Welcome and Introduction

Brad Ritts, Managing Director
Stanford Natural Gas Initiative
rittts@stanford.edu
ngi.stanford.edu
The Stanford Natural Gas Initiative

2008-2015 Electricity Generation
Coal reduced from 48.2% to 33.4%
Natural Gas increased from 21.4% to 32.5%
Additional growth in renewables

Stanford Natural Gas Initiative

- Stanford - industry partnership
- Launched in 2015
- Ensure gas is used to greatest social, economic, and environmental benefit
- More than 40 research groups in science, law, engineering, and business
- 17 member companies

US Natural Gas Production, Price, and Energy Carbon Dioxide Emissions

Data from US Energy Information Agency
Current Research Portfolio

- **Current Focus Areas**
  - Methane Conversion to Liquid Fuels and Chemicals
  - Natural Gas Leak Detection & Quantification
  - Unconventional Reservoir Characterization, Management, and Recovery Factors
  - Global Markets, Pricing, and Governance
    - Energy Poverty
    - Global Coal to Gas Fuel Switching
    - Integration with Renewables
    - LNG and Global Markets

- **Seed Grants (Pre-Focus Area)**
  - Gas separation and membrane technology ($H_2S$ and $CO_2$)
  - MEMS and gas sensors
  - Methanol in energy systems
Key Subsurface Industrial Affiliates Programs – School of Earth, Energy, and Environmental Sciences

- Basin and Petroleum System Modeling
- Stanford Center for Carbon Storage
- Stanford Center for Reservoir Forecasting
- Smart Fields Consortium
- Stanford Center for Induced and Triggered Seismicity
- Stanford Exploration Project
- Stanford Natural Gas Initiative
- Stanford Project on Deepwater Depositional Systems
- Stanford Rock Physics and Borehole Project
- SUPRI-A (EOR and Unconventional Resources)
- SUPRI-B (Reservoir Simulation)
- SUPRI-D (Innovation in Well Testing)
Natural Gas Initiative Members and Supporters

A collaboration of more than 40 research groups at Stanford drawn from engineering, science, policy, politics, and business disciplines and a consortium of industry partners to generate the knowledge needed to use natural gas to its greatest social, economic, and environmental benefit

**Sustaining Members**
Schlumberger    Shell

**Corporate and Contributing Members**
American Petroleum Institute    Aramco Services    Azimuth Capital
Baker Hughes, a GE Company    Gas Technology Institute    IHS Markit
NW Innovation Works
Pacific Gas and Electric
Seven Generations Energy    Southern California Gas    Total
XTO Energy (ExxonMobil)    Zorlu Energy Group

**Basic Members and Supporters**
Gulfport Energy    Leede Operating Company    Anadarko Petroleum
Pritzker Innovation Fund    Mitchell Foundation

☆ Newest members