

WEAK METHANE RULES **RISK** **BLEEDING** **AWAY JOBS**



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and economic impacts.

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INTRODUCTION

Methane is powerful greenhouse gas (GHG) – with 84 times the impact of carbon dioxide over the near term. Both the Federal and Alberta governments recognize that if we want to meet GHG emission reduction targets, we need to clamp down on climate-disrupting methane emissions from the oil-and-gas sector. But while the Federal government is proposing an approach based on a routine of regular inspections and repairs, Alberta has headed in the opposite direction, leaving it to industry to come up with its own plans for reducing emissions. Not only is the Alberta approach a recipe for missing targets -- in part thanks to lax emission reduction requirements and light penalties for plans that fail to deliver -- it will also miss out on much needed job creation.

Alberta's lack of prescriptive requirements for regular and thorough site and equipment inspections ignores the fact that methane leaks are hard to predict and that large leaks need to be dealt with quickly given the huge climate impact of methane. It also ignores the benefits of ending wasteful industry practices. From the revenue (and provincial royalties) that could be recovered by capturing previously wasted gas, to creating good new jobs in the province working to stop the leaks. These jobs will not just help reduce waste and the industry's climate impact, they will also contribute to improving local air quality by reducing emissions of air pollutants that often accompany methane releases.

Alberta's proposed approach to methane mitigation turns its back on the opportunity to create well paying jobs that employ a range of skills similar to those in the oil-and-gas industry. Such jobs would be welcomed by many oil field workers who lost jobs in the recent recession and want to put their skills back to work in a new growth industry.

But Alberta's proposed approach simply will not ensure the growth of the homegrown methane leak detection and repair industry or the development and deployment of existing cleaner equipment and new leak detection technologies. In fact, Alberta is not only proposing weaker requirements than under the federal approach, its plan lags behind requirements in a dozen U.S. states.

It is critical that Alberta reverse its current course and adopt industry wide leak detection and repair requirements that are on par with the Federal government's methane regulations. If a truly equivalent plan doesn't come forward from Alberta, the Federal government must stick to its more rigorous and measurable plan, both to end the unnecessary, damaging, and dangerous leakage of methane and other air contaminants from oil-and-gas operations and to create well-paid jobs.



x1,500/yr

REGULATING REDUCTIONS IN METHANE LEAKS AND VENTING WILL CREATE 1,500 GOOD PAYING JOBS PER YEAR OR 15,000 JOB YEARS OF EMPLOYMENT OVER A DECADE.

AGREEMENT ON THE PROBLEM, NOT THE SOLUTION

The Alberta and Federal governments agree that we have to stop the leaking of methane -- a powerful greenhouse gas -- from oil and gas operations if we want to meet our greenhouse gas reduction targets. But beyond setting a common target of reducing methane emissions by 40-45% by 2025, the two governments have offered up radically different approaches.

The Alberta plan is to provide financial support to the oil-and-gas industry and then largely allow the industry to self report on its success in reducing site-level emissions. This approach is inconsistent with how all other North American jurisdictions regulate methane emissions. The federal approach is, by contrast, more action focused, requiring equipment inspections and repairs a minimum of three times per year while placing firm limits on leakage from different types of equipment.

The federal approach is not only more likely to reduce fugitive methane emissions; it will also be a far stronger job generator. That's because a requirement for hands-on leak detection and repair on a frequent basis is much more likely to detect leaks, which have been proven to be hard to predict, and will create good green jobs in both inspecting equipment thoroughly and acting quickly on repairs.

In fact, there are many reasons to believe that the proposed Alberta approach will provide little incentive for strong action to find and repair leaks and will fail to drive job growth in a sector that provides many environmental and health benefits. Alberta's preference for setting site-wide limits on methane leakage is problematic in many ways, but its most problematic aspect is the very high limit it sets for allowed emissions: Alberta's vent limits are 12 times higher than the federal limits.

