
Prudent Development

**Realizing the Potential of North America's Abundant
Natural Gas and Oil Resources**

**A Comprehensive Assessment to 2035
with Views through 2050**

**COGA EnGen
May 10, 2012**

National Petroleum Council (NPC)

- Origins** Continuation of WWII government / industry cooperation
- Purpose** Sole purpose of NPC is to advise U.S. Secretary of Energy and Executive Branch by conducting studies at their request
- Organization** A Federally chartered, self-funded Advisory Committee; Not an advocacy group, does not lobby
- Membership** Broad and balanced. Approximately 200 members from all segments of the oil and gas industries and many outside interests
- Study Participants** Diverse interests and expertise relating to the topic being addressed
- Study Reports** All NPC advice is provided in reports approved by its members and is available to the public. Reports can be viewed and downloaded at no cost from the NPC website – www.npc.org

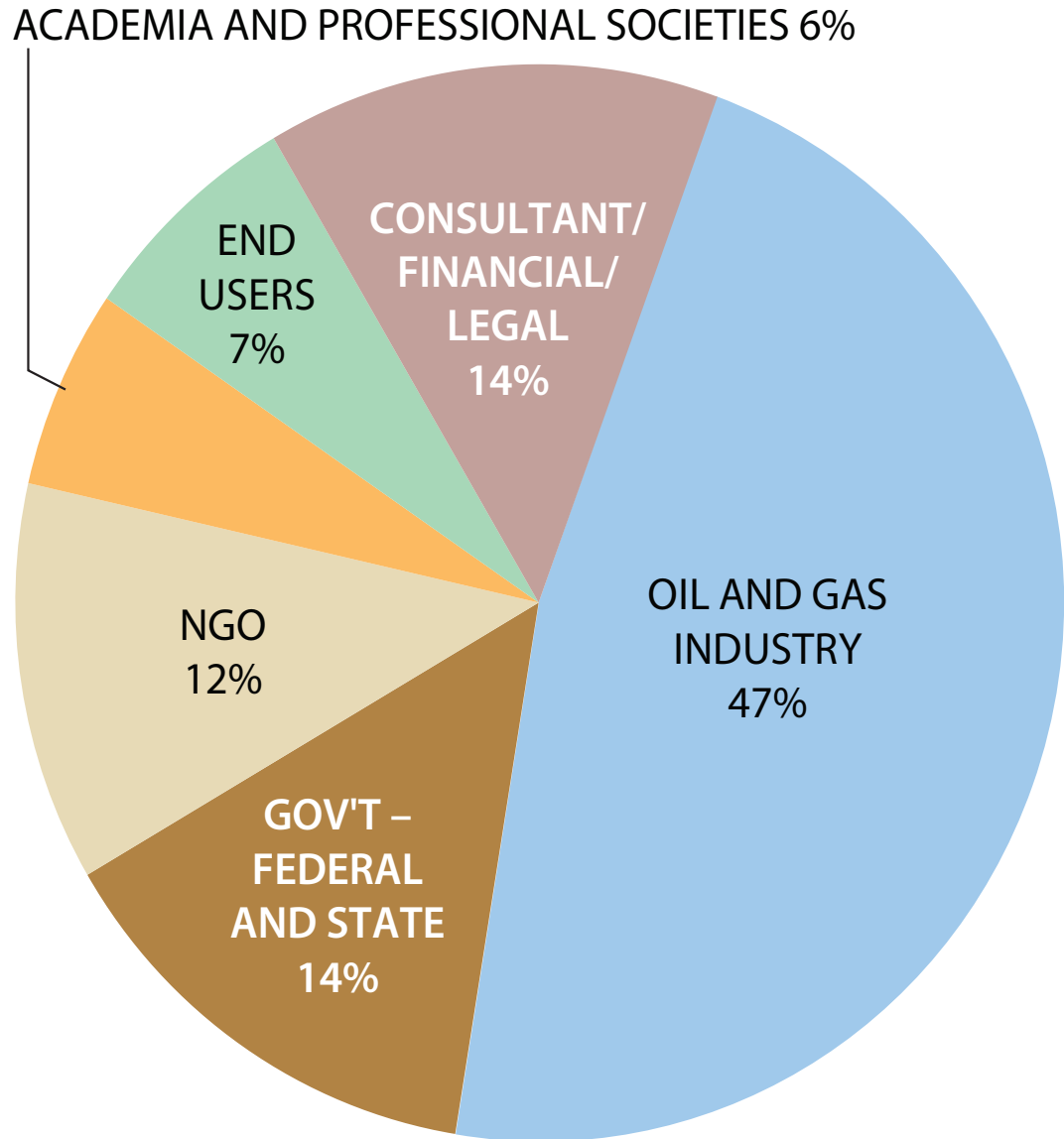
Prudent Development Study Objectives

- **Assess the N. American resource base – natural gas and oil**
 - Conventional
 - Unconventional
- **Describe the role of technology**
 - Environmental
 - Operational
- **Assess N. American supply and demand**
 - Through 2035
 - With a view to 2050
- **Identify the potential role of natural gas to lower emissions**
- **Meet national objectives: economic, environmental, security**

