

Overview of U.S. Shale Gas Development

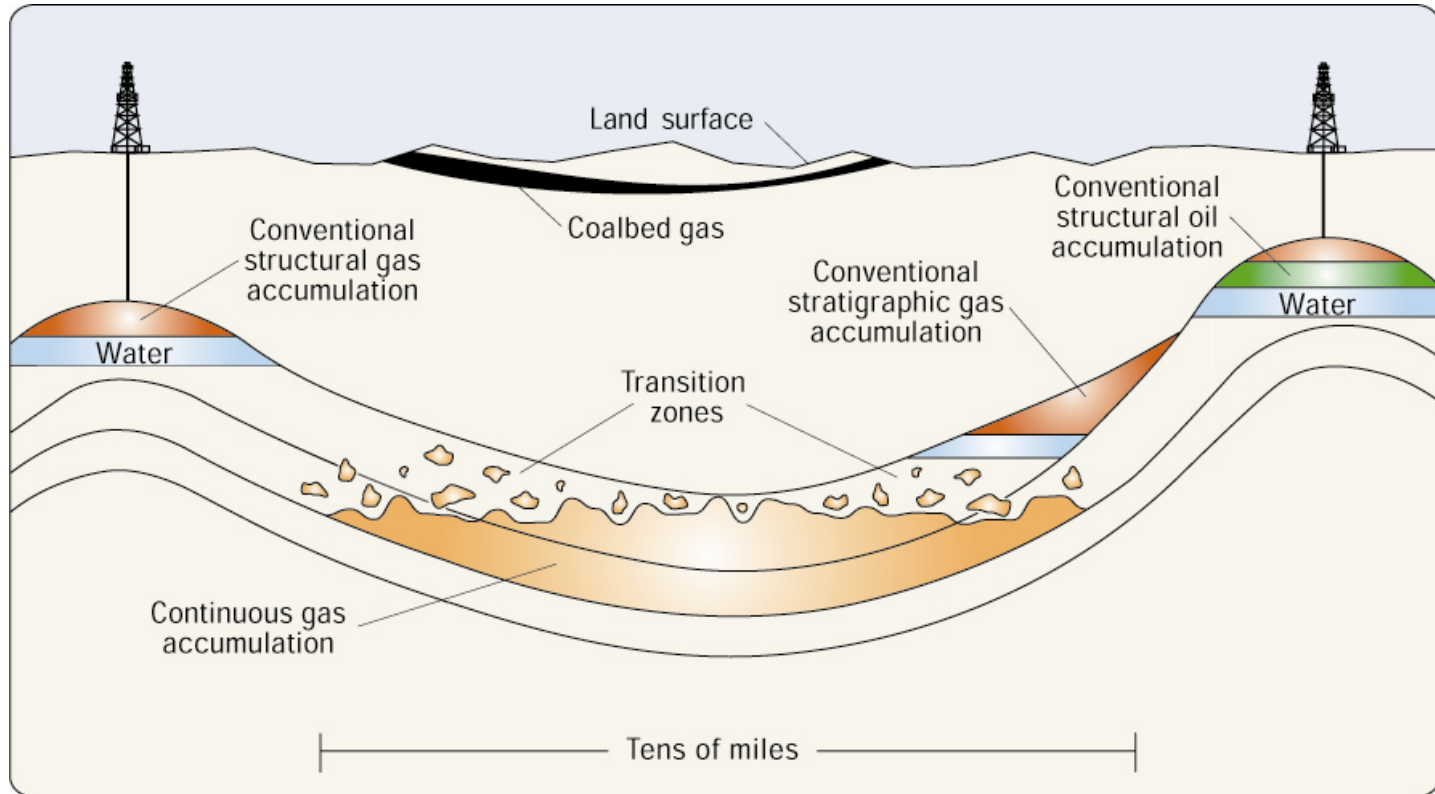
Presentation to
Delegation from Poland

Sally Kornfeld
Team Leader –
International Oil and Gas Activities
Office of Fossil Energy

