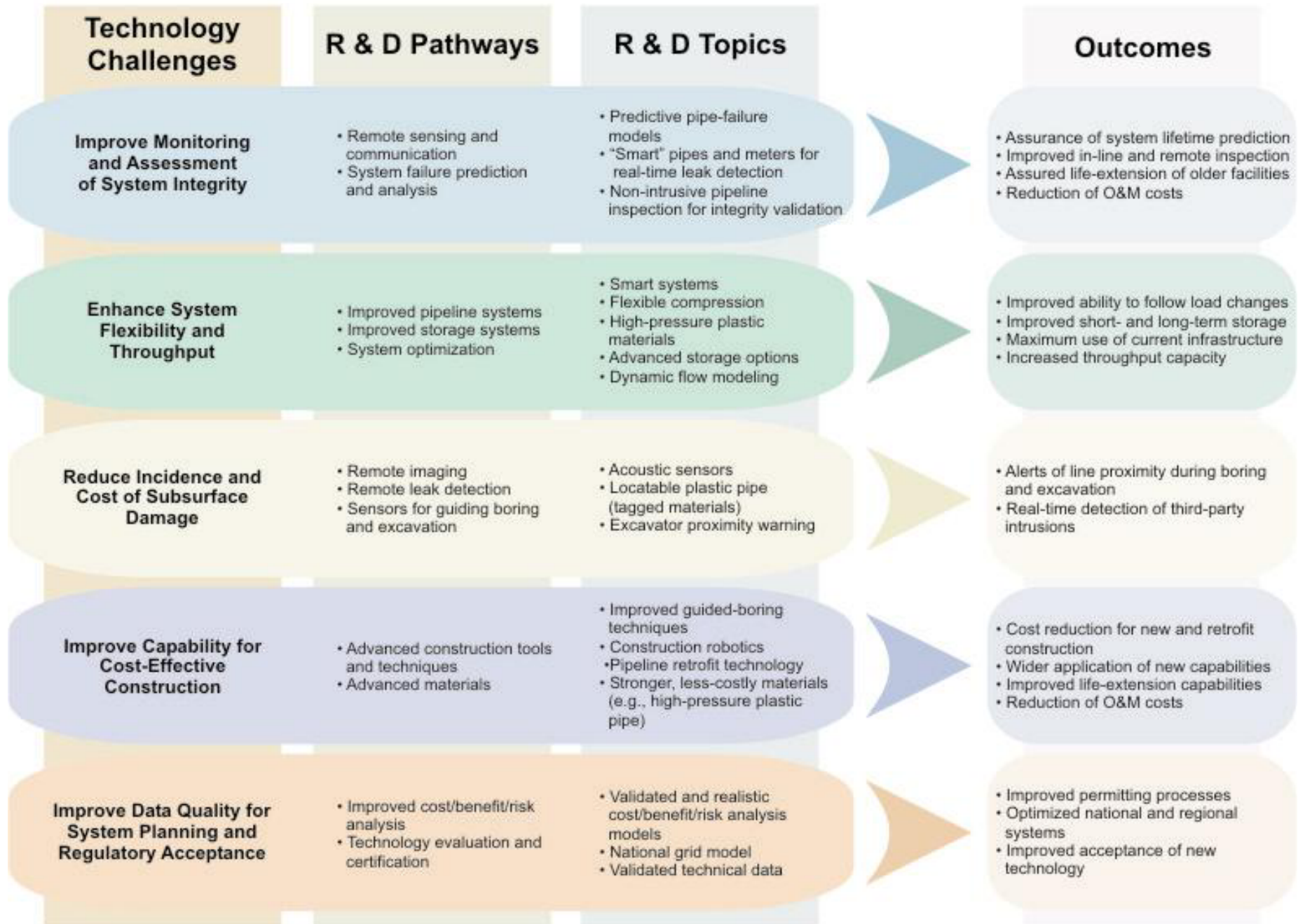
November 8-9, 2004 Houston, TX
120 industry experts

LNG Multi-Agency Meetings

Quarterly, Washington, DC
20 participants



Figure 1. Technology Roadmap for Infrastructure Reliability



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Natural Gas Leak Detection Technology Demonstration September 13-17
A real-world demonstration of the capabilities of newly developed natural gas leak detection technologies will take place during a series of round robin tests to be held during the week of September 13-17, 2004 at the Rocky Mountain Oilfield Testing Center (RMOTC) in Casper, WY. The tests are sponsored by the US Department of Energy's (DOE) National Energy Technology Laboratory's (NETL). [Click here for more information.](#)

NETL Microhole Technologies Project Nominated as a Finalist in

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