



Maryland
Department of
the Environment

Update - Status of Non-Regulatory, Data-Driven Voluntary Agreements



Tad Aburn - Stakeholder Meeting # 5 - October 11, 2019



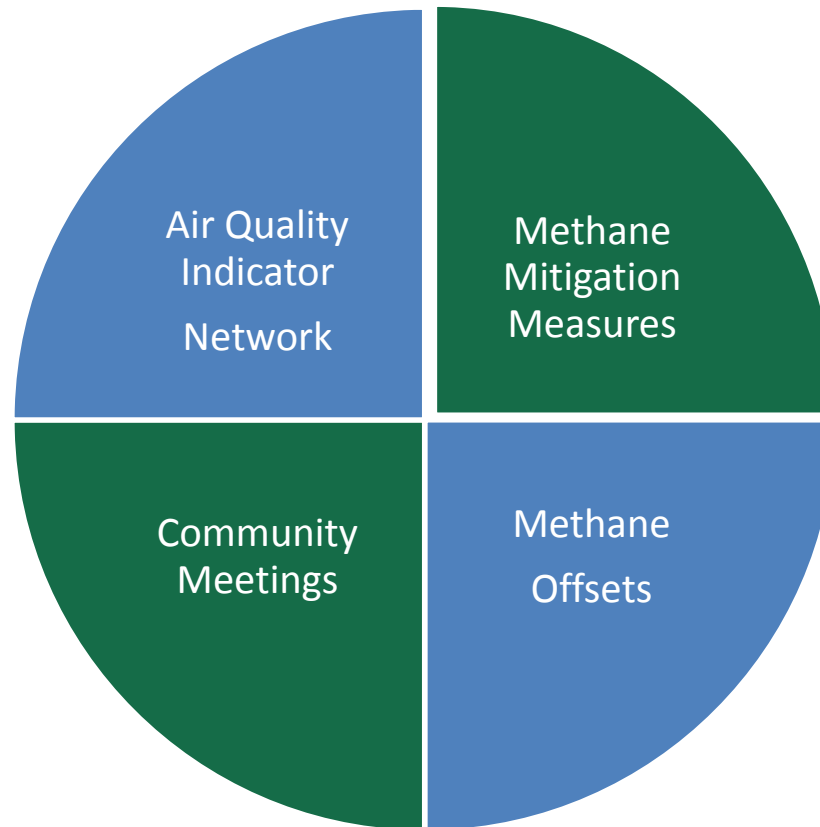
Non-Regulatory, Data-Driven, Voluntary Agreements

- MDE's methane initiative also contains a voluntary program designed to achieve additional methane emission reductions and to encourage collaboration between sources and communities
- Effort has moved slowly
 - Finalizing regulation has been a higher priority
- Based upon:
 - The rapid technological advances in methane detection and leak repair techniques and
 - Clear input from community groups with public health concerns over not having information on air pollutants beyond fence lines
- We have made significant progress, but do not have a draft template for the non-regulatory, data-driven voluntary agreement that was discussed in earlier meetings



Elements to be Included in Voluntary Agreements

Non-Regulatory, Data Driven Voluntary Agreements
Emerging and Non-Traditional Reduction Opportunities





Air Quality Indicator Network

- Companies to work with community to develop an air quality measurement network
 - Focused primarily on other air pollutants ... fine particulate, nitrogen dioxide, etc. ... not methane
 - Expected to focus on low-cost sensors
- Major comments from communities about air quality and public health protection around facilities
- Expectation is that emissions from well run facilities will not result in unhealthy levels of air pollution off site





Recent Experience with Air Quality Measurements Around Natural Gas Facilities

- In December of 2015, the TRANSCO facility in MD installed an air quality monitoring trailer on the property to measure criteria air pollutants
- The Williams TRANSCO transmission pipeline runs from Texas to NY, and the Williams TRANSCO Station 190 is located in Ellicott City in Howard County
- TRANSCO Station 190 started operating in 1951. This Station has had various upgrades to incorporate emission reduction improvements
- The air monitoring station was installed as part of a Federal Energy Regulatory Commission (FERC) environmental impact analysis requirement for the transmission pipeline



The TRANSCO Air Monitoring Site



The TRANSCO facility in MD has installed an air monitoring station within their facility