Diverse Study Participation

**Study Committee,
CSC,
Task Groups,
Subgroups**

**Over
400
Participants**

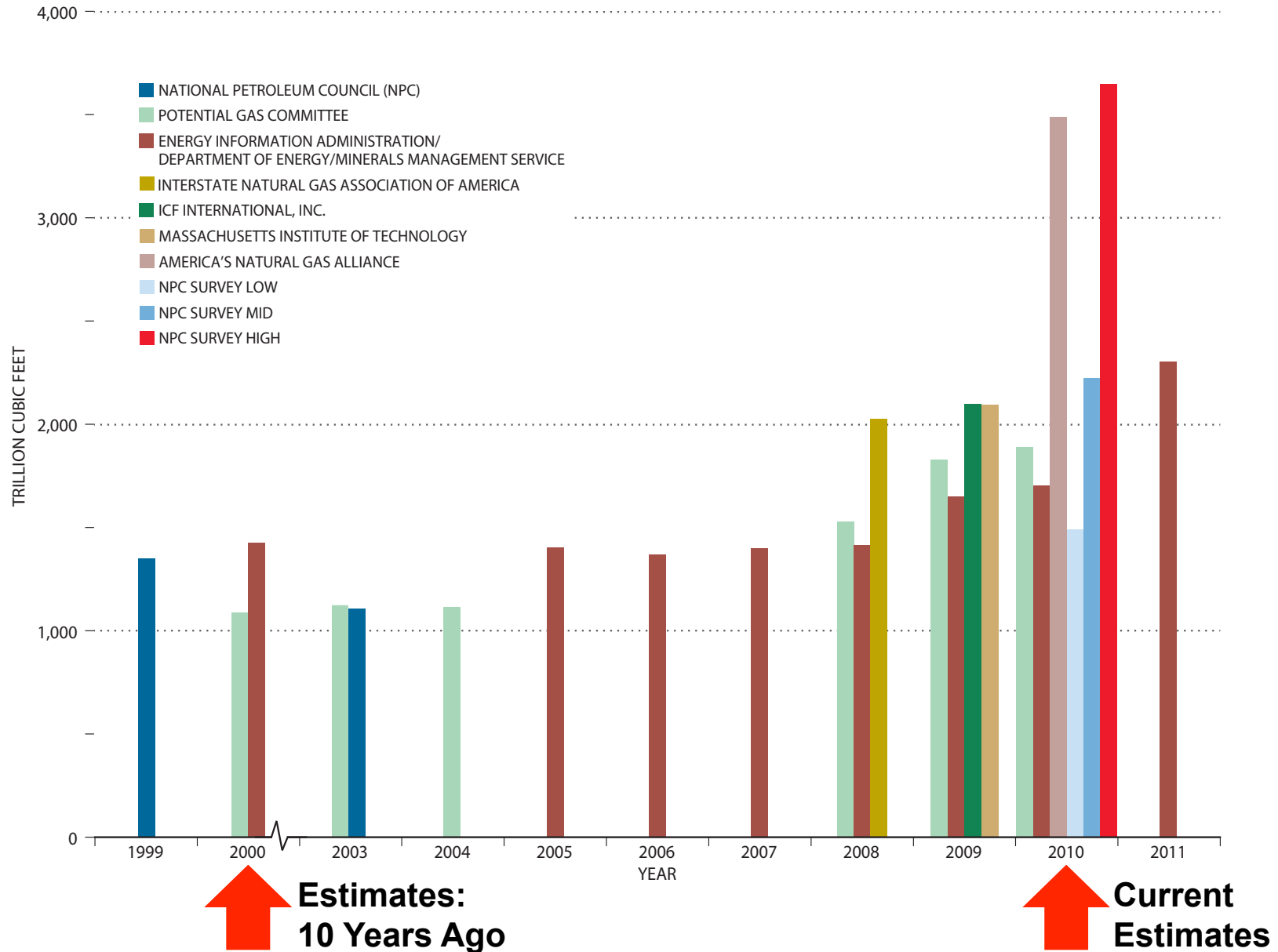


Four Major Findings

- **First, the potential supply of North American natural gas is far bigger than was thought even a few years ago**
- **Second – and perhaps surprising to many – America’s oil resources are also proving to be much larger than previously thought**
