

# **ECOS E-MATRIX Methane and Volatile Organic Carbon (VOC) Emissions Best Practices Database**

## **Final Scientific/Technical Report**

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## **Abstract**

This final scientific/technical report on the ECOS e-MATRIX Methane and Volatile Organic Carbon (VOC) Emissions Best Practices Database provides a disclaimer and acknowledgement, table of contents, executive summary, description of project activities, and briefing/technical presentation link.

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## Executive Summary

The ECOS Shale Gas Caucus (SGC), with funding from the U.S. Department of Energy (DOE) National Energy Technology Laboratory, launched the ECOS Methane and Air Toxics Reduction Information Exchange (e-MATRIX), a database of best practices employed by states and others to reduce methane and VOC emissions from the shale gas production process.

Available at <http://www.ematrix.erg.com/index.aspx>, the publically available database encompasses dozens of best practices, regulations, protocols, voluntary programs, technologies, reports, and case studies that apply across the natural gas value chain. Designed to promote interstate and interagency coordination on methane and VOC reduction, e-MATRIX makes available years of research, procedures, and real-life outcomes at the click of a button. A few examples of documents contained in e-MATRIX are:

- Colorado's pioneering methane and VOC rules designed to reduce emissions by thousands of tons per year;
- Texas' Leak Detection and Repair (LDAR) program, which provides incentives for voluntary deployment of LDAR and calls for annual leak surveys; and
- North Dakota's ambitious new rule to reduce flaring, under which the state now requires operators to submit gas capture plans along with all new applications for permits to drill.

Release of the timely database coincided with a U.S. Environmental Protection Agency (EPA) proposal to dramatically reduce methane emissions from the oil and gas sector. E-MATRIX will provide useful information for states and other stakeholders regarding compliance options and insight to DOE on key R&D needs going forward.

ECOS is the national nonprofit, nonpartisan association of state and territorial environmental commissioners. The SGC's Co-Chairs are Martha Rudolph, ECOS President and Director of Environmental Programs with the Colorado Department of Public Health & Environment, and David Glatt, Chief of the Environmental Health Section of the North Dakota Department of Health.

## Project Activities

Prior to the launch the methane best practices database, ECOS collected methane and VOC emissions reduction information from the oil and gas industry, state environmental agencies, and project partners. It then undertook e-MATRIX development, organization, population, and beta testing. Submissions were screened, edited, categorized, and populated onto e-MATRIX.

Following the official launch, ECOS communicated its efforts widely in order to receive feedback on the database, optimize its content, and maximize use. Among other efforts, the SGC publicized the database in *ECOSWIRE*, the ECOS weekly newsletter to

members, and on the ECOS Twitter page, and distributed a press release targeted to 35 news organizations that generated favorable media coverage. It also announced the availability of the database on the ECOS website, demonstrated e-MATRIX via a webinar for 37 SGC members and project partners including DOE, and discussed the database on calls and webinars and at in-person SGC meeting held in conjunction with the ECOS Fall Meeting in Newport, Rhode Island.

Finally, ECOS made post-launch structural and visual enhancements to the database based on feedback solicited and received from DOE, EPA, industry, nongovernmental organizations, and others. It also loaded additional content throughout the project period.

Through the project, ECOS met its dual objective of: 1) promoting information exchange among state environmental regulators, federal energy and environmental agencies, and various stakeholders to effectively address the air impacts of the recent U.S. shale gas boom, and 2) helping advance the U.S. interagency methane strategy and the mission of the DOE Office of Oil and Natural Gas to ensure “responsible development of America’s oil and gas resources through research, policy analysis, and regulation” by fostering a collaborative approach with state governments and the private sector.

Outcomes of the project are twofold, with e-MATRIX serving to: 1) meet the needs of ECOS members by providing quality information and forward-thinking solutions that they might seek to replicate. The set of practices from which state regulators can choose will bolster state efforts to assess and mitigate methane and VOC emissions associated with expanded use of cleaner burning natural gas, and 2) inform U.S. DOE of methane research gaps and opportunities, thereby providing value for its R&D program.

### **Briefing/Technical Presentation**

A final briefing detailing the results of the technical effort and the functionality of the e-MATRIX best practices database is available for viewing at:  
<https://attendee.gotowebinar.com/recording/646314194016744706>.