Potential Implications of Federal Oil and Natural Gas Methane Regulations

2016 Interstate Oil and Gas Compact Commission
• Visible shift from regulation to prohibition of fossil energy development
  • More extreme = more contributions
• Natural gas targeted – treated like coal
• A significant and troubling shift in the national debate on energy
  • Issues are no longer cast in the context of how to environmentally manage production
  • Issue becomes whether permits allow production or whether the regulations are so restrictive or costly that they prevent production
2012 – EPA finalizes Subpart OOOO – a New Source Performance Standard (NSPS) regulating Volatile Organic Compound (VOC) from hydraulically fractured natural gas wells


January 2015, the Obama Administration announced plans to regulate methane in the E&P sector – using both EPA and BLM.

September 2015, EPA proposed a package of VOC and methane regulations:

• NSPS expansion – Subpart OOOOa
• Issuance of Control Technique Guidelines (CTGs) for ozone non-attainment areas
• New aggregation proposal
• Tribal lands new source permitting proposal
December 2015 Comments submitted on regulatory proposals
  - Challenged need and cost effectiveness of proposed regulations
  - Challenged new source fugitive emissions (Leak Detection and Repair – LDAR) program
  - Challenged application of technologies to existing sources in ozone nonattainment areas
  - Challenged expansion of sources subject to permitting requirements

January 2016 BLM proposed venting and flaring regulations that would manage methane emissions on new and existing production facilities
March 2016 Administration announced intent to develop nationwide existing source methane regulations
   - EPA initiating an Information Collection Request (ICR)
   - Reached out to EPA to educate about industry and limit scope and cost of ICR

April 2016 EPA revises petroleum and natural gas systems emissions in Green House Gases Inventory (GHGI)
   - Calculates higher emissions of methane based on questionable methods
   - Environmentalists use revision to call for more regulation
Methane Regulation Timeline

- April 2016 Comments submitted on BLM Venting and Flaring Regulations
- Summer 2016
  - EPA Subpart OOOOa regulations finalized
  - EPA CTG completed and sent to OIRA for final review
  - BLM Venting and Flaring Regulations completed and sent to OIRA for final review
  - EPA ICR on nationwide existing source emissions released for comment
Fall-Winter 2016
- EPA ICR submitted to final review at OIRA/OMB
- EPA ICR will be sent to companies for completion
  - Part 1 – general production information sent to all producers with 30 day compliance requirement
  - Part 2 – detailed questionnaire sent to about 2500 recipients with 120 day compliance requirement
- Initial compliance with EPA Subpart OOOOa required

2017
- EPA/BLM regulations implemented
- EPA nationwide existing source regulations developed and proposed
Primary Regulatory Elements

- Pneumatic Controllers
- Pneumatic Pumps
- Reduced Emissions Completions for hydraulically fractured oil and natural gas wells
- Storage vessel vapor recovery or emissions combustion
- Fugitive Emissions program

Fugitive Emissions program represents the most significant challenge

- Creates an enduring operating cost for each facility
- Cost effectiveness drops appreciably with declining production; cost
Fugitive Emissions program for marginal wells is prohibitively expensive

California example is illustrative

- Approximately 2900 wells; average production of 3.6 B/D; 580,324 inspections, 667 leaks found
- Using Leaker Emission Factors from Subpart W and assuming the leaks existed the entire quarter.
  - 142 leaking valves @ 13.9 MCF/qtr leaker factor = 1974 MCF.
  - 525 leaking connections @ 12.3 MCF/qtr leaker factor = 6457 MCF.
  - Total 8431 MCF
- Annual operating cost of LDAR equipment and crews only: $800,000
- Low cost compared to Subpart OOOOa requirements of semi-annual estimated cost of $1,599/well: cost=$4,600,000/year
  - Using a very conservative estimate $800,000/8431MCF = $95/MCF
  - At $1,599/well would be $4.6 million = $661/MCF
Targeting marginal wells is a primary initiative of the “Keep It in the Ground” environmental activists

- Demanded that Obama Administration remove a proposed exclusion for marginal wells in Subpart OOOOa regulations – It was done

EPA revisions to GHGI implies small source emissions have a larger share of national emissions

- EPA countered its own basis for defining which sources were required to report

Using specious studies to justify action on marginal wells

EPA used Environmental Defense Fund study to justify its action to remove...
- EDF uses data analysis tricks to create appearance that marginal wells are high emitters
- Uses a percentage of emissions to production rather than emissions
- Only shows data from the 70th percentile of sites
- Uses a logarithmic scale rather than a straightforward graph
- Using the EDF methods the smallest wells would be viewed as the worst emitters
- Looking at the same data using a direct graph of emission shows a very different picture
- Smaller wells = smaller emissions
- Even this data may overstate emissions since the data is taken over a few hours not a
Next regulatory steps will be critical for the future of America’s oil and natural gas marginal wells

- Subpart OOOOa imposes a permanent cost burden on new and modified hydraulically fractured wells that will make them uneconomic far earlier in their productive life

- BLM venting and flaring rule proposes costly fugitive emissions requirements on existing wells – including marginal wells – on federal lands

- EPA developing a nationwide existing source regulation where Keep It in the Ground environmentalists demand the application of a cost ineffective fugitive emissions requirement to marginal wells (as they have for the pending CTGs)

Taken together these requirements threaten the shut down of America’s marginal wells
Industry must respond to these initiatives aggressively

- Petitioning EPA to reconsider its decision to apply its Subpart OOOOa fugitive emissions requirements to marginal wells
  - Key issues will include EPA’s use of faulty EDF study as a basis for its action and the cost burden and ineffectiveness of its fugitive emissions program
- Preparing to respond to the BLM venting and flaring regulations
- Preparing to participate in the development of EPA’s Methane Regulation Response
Understanding marginal well emissions will be essential

- Generic emissions factors overstate emissions
- Studies of emissions have incidentally included marginal wells but have not fully assessed them

EPA does not understand that marginal wells will not have the capability to generate the same emissions as larger ones

- Emissions are driven by internal pressures forcing gas to leak
- An average marginal natural gas well of 22 mcfd will not generate the same internal pressures as a 5000 mcfd well
- Industry must demonstrate the distinctions between difference sized wells
IPAA connecting with RPSEA to develop a protocol for sampling and analyzing marginal well emissions
- Protocol would develop methodologies that EPA supports to determine fugitive emissions from marginal well operations
- Industry will need to provide facilities to allow testing

Fugitive emissions program costs need further definition
- EPA’s analysis of its fugitive emissions program is well below industry experience
- EPA’s actions are based on both limited experience and highly suspect expectations of emissions reductions
- Industry experience with state fugitive emissions programs:
  - Once leaks are corrected, they do not reoccur quickly
  - Impact is not measurable as a production increase
It will be an intense confrontation

- Keep It in the Ground environmentalists will use any exaggerated claim to target existing oil and natural gas production – marginal wells represent about 70 percent of American wells

Failure will be a tragic national energy consequence

- The burden imposed on marginal wells by a Subpart OOOOa fugitive emissions program – and possibly by imposing retrofitting of pneumatic controllers and pumps – can make these wells uneconomic – and subject to plugging – within a few years after the nationwide regulations are imposed

- A loss of 10-15 percent of US oil production and 12-15 percent of US natural gas production – IOGCC estimates a loss of $20 billion annually to the US economy