- **Third, we need these natural gas and oil resources even as efficiency reduces energy demand and alternatives become more economically available on a large scale**
- **Fourth, realizing the benefits of natural gas and oil depends on environmentally responsible development**

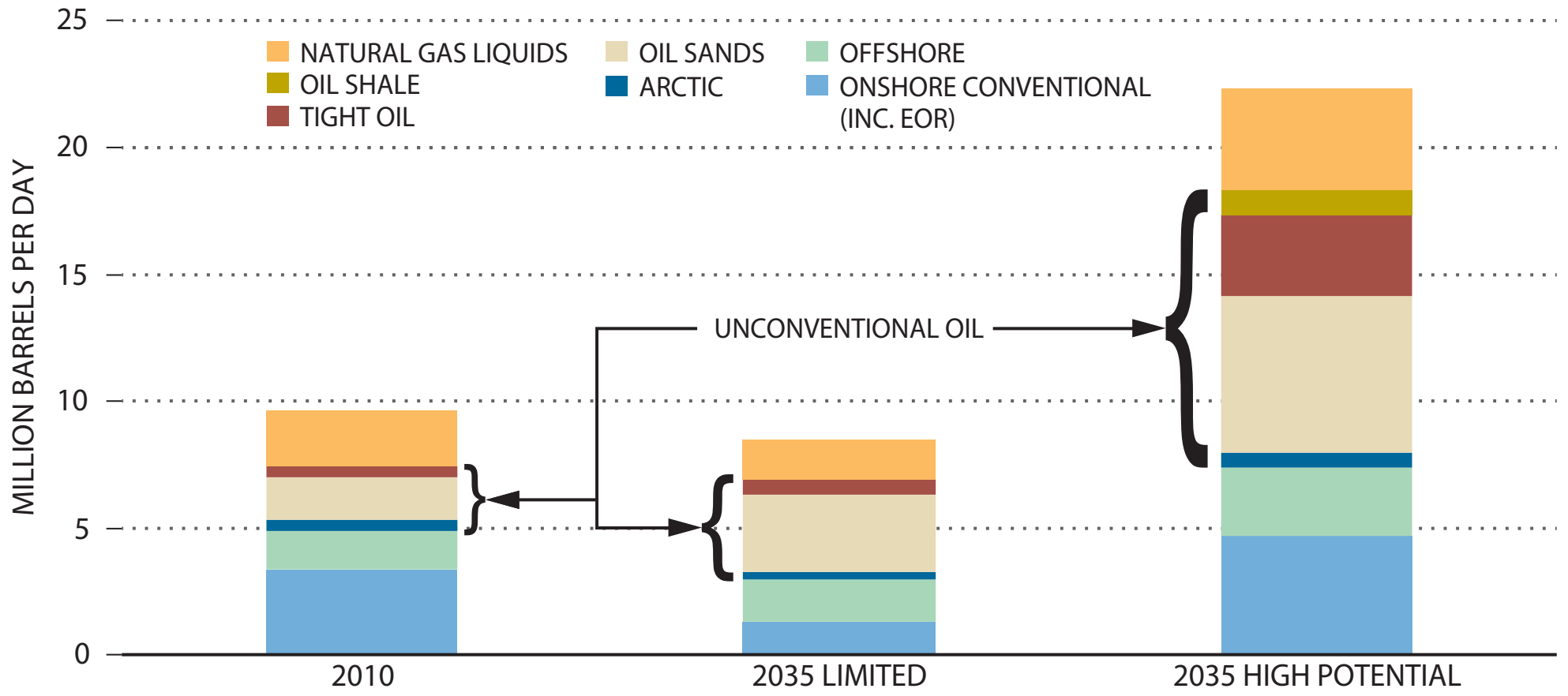
North American Natural Gas Resource Estimates have Transformed the Supply Outlook

