



GAIL (India) Limited

Fugitive Methane Emission Management Initiatives

CASE STUDY



Figure 1: IR Camera View of Fugitive Emissions

Summary

The Compressor Seal Gas Recovery Project was taken up at GAIL Vijaipur facility in addition to arrest of identified fugitive methane emissions from flanges, valves etc. This led to reduction of GHG footprint of the operations, minimize product losses, improve overall operational efficiency and enhance safety. The above efforts has been able to led yearly reduction of over 2.89 MMSCM methane emission on the baseline of 2010-11 which is equivalent to reducing 41,225 ton of CO₂e annually, in other words, 12,376 acres of tree planted annually.

Objective of Intervention

The objective of the case study was to demonstrate the application of new technologies with industry best practices to identify, reduce methane emissions to the atmosphere in view of raising awareness within GAIL employees. To arrest & reduce methane emission to atmosphere and to identify GHG emission reduction opportunities, GAIL has joined Natural Gas STAR International programme of US-EPA. Under this initiative a thorough survey and detailed study to measure, manage and reduce Fugitive Emissions was planned. The associated benefits by arresting methane loss leads to minimizing product losses and improve overall operational efficiency and safety.

Type of Intervention and Location

Green House Gas (GHG) emissions reduction at GAIL Vijaipur Unit, District Guna, Madhya Pradesh



Description of Intervention

The fugitive and vented Methane emissions study was conducted in presence of the US-EPA representatives using Infra-Red (IR) Camera & calibrated equipment in 2011 at GAIL Vijaipur. Further another follow up study was carried in 2014 towards revalidation, identification and prioritization of fugitive emissions. GAIL has initiated the implementation of fugitive methane emissions reduction initiatives identified under the Global Methane Initiative. IR Camera has been used for identifying areas of leakage. Further, the recurring fugitive emissions due to Compressor wet seal degassing vents are identified and action has been taken for recovering natural gas back to the Seal Gas Recovery compressor system with a total investment of over INR 6 Crores. This has resulted in recovering the fugitive methane gas emission & cycles it back to the suction of the compressor thereby eliminating its discharge into atmosphere.

Intangible or Tangible Benefit

Through this initiative, GAIL Vijaipur has been able to reduce over 2.89 MMSCM (million m³)/ year methane emission over its baseline of 2010-11 which is equivalent to saving revenues over INR 3 Crores / year and reducing 41,225 ton of CO₂e annually. This also led to improve safety and operational efficiency.

About GAIL (India) Limited

GAIL's commitment towards sustainability is ingrained in their vision statement- Be the Leading Company in Natural Gas and beyond, with Global Focus, Committed to Customer Care, Value Creation for all Stakeholders and Environmental Responsibility. Being an energy company, GAIL is committed to play a key role in building sustainable energy future for the country. From its humble beginning as a gas transmission company, GAIL became the largest Natural Gas Marketing & Transmission Company in the country. As an integrated energy major, GAIL is having around 11,000 Km Gas Pipelines, 2040 Km LPG Pipelines, seven gas processing plants of 1.4 MMTPA LPG / Liquid Hydrocarbons capacity and gas based petrochemical plant of 410,000 TPA polymer capacity. GAIL continues to explore opportunities globally with focus on gas sourcing. As the industry leader in natural gas, we have contracted gas supplies to put in place a diversified long-term import portfolio. Domestic Subsidiaries GAIL's wholly owned subsidiary (100%) - GAIL Gas Ltd., supplying to Dewas, Sonapat, Agra, Ferozabad, Vadodara & Panvel, Brahmaputra Crackers & Polymers Ltd (BCPL) (70%), Overseas Subsidiaries- GAIL (Global) Singapore Pte (100%), GAIL (Global) USA Inc. (100%), GAIL Global (USA) LNG LLC (100% subsidiary of GAIL (Global) USA Inc.) Joint Ventures- Petronet LNG Ltd - PLL (12.50%), ONGC Petro additions Limited- OPAL(15.5%), Ratnagiri Gas and Power Private limited- RGPPL (32.88%), GAIL China Gas Global Energy Holding(32.88%), City Gas Distribution (CGD) JVs- GAIL is a pioneer in City Gas Distribution business in India with 8 JVs, Mahanagar Gas Limited - MGL (35%), Indraprastha Gas Limited - IGL (22.50%), Bhagyanagar Gas Limited - BGL (22.50%), Green Gas Limited - GGL (22.50%), Central U.P. Gas Limited - CUGL (25%), Maharashtra Natural Gas Limited - MNGL (22.50%), Aavantika Gas Limited - AGL (22.50%), Tripura Natural Gas Company Limited - TNGL (29%)