Secondly, because industry can self-report on these emissions and there are no stringent penalties in place under Alberta's rules for exceeding limits, the motivation to act on reducing climate-damaging emissions -- and create jobs in the process -- is weak. Oil-and-gas companies will face much more serious penalties under federal regulations, creating a greater incentive to find and repair leaks quickly. The lack of strong prescriptive measures (e.g., firm limits for each type of equipment and a requirement for regular checking of pumps, valves, tanks and other devices) will also make it harder to measure compliance under Alberta's proposed rules.

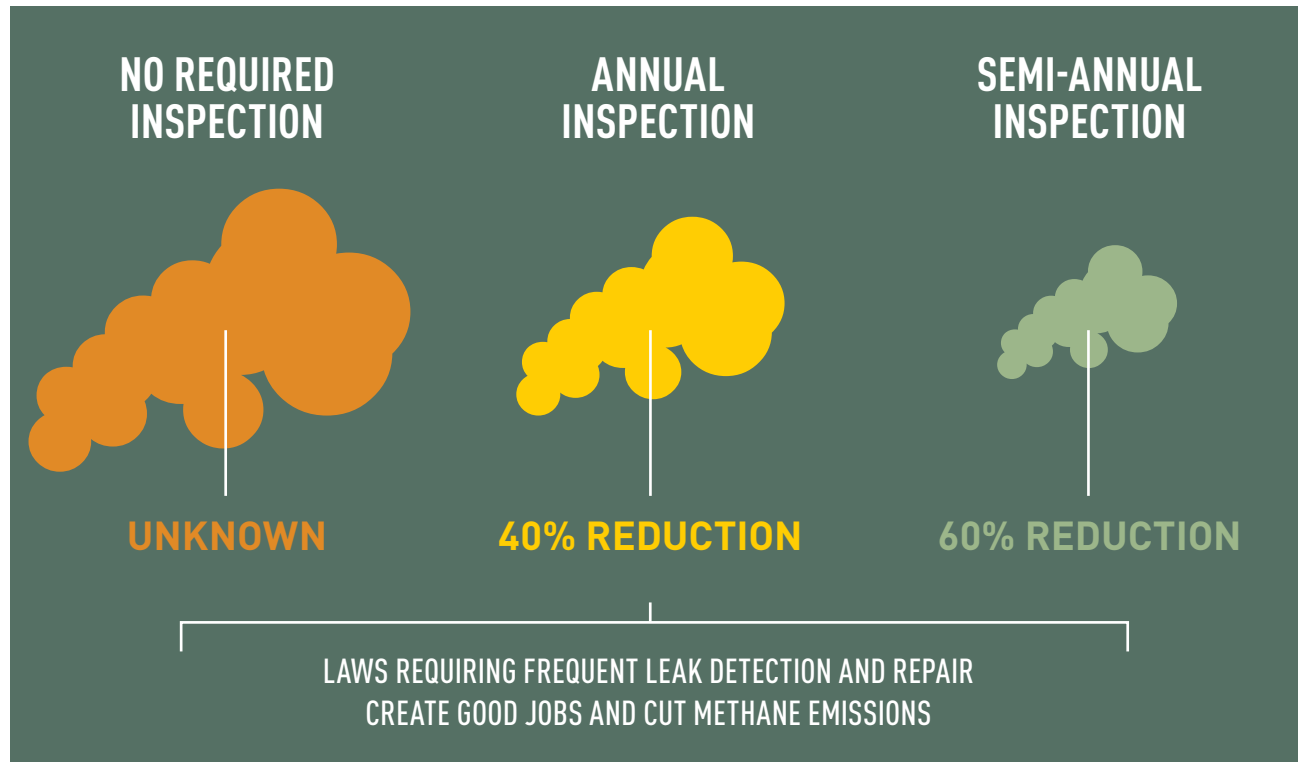


***Terence Trefiak, Founder
Target Emissions Services***

We interviewed Terence Trefiak prior to the release of both the Federal or Alberta government methane regulation plans. Mr. Trefiak shared the view that companies will not undertake regular inspections without it being required by regulation. "They only realize the benefits after doing it," he explains.