Recent Estimates of Natural Gas Resources

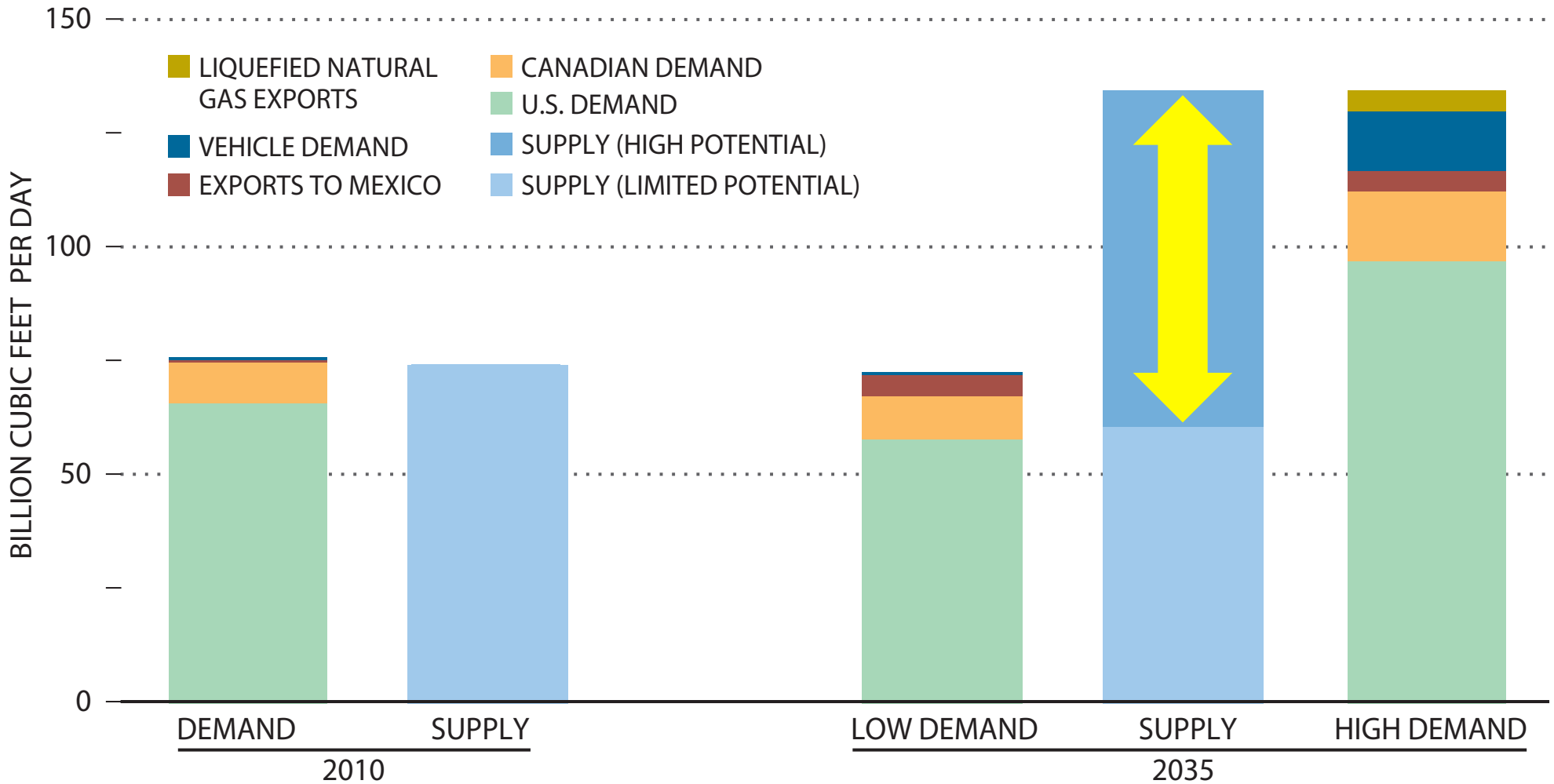


N.A. Oil Supply Has Upside Potential