Update on Action Plan to Improve Oil & Gas Emissions Inventories

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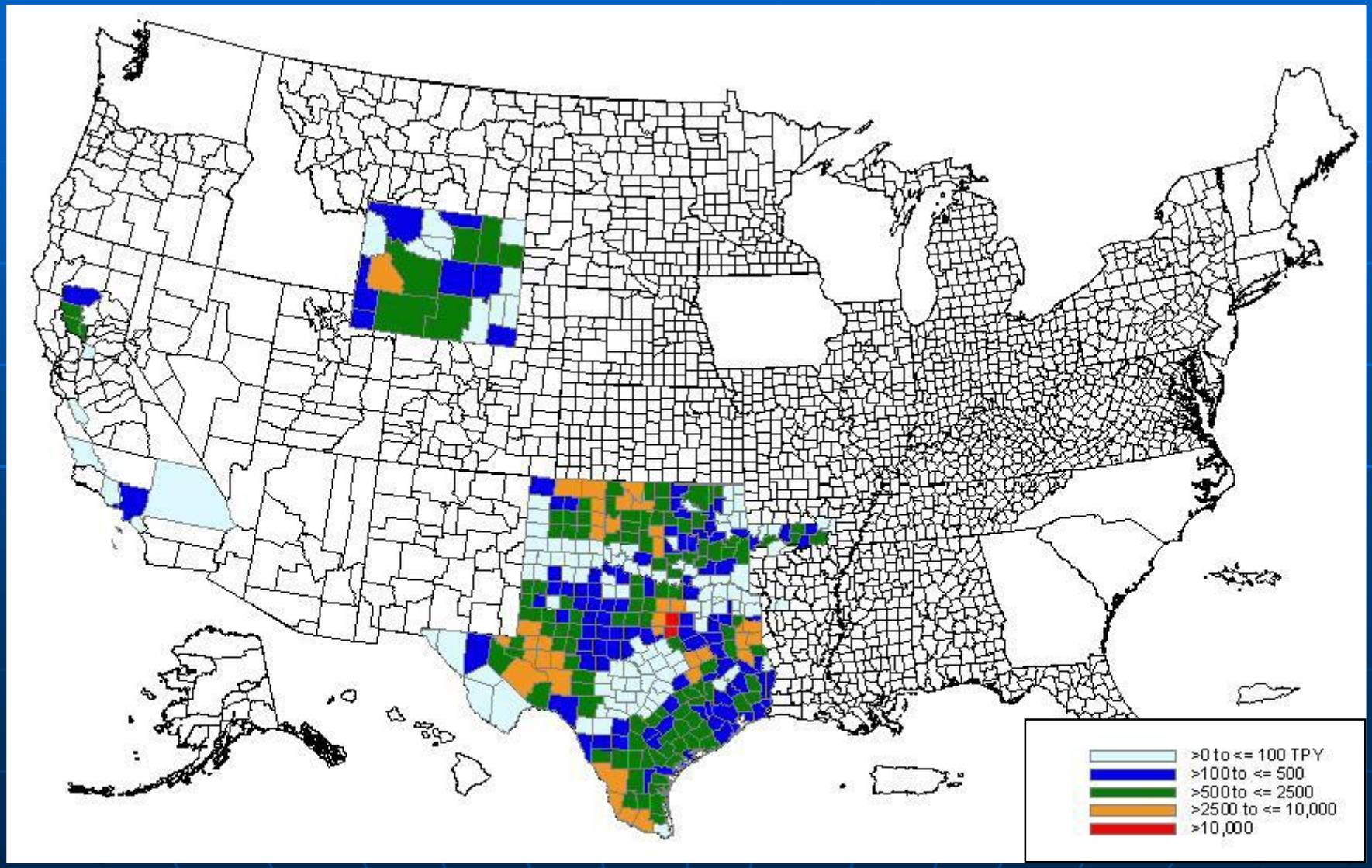
Oil & Gas Emissions 2008 NEI