April 24, 2013



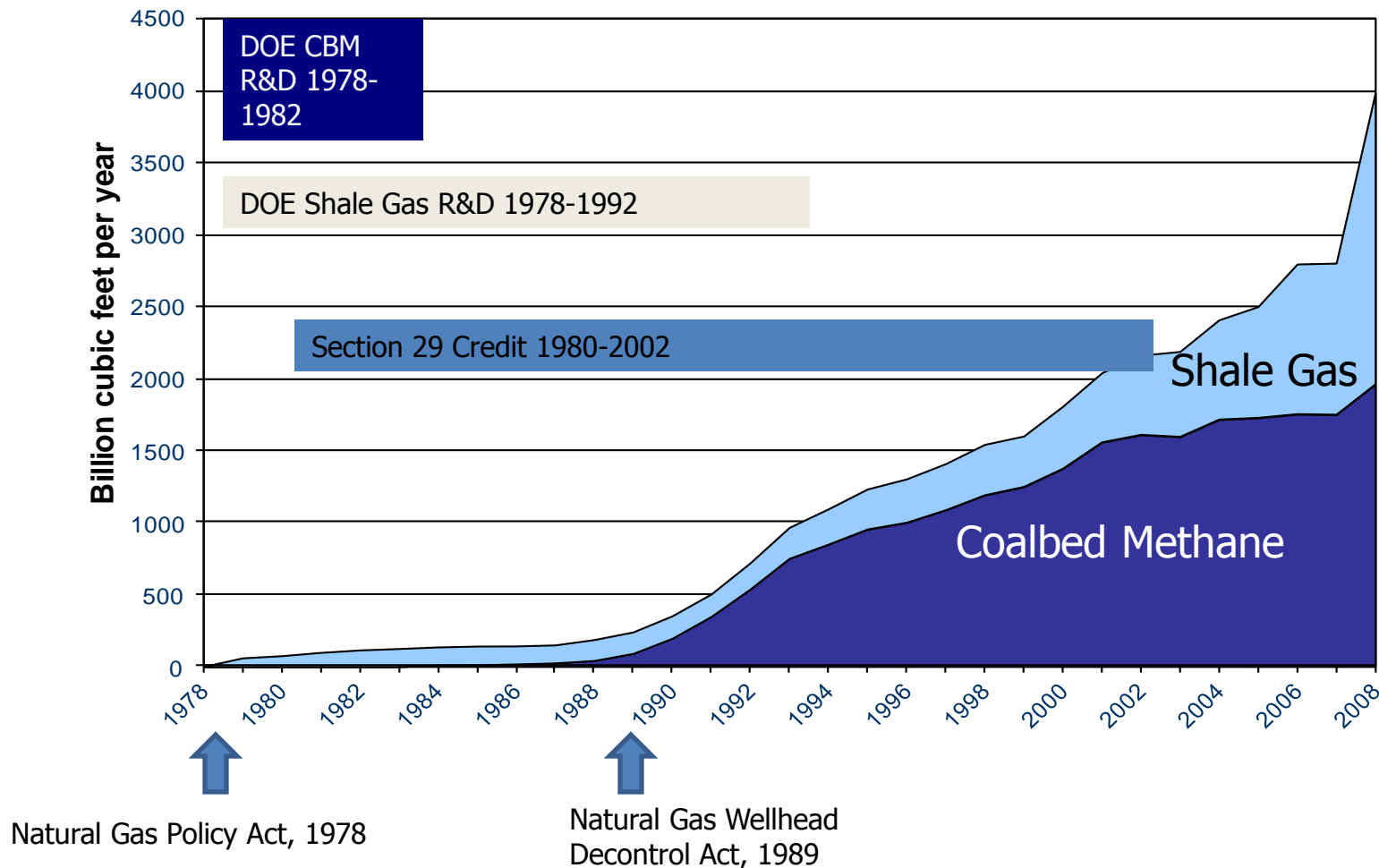
Or “continuous” ...