But Risk of Decline

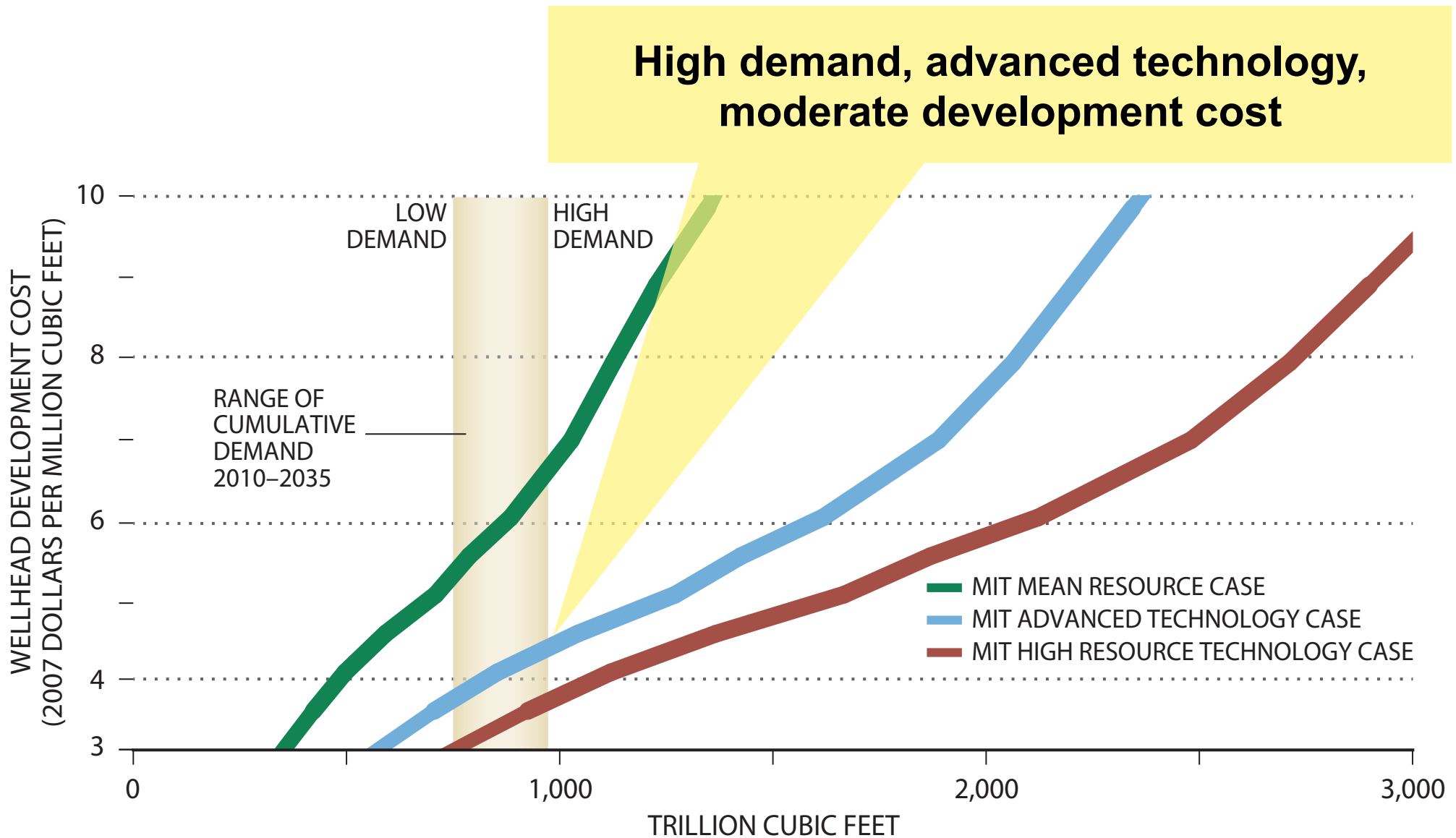
High production opportunities enabled by access frameworks