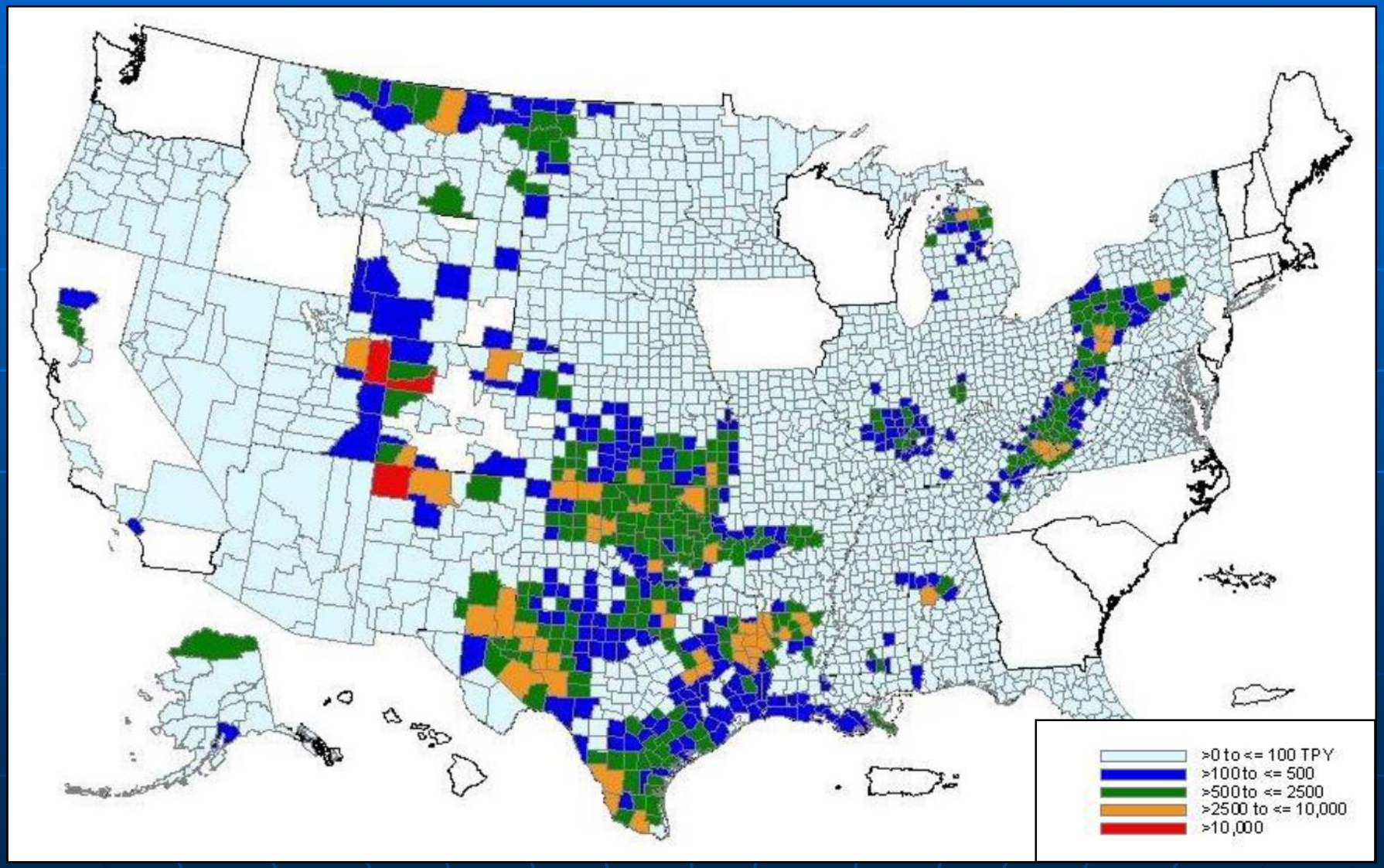
U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