Source: U.S. Geological Survey

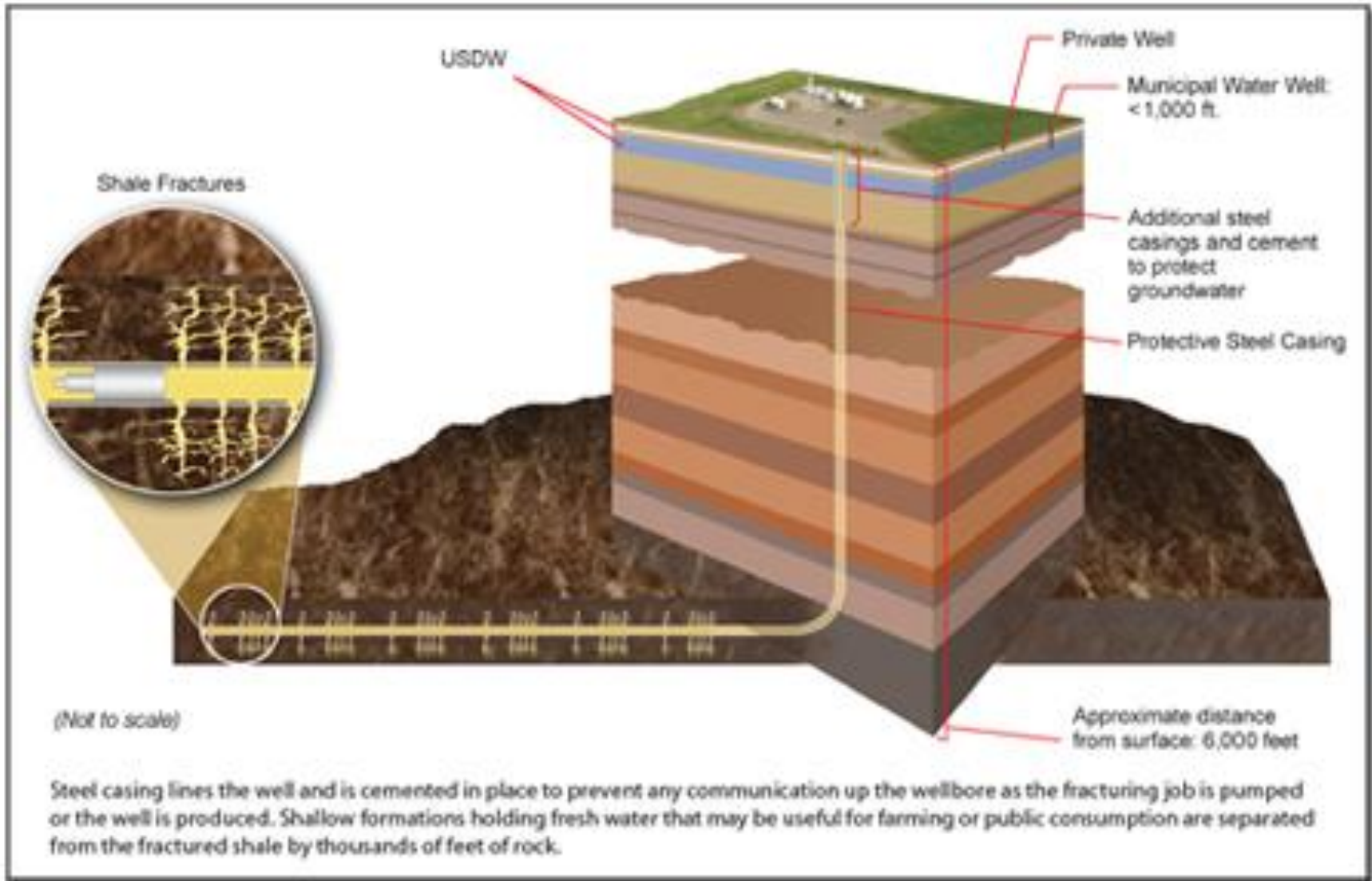
Deregulation, Tax Incentives and Government R&D Facilitated Unconventional Gas

