

Best Practices for Methane Emissions Inventory Management and Reporting

Canada leads the way in introducing emissions regulations specifically targeting the reduction of methane emissions. Companies have had to report on methane emissions since 2019 and these regulations require that action be taken to reduce those emissions. It is likely that other jurisdictions will look to the example of Canada, which we have seen with other regulations, such as the Alberta Energy Regulators' flaring and venting regulation.

So what have we learned in the last two years? This article provides some guidance to those in Canada as well as companies in other jurisdictions where methane emissions regulations are being introduced.

1. Get a system in place

Developing the inventory of all equipment and methane emissions sources can be very challenging – and companies should be making the effort to continually improve on the systems and processes they have in place to ensure there is an accurate inventory. Except for the smallest of inventories, it is not feasible to manage these changes in a spreadsheet.

2. Target major sources

Over time all emissions sources should be accounted for, but initial effort should be on the major sources – including tanks, pneumatics, fugitives, compressors, and dehydrators. The breakdown of emissions sources can vary by company – for example, some companies have already switched most instrumentation to low or no bleed devices, so pneumatics may no longer be the major source of emissions for them.

3. Plan for changes

Developing an emissions inventory is not a one-time effort. Not only are operating parameters continually changing (process conditions, gas quality, operating hours, etc.), but facilities are shut-in, started-up, bought and sold, and equipment changes are being made to reduce emissions.

4. Maintain records

It is important to ensure that the basis for all emissions estimates is retained – including field data, sources of emissions factors, quantification basis and other assumptions. In Alberta, it is a requirement to retain all records for at least four years, but most companies will want to keep these records for much longer.

5. Evaluate your risk

It is important to be aware of the details of the emissions regulations and when specific limits are effective – so that compliance risk is clear.

6. Develop a reduction plan

The Alberta regulation requires the development of a Methane Reduction Retrofit Compliance Plan (MRRCP) and Fugitive Emissions Management Program (FEMP). These documents help companies to develop a roadmap for continued emissions reduction, along with expectations for capital spending – which requires sign-off from the executive.

7. Get help from experts

No one company can claim to be an expert in all aspects of methane reporting and reduction. There are many areas to consider:

Equipment Knowledge

Some companies have expertise with specific equipment, such as tanks, dehyds and compressors.

Technology Providers

There are many companies offering technology to reduce emissions, and they have a deep knowledge of the practical issues in installing that equipment in the field.

Fugitive Management

The companies that understand not just the fugitive equipment but have a deep knowledge of the process/equipment are most successful here. Also, there are experts who can provide insight into alternative programs (drones, planes, trucks, etc.).

Funding

It can be difficult to navigate and understand all the funding mechanisms that are available. Expertise in the carbon market and obtaining carbon credits is a specialized area.

Emissions Management and Quantification

This includes the ability to manage large amounts of data in an integrated system, understand the emissions quantification and reporting requirements, and offer advice around compliance risk and emissions reductions. This area is a speciality for Process Ecology!

In Summary

Methane emissions inventory management is a challenging and ongoing effort, requiring companies and service providers to work together as a team to ensure that the best path for methane emissions compliance and reduction is achieved.