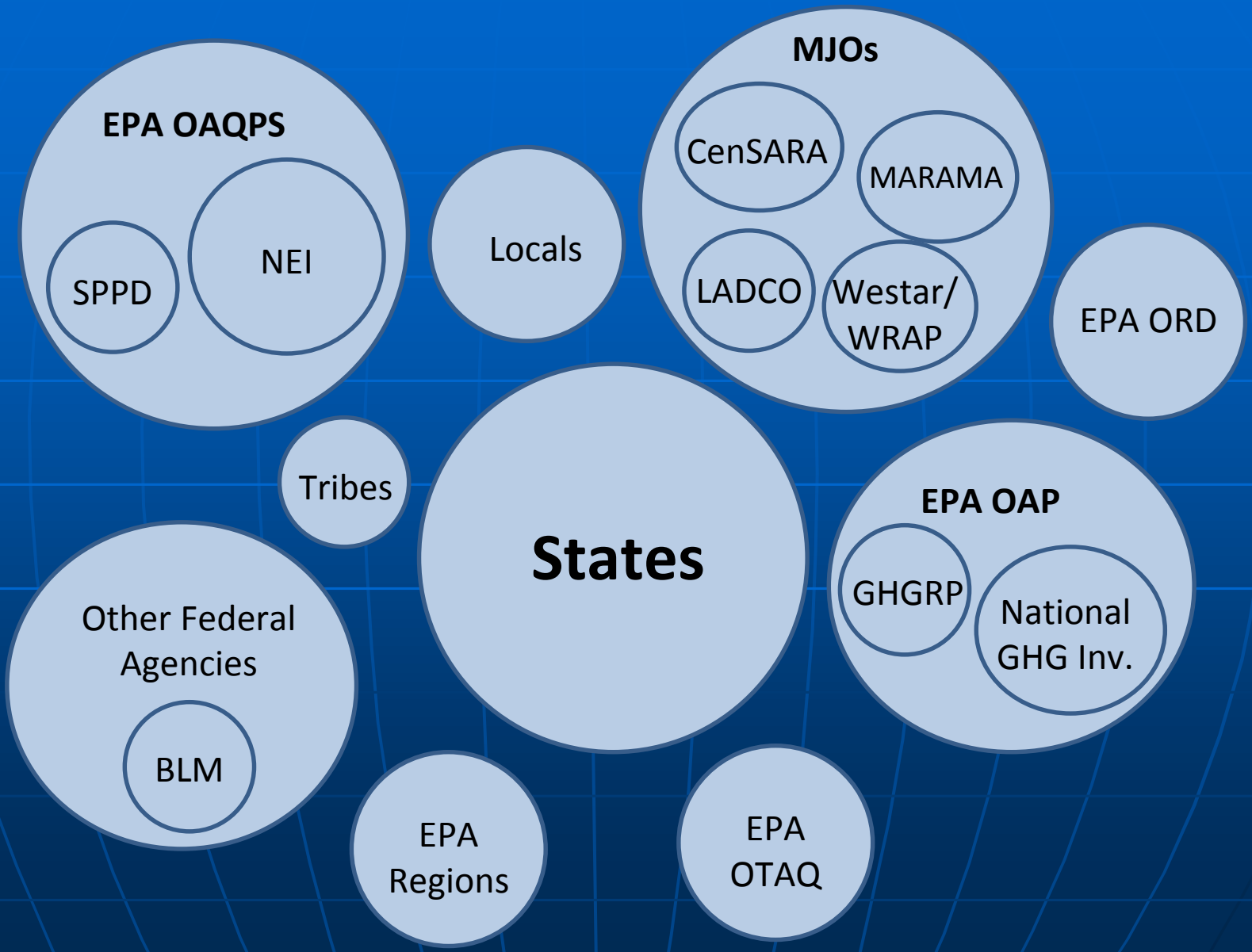
EPA Needs to Improve Air Emissions Data for the Oil and Natural Gas Production Sector

Report No. 13-P-0161 February 20, 2013

Oil & Gas Emissions 2011 NEI



Multiple Agencies



National Oil & Gas Emissions Committee

- Outgrowth from ERTAC area emissions process
- Meeting since late 2011
- Regular participation by EPA Offices, States & MJOs
- Technical advice as National Oil & Gas Area Emissions Tool was developed
- Share expertise and information on how to characterize and manage oil and gas emissions

EPA / States Oil & Gas Emissions Summit

- Held at EPA Offices, Research Triangle Park, NC November 4-5, 2014
- Attendees included staff & managers from:
  - Multiple EPA offices
  - States with a range of experience inventorying and regulating oil & gas emissions
- Presentations at http://www.epa.gov/ttn/chief/oilandgassummit/

Purposes of the Summit

- Share information on federal and state work on oil and gas emissions and discuss the relationship between high quality inventories, informed policy decisions, and effective regulations.
- Enhance communication and collaboration among state and federal regulatory agencies with a goal to better understand program processes, data collected, and regulatory and program limitations.
- Discuss and identify steps to further improve understanding of air impacts of oil and gas development.

Top Ranked Topics of Interest

Based on pre-summit survey of attendees

- Derive better activity and emissions data from industry
- Achieve a better understanding of data gaps
- Update outdated or inaccurate activity data and/or emission factors
- Realistically represent “fat-tail” upstream sources

Theme	Topic	Ranking
Data	**Deriving better activity and emissions data from Industry**	**1**
Emission Inventories	**Gaps in understanding oil and gas emissions**	**2**
Emission Inventories	**Outdated or inaccurate activity data and/or emission factors**	**3**
Emission Inventories	**Upstream sources with extreme emissions rates - “fat-tails”**	**4**
Emission Inventories	**“Top-down” versus “Bottom-up” differences**	**5**
Emission Inventories	**Range and variation of operational practices and associated emissions**	**6**
Communications	**Improving data sharing among and between federal and state agencies**	**7**
Regulations	**Representativeness of the data and assumptions used in national rulemakings**	**8**
Communications	**Keeping up with rapidly changing industry practices**	**9**
Data	**Available data resources – e.g.: EIA, HPDI, IHS EnerDeq**	**10**