Oil and
Natural Gas



Hydraulic Fracturing and Horizontal Drilling

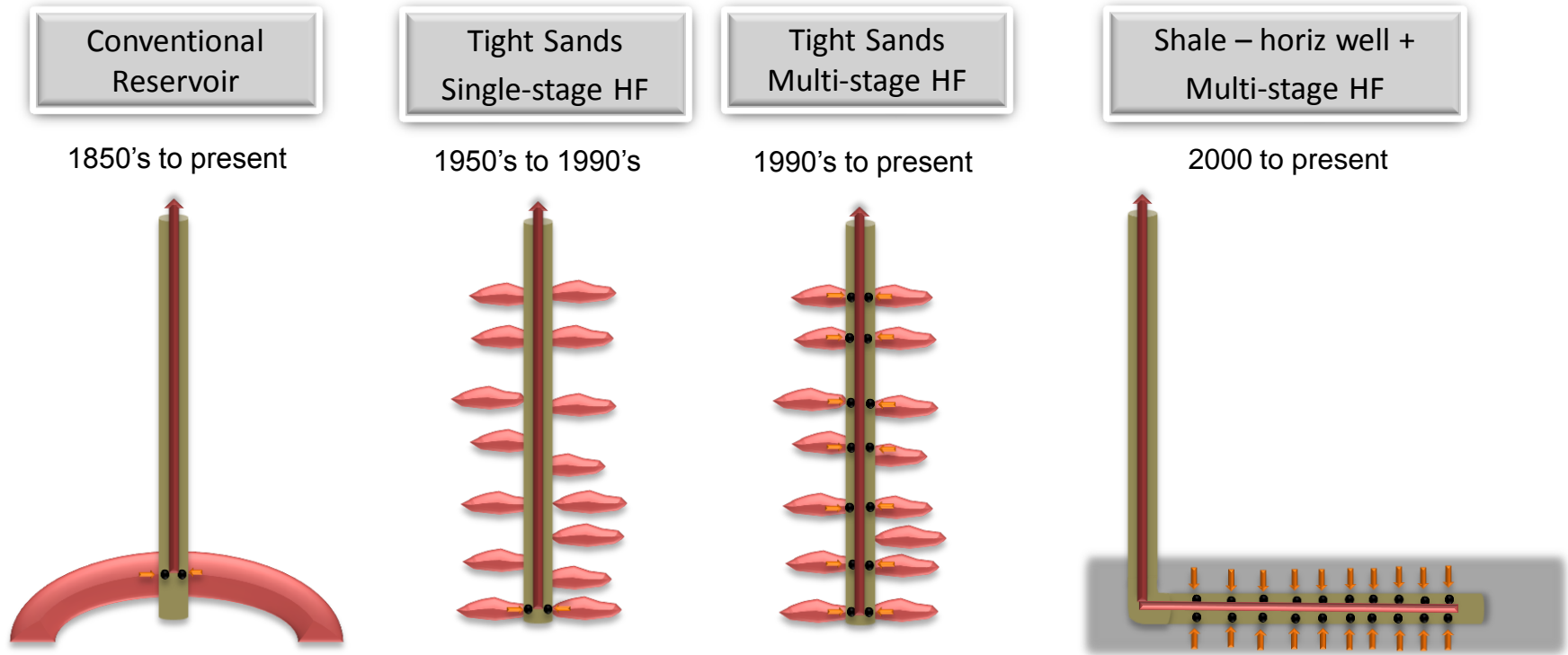
Oil and
Natural Gas



Source: National Energy Technology Laboratory

Development of Hydraulic Fracture Stimulation

Oil and
Natural Gas



Multi-stage hydraulic fracture stimulation (HF) unlocks gas in unconventional reservoirs