Companies can overestimate the cost of doing leak detection and repair, he notes, while in truth most repairs can be undertaken under routine maintenance budgets. He believes that by adopting stronger leak detection and repair regulations, Canada and Alberta can build the LDAR industry here while also showing oil-and-gas companies that regular inspections and repairs are cost effective.

YOU CAN'T FIX A PROBLEM YOU DON'T LOOK FOR



One of the keys to addressing and preventing leaks, which are responsible for half of the methane emissions from the oil-and-gas sector, is regular inspection. Studies and industry experience have shown that frequent inspections of pumps, seals, and other equipment is the most effective way to identify and address methane leaks.

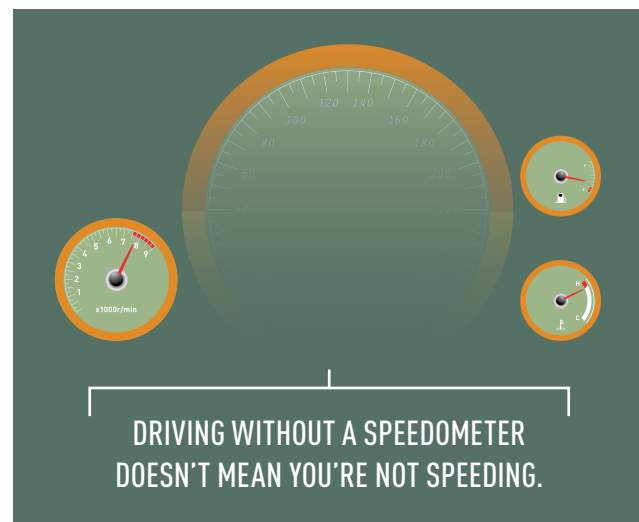
There are a few reasons why requiring frequent site surveys and inspections are the most sensible approach to reducing damaging methane emissions from leaks. First, leaks are not predictable – they can occur anywhere at any time. Frequent inspection means these random leaks will be detected and addressed more quickly.

Studies have shown that there is no reliable pattern for determining where or when leaks will occur, making frequent inspection the only viable solution to nipping the problem in the bud. In fact, one U.S. company found that regular inspections reduced leaks by 75 per cent over a five-year period.

Regular inspections would create valuable jobs in an oil patch that, even with rising oil prices, employs far fewer people than it did before oil prices dropped for a number of years. In post-recession Alberta, all the buzz among oil industry executives is about “de-manning” operations – from introducing self-driving trucks to automating

drilling controls. The methane mitigation business, meanwhile, is a growth industry.

Some in the oil and gas industry don't want regular monitoring for leaks to be required to comply with new methane regulations. **But ignoring how much methane leaks from your operations while claiming you are following the rules is like saying... “DRIVING WITHOUT A SPEEDOMETER MEANS YOU'RE NOT SPEEDING”**



CREATING A CLIMATE FOR ECONOMIC GROWTH

Experience in American states where the oil-and-gas sector is required to reduce methane emissions through regular Leak Detection and Repair (LDAR) activity is that regulations have led to the creation of new local jobs and economic opportunities. These jobs are well paid and include work in engineering, manufacturing, surveying and administration.

We have previously calculated that methane regulations, including a strong leak detection and repair program, could create up to 15,000 person years of work over a decade in Canada, mostly in Alberta. Work in the LDAR sector is more labour intensive than for the oil-and-gas industry on average, while employing many of the same skill sets. But without a requirement for regular inspections, many of these job opportunities won't materialize.

LDAR workers bring knowledge of systems and safety procedures from the oil-and-gas sector to their new roles in a new industry and can similarly move back into conventional tasks within the oil-and-gas sector with an enhanced understanding of how to make equipment run efficiently and how to work with new technologies.

