Cenovus' Alternative Fugitive Emission Management Program (FEMP) includes two methane detection technologies (OGI Camera and Gas Mapping LiDAR). OGI is considered a standard method under Directive 060. Gas Mapping LiDAR™ (GML) uncovers and quantifies methane leaks and physical changes in infrastructure. GML uses proprietary laser-based remote sensing technology from an airborne platform to provide 3D LiDAR and sensitive methane concentration maps overlaid on aerial or satellite photography. GML's proprietary analytics provide leak source locations (GPS coordinates), leak rates (flux), real-time alerts for dangerous leaks, and other information.

Considering the heavy tail methane emission distribution that is well documented within the upstream oil and gas sector, Cenovus plans to focus their mitigation efforts on the highest emitting sites to achieve greater reduction efficiency. The proposed approach involves the following steps:

1. Conduct high-resolution gas mapping LiDAR aerial screenings at all active facilities twice per year.
2. Analyze site-level methane emissions from all active facilities, rank, and identify the top 10% methane emitting sites, after each aerial screening.
3. Conduct follow-up OGI surveys at the top 10% methane emitting sites & sites with aerial-estimated emissions >500m3/d, after each aerial screening.
4. Design and execute site-specific methane emissions reduction action plans (leaks & vents) for the top 10% methane emitting sites.
    a. Fugitives: Repair timelines aligned with Directive 060, and completed after each aerial screening/OGI survey.
    b. Venting: Within ~4 months of the 1st annual aerial screening, we will seek to implement site vent abatement (site vent reduction target = ~65% of site baseline).

It is understood that for upstream oil and gas, site-level methane emissions are dominated by venting sources, with fugitive sources of less significant magnitude. Without an accurate understanding of the contribution of vented emissions on a site-level, resolving fugitive emissions during top-down aerial screening is difficult. Managing emissions from a site-level approach aligns with the ultimate objective of the new methane regulations – to reduce emissions by 45% by 2025 (regardless of the emission source). Modelled programs in this report follow a practical approach to mitigating the largest emitters considering the cumulative impact of vented and fugitive emissions.

Cenovus used a third party's methane emissions and repair simulation to estimate annual methane emission reductions attributed to various leak detection and repair (LDAR) programs. The proposed alternative program is estimated to result in approximately 5,730,313 m3 / year of fewer emissions (combined fugitive and vented) compared to the default regulatory approach.

As field data is collected during the pilot, estimates on natural repair rates, leak production rates, vent rates, the leak production profile, and technology performance on Cenovus' sites will improve. Future model re-runs with updated emissions data will be an important aspect of evaluating the alt-FEMP program and model effectiveness, as well as regulatory compliance.