AMERICA'S
NATURAL GAS
ALLIANCE

Secretary of Energy's Advisory Board Recommendations

Oil and
Natural Gas

BLUEPRINT FOR A SECURE ENERGY FUTURE



March 30, 2011

Secretary of Energy Advisory Board



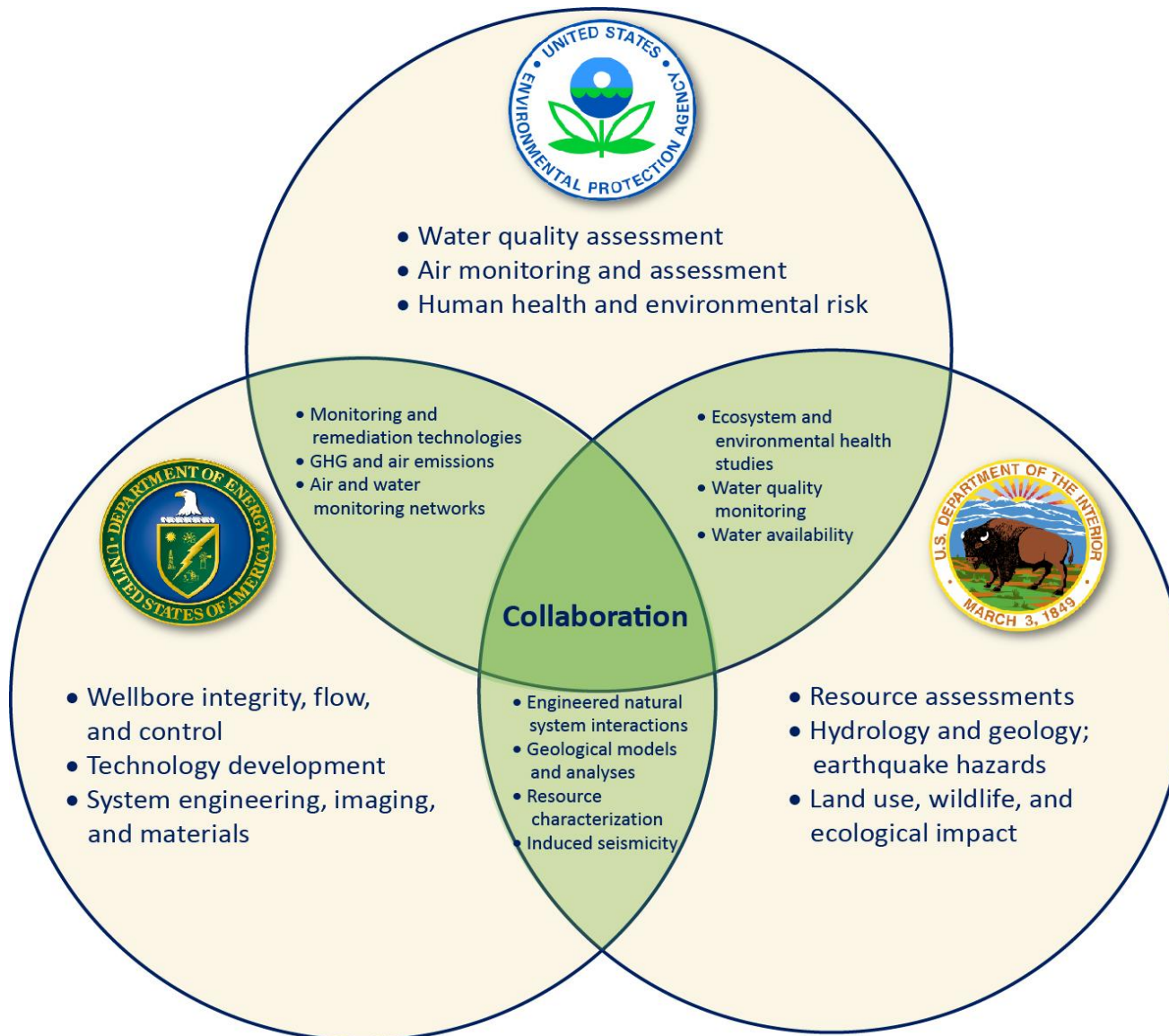
Shale Gas Production Subcommittee 90-Day Report