Summit Action Plan – Key Goals

- Review how mobile emissions are characterized
- Evaluate crosswalks between the Tool and the National GHG Inventory
- Encourage mining permits for data
- Prioritize Tool improvements for 2014 NEI
- Develop an information repository
- Use GHGRP calculations data to improve the Tool
- Work with industry to better understand current work practices and improve activity data
- Characterize heterogeneity in gas compositions
- Build capacity, reach out to states

Mobile Emissions

- Review how emissions from on-road and non-road engines at production sites are currently characterized
- OTAQ and OAQPS agreed that for the 2011 NEI, Tool estimates will be used for drill-site equipment
- How to account for construction and fluid-hauling traffic to and from well pads and seismology rigs?
  - Can be prominent in rural areas
- Next steps: Establish what vehicle and traffic surveys have been completed or are planned, evaluate development of emissions equations for this source
- Demonstrating reductions from nonroad engine fleet turnover may be important for future attainment plans

Why Different GHG Numbers?

- Evaluate differences between the Tool and the National GHG Inventory
- OAQPS and OAP identified several issues:
  - Well counts
  - Liquids unloading
  - Equipment Leaks
  - Pneumatic Controllers
- Recently reported GHGRP calculations data will help improve both estimates

Mining Permit Data

- Is data "down the hall" that can be used to improve inventories?
- Translate permit information in way that it can be mapped and summarized for use in inventories
- Example: Tribal Minor New Source Review Registrations
  - Work by Environ and by Region 8
- Next steps – develop a protocol to help states

Prioritize Tool Improvements

- States provided feedback on list of priorities
- Key improvements (April 2015 rollout)
  - Form development
  - Breakout conventional/unconventional wells
  - Module to better handle gas composition data
- Funds for future work unknown but likely to be limited

O&G Information Repository

- Develop an information repository for:
  - Regulatory programs
  - Training materials
  - Funding opportunities
  - Technical information
  - Special project reports
- Working with CIRA at CSU to develop a web site similar to the 3-State Data Warehouse
- Links and disclaimers as appropriate
- Rollout aimed for June 2015

Leverage GHGRP Data

- Use GHGRP activity and emissions calculations data to improve estimates for the 2014 NEI
- Companies had to report detailed supporting information for 2011 – 2014 by March 31, 2015 to the GHGRP
- Could potentially improve tool accuracy
- OAP to make available to OAQPS and states as soon as possible later this summer
- Data publically available in Fall 2015

Work with Industry

- Work with industry to better understand current work practices and improve activity data
- Identify best mechanisms to do this:
  - Individual operators
  - National organizations
  - Local organizations
- Panel discussion today
- How can industry help improve the tool?

Improve Gas Compositions

- Characterize spatial heterogeneity in gas compositions between and across basins
  - Key recommendation in API's review of the Tool
- Recommend processes to obtain and map speciated data for each basin
- Develop a template to collect data
- Build on work being done by Region 8
- Expect to focus on this work in Summer 2015

Build Capacity

- Establish process for states with minimal resource capacity to be able to receive "one-on-one" assistance for 2014 NEI work
- Help them identify largest sources with most potential for improvement
- EPA Regional Office O&G contacts identified for most regions
- Make their states aware of resources available through the National Oil & Gas Emissions Committee

Oil & Gas Emissions in the 2014 NEI

- States can't rely on defaults or 2011 numbers
- Limited resources -> focus on largest sources
- More granular, spatially accurate data -> more representative emission estimates
- Execution of the Summit Action Plan will lead to substantial improvements
- But what are the next steps beyond the 2014 NEI?

More Complete, Integrated Data

- Lower/remove barriers to unify all O&G data
- States, EPA & others can easily access same levels of complete and representative data at the formation level in each basin
- Tie in other information sources more directly – industry surveys and initiatives, BLM, EIA, O&G Commission data, etc.
- Account for super emitters vs. “regular” emissions
- Account for differences in the midstream “plumbing” of basins

Projecting Future O&G Emissions

- Develop defensible methods for agencies to use for air quality planning and management
- At the formation level in each basin, across exploration & production
- With respect to current and changing future practices integrate:
  - Existing reservoir decline curves vs. new formations & production methods
  - Expectations for future production
  - Commodity prices
  - Commodity distribution and waste/by-product mgmt. systems
  - Episodic and regular practices
  - Evolution in source type distributions and regulations

National Oil & Gas Emissions Committee

- Participants from EPA Offices, MJO's, States, Locals
- Calls are at 2 PM Eastern on Second Thursday of each month
- Email mark.gibbs@deq.ok.gov to be added to the mailing list