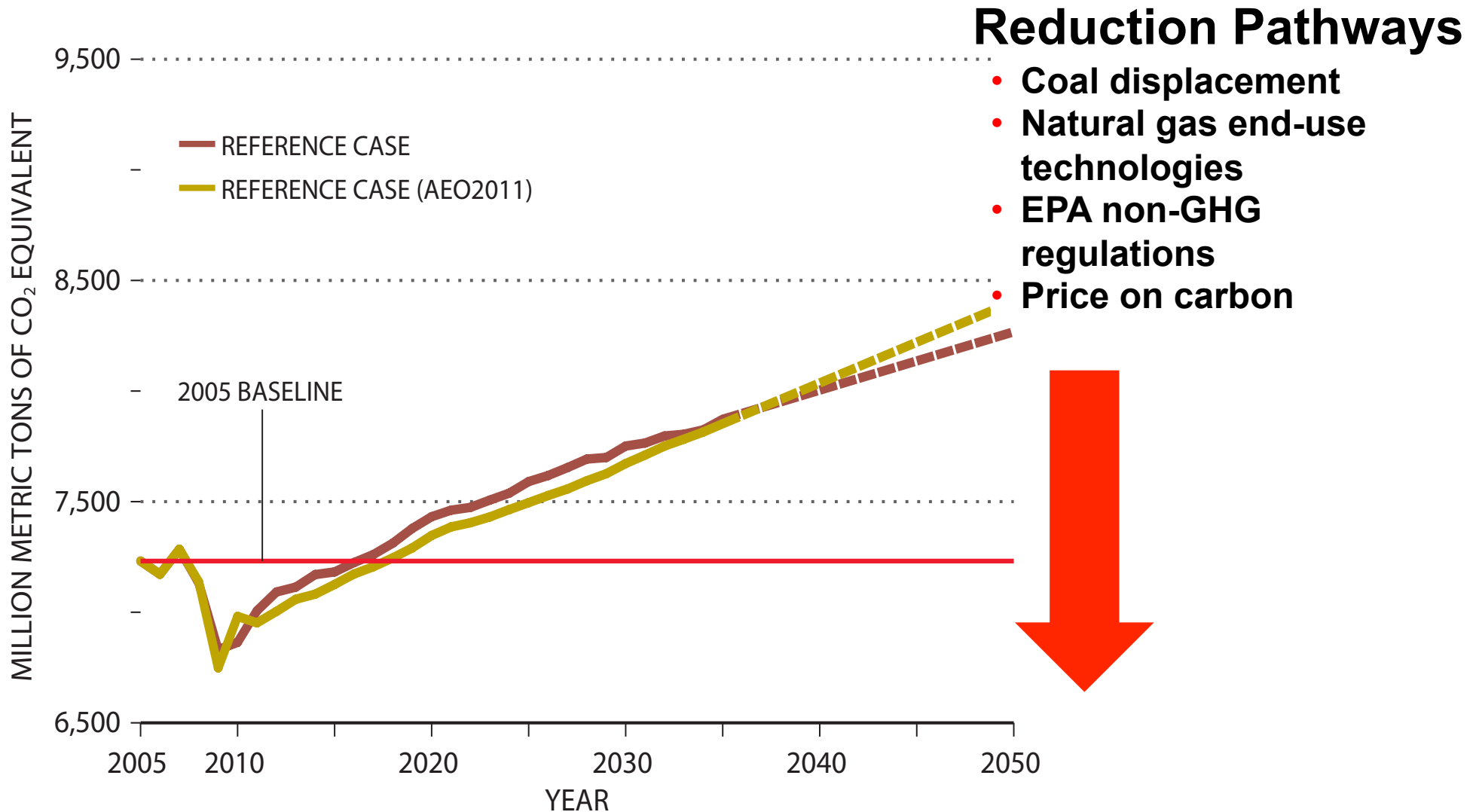
North American Natural Gas Can Meet Even the Highest Potential Demand