Air Pollutant Measurements At TRANSCO

- Measurements have shown low levels of air pollutants, well below the National Ambient Air Quality Standards (NAAQS) at the MD TRANSCO site*

| Air Pollutant | Maximum Concentration | Health Benchmark NAAQS |
|---|---|--|
| PM ₁₀ 24-hour | 105.8 µg/m ³ | 150 µg/m ³ |
| PM _{2.5} 24-hour (PM _{2.5} annual) | 17.7 µg/m ³ 7.3 µg/m ³ | 35 µg/m ³ 12 µg/m ³ |
| SO ₂ 1-hour | 6.9 ppb | 75 ppb |
| NO ₂ 1-hour | 35.3 ppb | 100 ppb |
| CO 8-hour | 0.90ppm | 9 ppm |
| O ₃ 8-hour | 67.1 ppb | 70 ppb |

*Concentration from 1/1/2018 – 9/30/2018 is shown. Data summary from ERM report dated 11/15/2018.



Low-Cost Air Quality Sensors

- MDE has been researching low-cost sensor technologies
- Currently available, relatively low cost & performance is constantly improving
- MDE would be happy to host a webinar & invite interested sensor providers to participate, provide input and answer questions

A Few Examples of Companies the Provide Air Quality Sensor Technology and Support

- Aeroqual ... <https://www.aeroqual.com>
- Apis ... <https://www.apis-aq.com>
- AQMesh ... <https://www.aqmesh.com>
- Project Canary ... <https://www.projectcanary.com>
- Salibri Cooper ... <https://www.sci-monitoring.com>
- Vaisala ... <https://www.vaisala.com/en/air-quality-monitoring>





Emerging Methane Emission Mitigation Opportunities

- Fugitive methane technology is evolving rapidly
- Companies can review and as appropriate implement new, better ... perhaps less costly ... emerging methane mitigation technologies and practices including, but not limited to:
 - Blowdown venting methane emission reductions;
 - Install lean burn compressor;
 - Convert natural gas-driven chemical pumps;
 - Replace bi-directional orifice meter with ultrasonic meters;
 - Use add-on controls to reduce emissions from pneumatics;
 - Move in fire gates at compressors;
 - Test and repair pressure safety valves; and
 - Use of YALE closures for emergency shutdown testing



Methane Offsets

- Builds from the same concept used in the Clean Air Act for nitrogen oxide and volatile organic compound “offsets” in nonattainment area
- Continue to recognize that this proposal is controversial
 - Thanks to those who commented
 - Still looking for comments from all on this piece
 - Builds from MDE best practices proposal before fracking ban was finalized
 - Landfill methane capture as an example of an available offset (MD approved an offset project in 2017)
- Designed to provide major incentive to minimize leaking methane emissions - less fugitive emissions ... less offset costs
- Cost cap of 5-year average annual cost of no more than \$5,000



Residual Methane Offsets

Where Do They Come From

- Preference for methane offsets but reductions of other GHG emissions or other projects that are beneficial to local communities could be used
 - Linkage to RGGI and national and international offset markets
- MDE will maintain a list of potential offset opportunities that can be considered by sources
- Examples include:
 - Local or national methane reductions via capture/utilization landfills
 - Sulfur Hexafluoride (capture and storage, recycling, or destruction)
 - Forestry and Afforestation (increase or conserve forest stocks)
 - End-use Efficiency (reduce on-site fossil fuel consumption)
 - Agricultural Methane (capture or utilize manure or organic food waste with anaerobic digesters)
 - CO2 offsets available from regional, national or international markets
 - Support of local projects that are beneficial to surrounding communities (consistent with the value of needed offsets)



Community Meetings and Reporting

- Intended to build cooperative, collaborative relationships between companies and communities
- Very flexible ... Facilities should work with local communities to establish meetings throughout each year
- MDE will participate as an observer and resource ... but the details of how the partnership will work is left up to the communities and the facilities
- The use of a facilitator is encouraged if needed



Partnership Basics

- One of the comments that MDE has heard ... over and over from community members ... is that transparency is very important
- MDE has also heard that working with some individuals is difficult
- Transparency is important but building trust between partners is even more important ... it's a two way street ... all parties must work to make the partnership a success
- Facilities will make available a comprehensive analysis of emissions and emission reductions being achieved under the new regulations and the voluntary agreement
- Meetings should include collegial discussions of emissions and other issues
- MDE to observe ... all parties are expected to behave ... if not, MDE can waive community meeting provision

A bright blue sky with a sunburst effect and white clouds. The sun is positioned in the upper right quadrant, creating a strong lens flare and illuminating the scene. The clouds are scattered across the sky, with some larger, more prominent ones in the lower left and center. The overall atmosphere is clear and bright.

QUESTIONS AND DISCUSSION