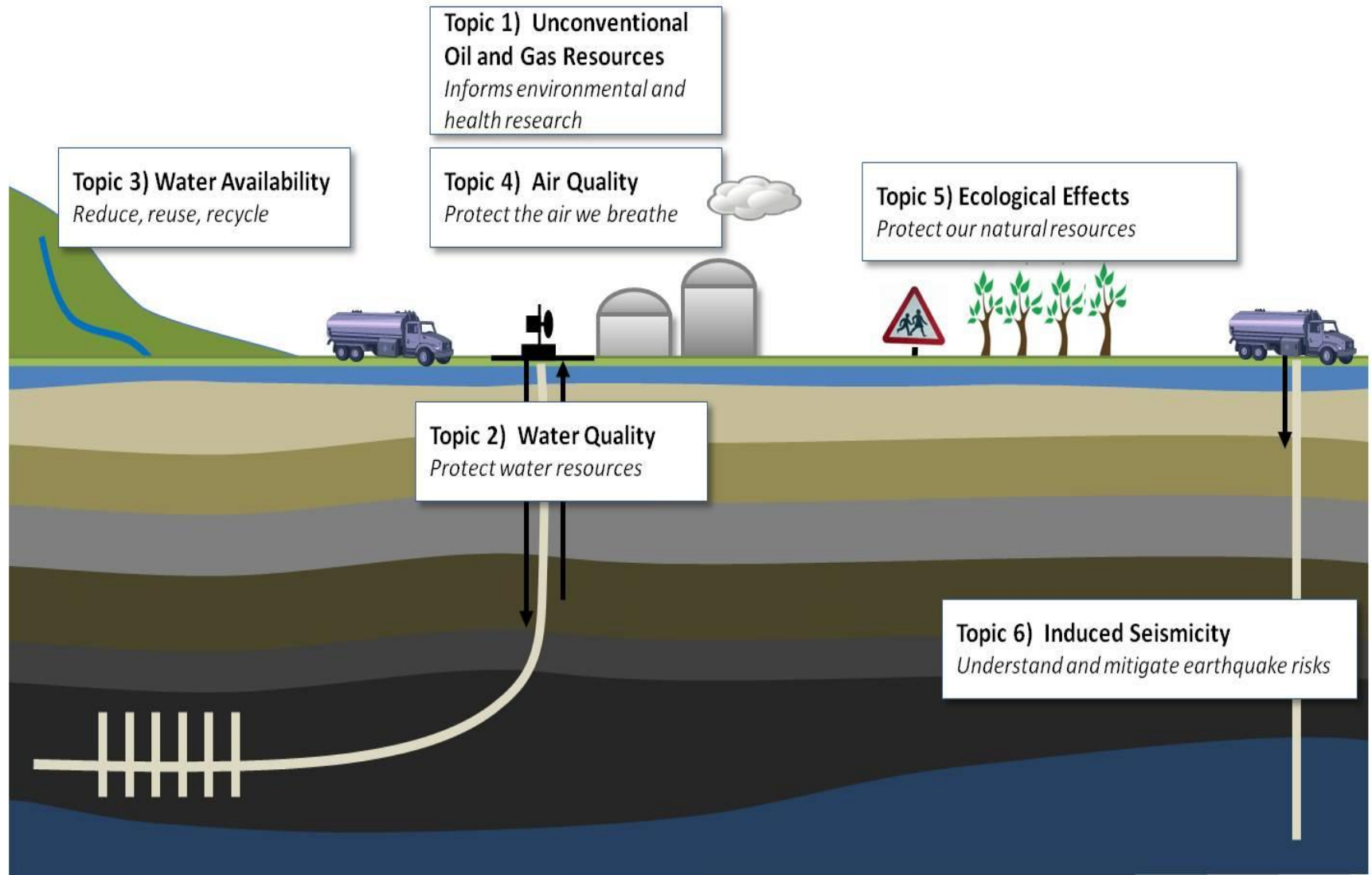
August 18, 2011



www.shalegas.energy.gov

- Manage short-term and cumulative impacts on communities, land use, wildlife, and ecologies
- Protect water resources
- Disclosure of fracturing fluid composition
- Identify research and development needs
- Create a public, national portal improving public information.
- Organize for sharing best practices
- Improve communication among state and federal regulators
- Reduce use of diesel fuel in fracturing
- Improve air quality throughout the production process







Bureau of Land Management: Hydraulic fracturing regulations for federal lands



Environmental Protection Agency:

- Fracturing using diesel fuels
- New guidelines for wastewater
- New standards for air emissions



Department of Energy: Sponsorship of chemical disclosure registry FracFocus

Below Ground:

- **Favorable Geology**
- **Technology – Including U.S. Government R&D**
- **Infrastructure – pipelines and domestic industry**

Above Ground:

- **Stable & Transparent Regulatory/Taxes/Fiscal Terms**
- **Developed Gas Markets**
- **Ease in Leasing**



Additional Factors to those in U.S.:

Access to:

- Resources,
- Gas Treatment,
- Pipelines, and
- Markets

Ability/Willingness to Import Expertise:

- Investment Climate: Huge Capital Required
- Equipment
- People (Visa support)

Great Potential, BUT:

In infancy – shale geology not yet proven

You never know if it is economic until drilled!!



U.S. DEPARTMENT OF
ENERGY

Oil and
Natural Gas



Thank you