Under industry's preferred approach, we also lose the incentive to develop cutting-edge leak detection technologies. The draft Alberta regulations actually

suggest that companies can rely on human senses like sight, hearing, and smell to detect leaks, a very low tech way to detect an invisible and often hard-to-detect gas (studies have found that companies regularly underestimate methane leakage from their operations). In fact, industry's opposition to a regular inspection regime speaks volumes about its lack of motivation to actually find and fix leaks. Instead, it would prefer to continue to assume that leaks are much less of a problem than they are, largely because it isn't looking for them.

Another opportunity missed by Alberta's proposed approach is dealing with so-called "legacy" sites – old wells or pump stations that may still be leaking. Methane leaks are also often accompanied by leaks of volatile organic compounds and other air pollutants, meaning that acting to reduce emissions from both operational and defunct sites will have significant health benefits, and that the sooner and more completely we eliminate leaks the better.

Finally, the Alberta approach will leave valuable revenues that could be used for everything from job training to health care leaking out of the provincial treasury. It is estimated that currently more than \$250 million worth of natural gas is being lost through leaks and venting each year in Alberta, which represents approximately \$21 million in provincial royalties not being collected.

CHARACTERISTICS OF JOBS IN LEAK DETECTION AND REPAIR SERVICES

ADAPTED TO CANADIAN DOLLAR FIGURES

TITLE	MOST COMMON EDUCATIONAL REQUIREMENT	HOURLY WAGE	SALARY
LDAR Technician	High School Diploma	\$17 – 25	\$35,600 – 52,000
Project Manager	Bachelor Degree; High School Diploma with Experience	\$26-38	\$54,700 – 79,000
Environmental Engineer	Bachelor Degree in Engineering Master in Engineering	\$54	\$111,350
Environmental Scientist	Bachelor Degree	\$42	\$88,800
Drone Op	High School Diploma; Unmanned Aerial Vehicle (UAV) training	\$29-32	\$81,650 - \$90,850
Heli pilot	High School Diploma; FAA trainging and Certificaton	N/A	\$111,290 – 149,000

Source: Find and fix: Job creation in the emerging leak detection and repair industry, Datu Research, April 2017.

ALBERTA'S SMART COMPANIES ARE POISED FOR GROWTH

There are more than 170 companies in Canada involved in reducing methane emissions, with half providing technology and half providing services such as leak detection and repair. The majority of these companies are Canadian-based small businesses with fewer than 50 employees, a sector that is widely acknowledged to be a key job creator. They are poised for growth, with 80% saying they will be hiring once a strong LDAR regime is in place.

Various studies have found that a large percentage of methane reduction actions would pay for themselves and that the net cost of driving down methane emissions by 45 per cent would add as little as one to two cents per thousand cubic feet (MCF) to the cost of natural gas (North American gas prices are currently in the range of \$3.25 per MCF). It has been estimated that in 95 per cent of cases, action to reduce leaks would represent a net financial gain for companies. The evidence supports this too. In jurisdictions that have adopted strict methane regulations and regular inspection regimes, companies are seeing bottom-line benefits. In a survey in Colorado, seven out of 10 oil-and-gas producers said the benefits of regularly checking equipment for leaks outweigh costs.

For companies that are concerned about inspection costs, there is also the opportunity to replace old, leaky equipment with new zero emission equipment. Roughly 70,000 well sites in Alberta operate on systems powered by pressurized gas, and are therefore ripe for climate-

damaging leaks. There is a big business opportunity in switching these gas powered sites to new electric-powered, zero emission equipment, making this a double impact industry opportunity. But with Alberta's current approach, there will be little incentive to employ workers to replace old equipment with this newer, cleaner technology.

Unless Alberta revises their current approach and introduces stronger regulation, Canada's natural gas could come to be viewed as the dirtier option. In this era of climate action, trying to sell natural gas with weak methane regulations is like trying to sell oil that produces higher emissions. The world is less and less interested.



