

A Natural (Gas) Evolution:

Law and Policy Challenges and Opportunities
in the Shale Gas Era"

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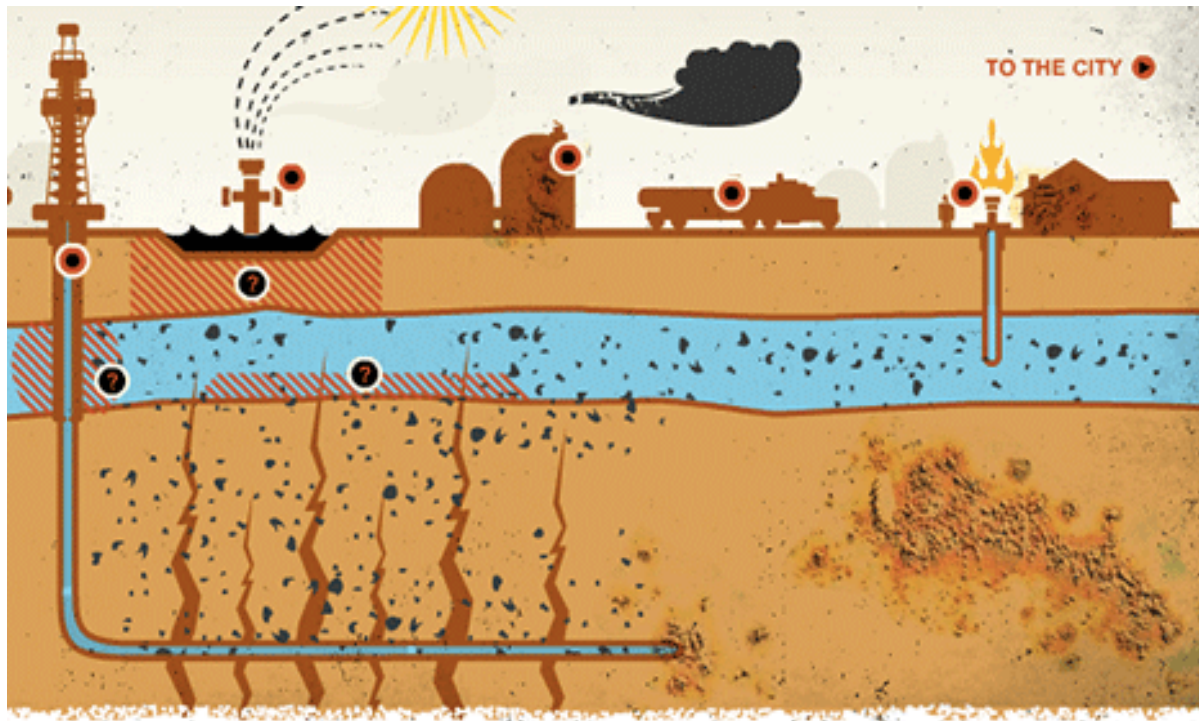
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Overview: Key Challenges and Opportunities

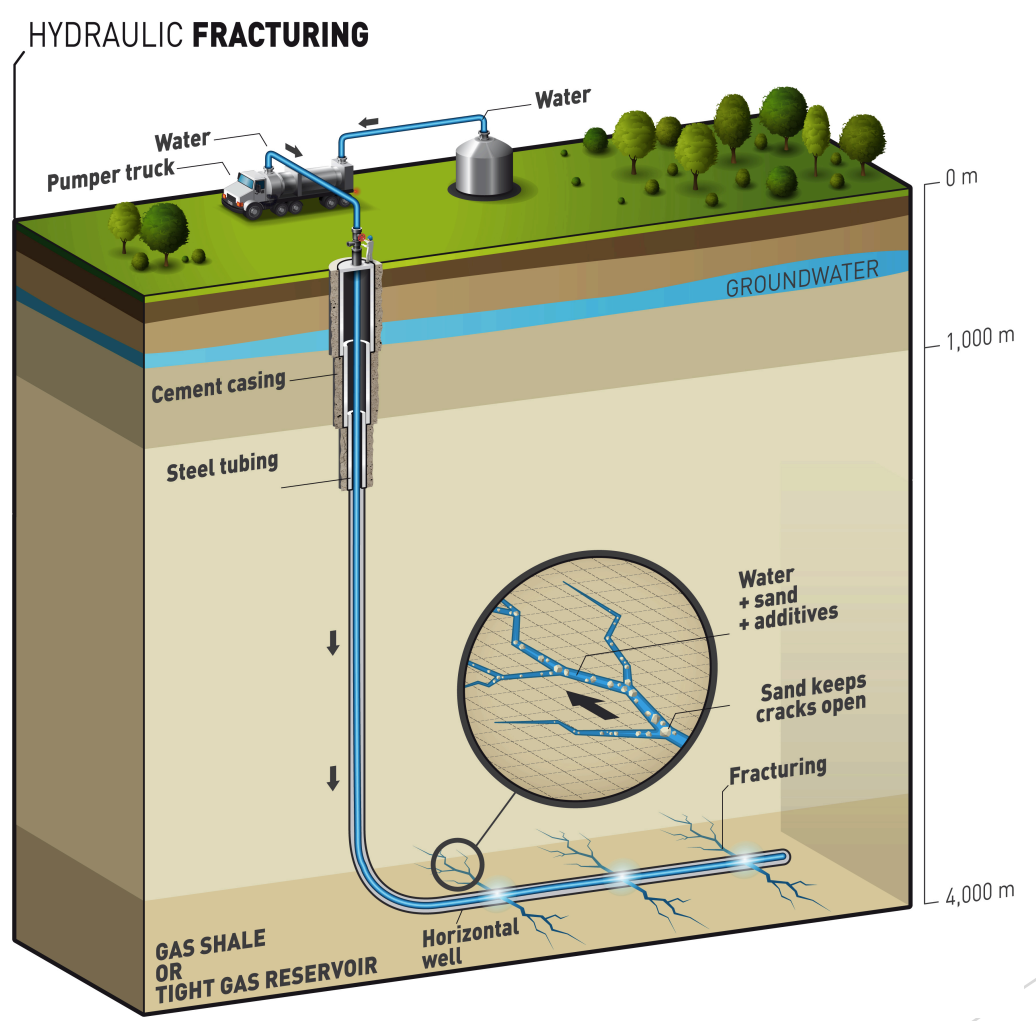
- ▶ Seek common ground – stop talking past each other
- ▶ Natural Gas is not longer and either/or proposition, but developing and using resources are more complex than they might seem
- ▶ Preparing for progress & managing expectations are both critical



