

Penn State Law Marcellus Lecture Series

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How Pennsylvania Fits Into The Energy Sector

- Domestically
 - “Marcellus” shale gas producers to benefit most in U.S.-Oil & Gas Journal, April 7, 2014 quoting Moody’s.
 - Production: 1.2. bcd – 2007; 20 bcd – 2020
 - “Most reserve additions... unconventional resources... including Marcellus...” AGA, April 7, 2014

How Pennsylvania Fits Into The Energy Sector

- Internationally
 - U.S. net energy imports decline 19% - from 2012-2013
 - “Gas – The Weapon of Choice”
 - “Birol warns against exuberance”
 - China – 2013 – 7 bcd – hopes for 230 bcd by 2015.

What Lessons Can Be Learned from Pennsylvania?

- Economic Development
- Community Development
- Social License to Operate
- Regulatory Framework
- Institutional Support

Effort of LNG Permitting

- **Two-step permitting process**
 - USDOE
 - FERC
 - Six new permits issued
- **Free Trade Agreement nations vs. non Free Trade Agreement nations**
- **International Competition**
 - Australia
 - Qatar
 - Canada

Effort of LNG Permitting

- **Domestic Opposition**
 - Public natural gas distribution companies
 - Chemical industry
 - Manufacturers

Controversies

- **Fracking**
 - Water contamination
 - Wells/ reservoirs
 - Treated water
- **Infrastructure**
 - Pipelines
 - Gathering facilities
 - Transportation/traffic
 - Housing
 - Support facilities

Controversies

- **NIMBY** – **N**ot **I**n **M**y **B**ackyard
- **BANANA** – **B**uild **A**bsolutely **N**othing **A**nwhere **N**or **A**nytime
- **NOPE** – **N**ot **O**n **P**lanet **E**arth
- **DADA** – **D**esign, **A**nnounce, **D**efend, **A**bandon

[Lancaster Against Pipeline]

Controversies

- **Electric Production**
 - End-Use Demand
 - Over Reliance
 - Deliverability/Reliability
 - Match Power & Gas Trading Days
 - Carbon Capture & Storage
- **Fed-curb methane emissions**
- **Compressor station noise**

Controversies

- **Transportation**
 - Personal vehicles
 - Heavy duty long-haul trucks
 - Rail
 - Shipping
 - Economics/convenience
- **Industrial Uses**
- **Worker Safety**

What Does the Future Hold? The Known Unknowns:

- Economic growth
- Climate Change, energy/environmental policy
- Supply/demand balance domestically and globally
- Technology:
 - Producing technology
 - Alternative technologies