North American Natural Gas Resources Have Potential to Supply the Market for Decades

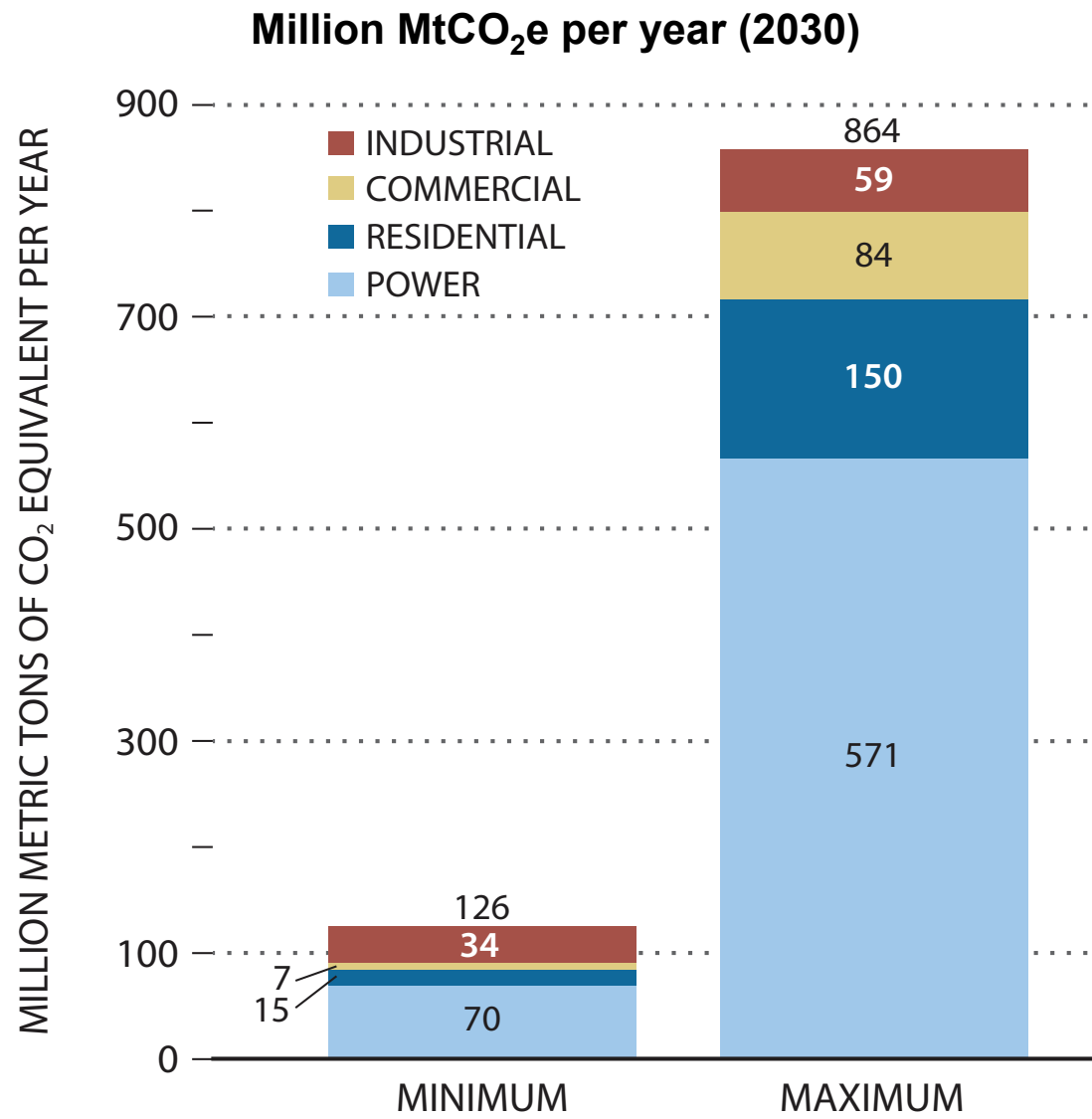


Greenhouse Gas Emissions



GHG Emissions Are Rising – But Natural Gas Can Be Part of the Solution to Help to Lower GHG Emissions

Range of Potential GHG Emissions Reductions in End-Use Sectors through Natural Gas Technologies



Prudent Development

In order for the U.S. to realize the benefits of substantial resource abundance, development must be done prudently.

Prudent development is:

- **Essential for public trust and confidence**
- **Required for continued and expanded access**
- **Fundamental for long term industry success**

Core Strategies and Recommendations

- **Support prudent natural gas and oil resource development and regulation**
- **Better reflect environmental impacts in markets and fuel/technology choices**
- **Enhance the efficient use of energy**
- **Enhance the regulation of markets**
- **Support the development of intellectual capital and a skilled workforce**

1. Support Prudent Development

- **Establish Regional Councils of Excellence to share effective environmental, health, and safety practices**
- **Adopt policies for more effective regulation of natural gas and oil reduction and operations**
- **Commit to and carry out community engagement**
- **Measure and reduce methane emissions**
- **By supporting prudent development, provide access to resources**

2. Better Reflect Environmental Impacts in Markets & Choices

- Develop and use tools to better analyze and compare the full environmental impacts of fuels and technologies**
- Consider options for internalizing the cost of carbon impacts into fuel prices**
- Keep open technology options for reducing GHG emissions from gas in the long run**

3. Enhance the Efficient Use of Energy

- **Encourage mechanisms to support greater adoption of energy efficiency in buildings and appliances**
- **Remove barriers to utilities' promotion of efficiency and combined heat and power**

4. Enhance the Regulation of Markets

- **Allow utilities to effectively manage their natural gas price risk**
- **Harmonize interactions between natural gas and power markets**
- **Provide greater certainty in environmental regulations affecting the power sector**

5. Support Needed Talent and Know-How

- **Support intellectual capital and a skilled workforce:**
 - Increase the Number of Qualified Natural Gas and Oil Professionals

Summary

- **We have enormous oil and gas resources – of potential value and importance to the nation.**
- **There's enough supply to support national objectives – including our economic, environmental and security interests.**
- **The lynchpin to realizing these benefits is prudent development – We have to do this right.**
- **And our recommendations help us move toward these outcomes.**