“DON’T LOOK, DON’T SEE” DOESN’T WORK

Bowing to pressure from some regressive industry members to weaken methane regulations will erode public confidence in government’s ability to deliver effective climate plans that tackle our greenhouse gas reduction commitments. Moreover, it would reduce incentives to deploy clean technologies in the oil-and-gas sector — undermining an opportunity to grow Canadian businesses, create good jobs, and support clean innovation at home.

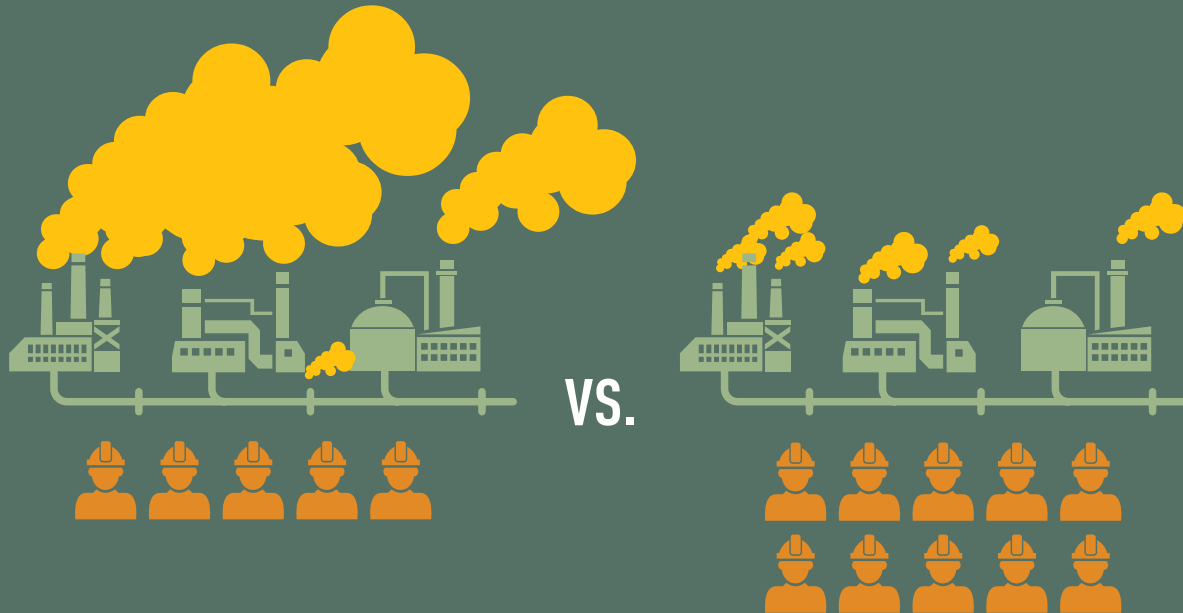
The Federal government’s commitment to a “competitive and clean” oil-and-gas industry means it must stand its ground on methane by delivering strong regulations that meet or exceed those in the U.S. and that will achieve Canada’s 2025 emission reduction target.

By following a more responsible approach to methane regulations- like those increasingly being applied in many parts of the United States and countries across the globe - Alberta would gain jobs in the oil-and-gas sector and create more certainty of meeting important methane emissions reduction targets.

It is crucial that Alberta change its current course on methane regulations and adopt industry-wide leak detection and repair requirements that are equivalent with the Federal government’s methane regulations.

Failing that, the Federal government can stand with workers and communities by requiring Alberta to adopt regular leak detection and repair requirements or by refusing to recognize Alberta’s proposed approach as equivalent to federal measures and require companies to follow federal methane regulations instead.

METHANE BUSTING WORKFORCE WILL DOUBLE WITH REGULATION



40% OF THE COMPANIES IN THE CANADIAN METHANE MITIGATION INDUSTRY ANTICIPATE DOUBLING THEIR WORKFORCE TO HANDLE WORK GENERATED WHEN GOVERNMENT REGULATES REDUCTIONS IN METHANE EMISSIONS.