One View



A Different View



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Key Policy Points

- ▶ **If it's not environmentally sustainable, it's not economically sustainable**
- ▶ **Energy Policy and Environmental Policy are generally the same, whether we acknowledge it or not**
- ▶ **Economic, Environmental, and Social Issues all matter**
- ▶ **We must avoid seeking the perfect when the good is the option before us**





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USA at Night



Location Matters: How do we use our resources?



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Electricity Generation Is No Longer Competition

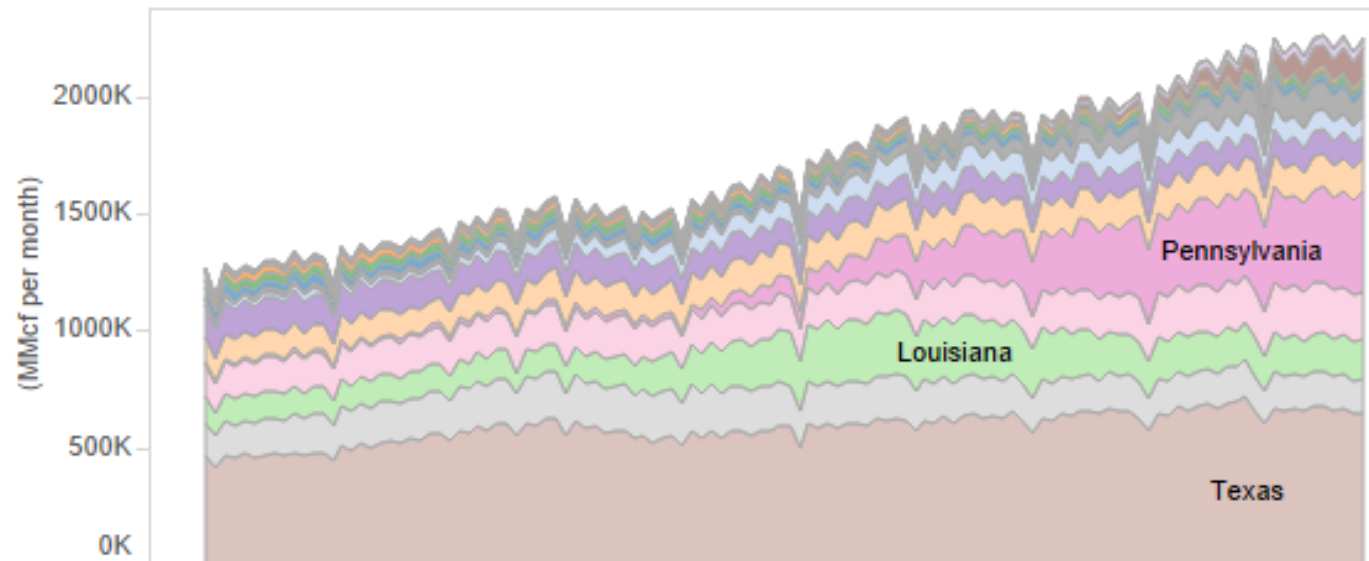
Annual Total	Coal	Natural Gas	Renewables
2006	48.97%	20.09%	2.36%
2007	48.51%	21.57%	2.52%
2008	48.21%	21.43%	3.04%
2009	44.45%	23.31%	3.63%
2010	44.78%	23.94%	4.02%
2011	42.28%	24.72%	4.69%
2012	37.40%	30.29%	5.29%
2013	38.89%	27.66%	6.01%
2014	38.64%	27.52%	6.39%
2015	33.18%	32.66%	6.65%

U.S. Electricity Generation, by fuel

Coal begins modestly in 2008 and drops from 48.21% to 33.18% in 2015. Coal lost 15.03% of the market, while natural gas increased 11.23%. Renewable sources (not including solar and hydropower) increased 3.61% to 6.65% overall. That means that natural gas and renewables picked up 14.84% of the market -- or 98.7% of the market lost by coal.

Production Continues, Despite Prices

Natural gas production



Creating Better Standards and Market Support

- ▶ Economic:
 - ▶ Create clearly defined market goals
 - ▶ Focus on market policies for the needs of the market, instead of market participants
- ▶ Environmental:
 - ▶ Expect/Require/Allow Industry Leaders to Lead - See, e.g., API standards in WV
- ▶ Overall:
 - ▶ Manage expectations and account for collateral damage (social, environmental, economic)

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Getting ready for exploration and production

- ▶ People don't tend to play the game when they don't know the rules
- ▶ Reward sound practices, punish wasteful practices
- ▶ Unmonitored/unenforced rules aren't really rules
- ▶ Use incentives to incentivize (additionality issue)
- ▶ Anticipate and prepare for market responses (e.g., costs will fluctuate)

