CCUS and Low Carbon Fuels

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GHG EMISSION REDUCTION BY CONVERTING VENTING SYSTEM TO FLARING AT CENTRAL PROCESSING PLATFORM (CPP)

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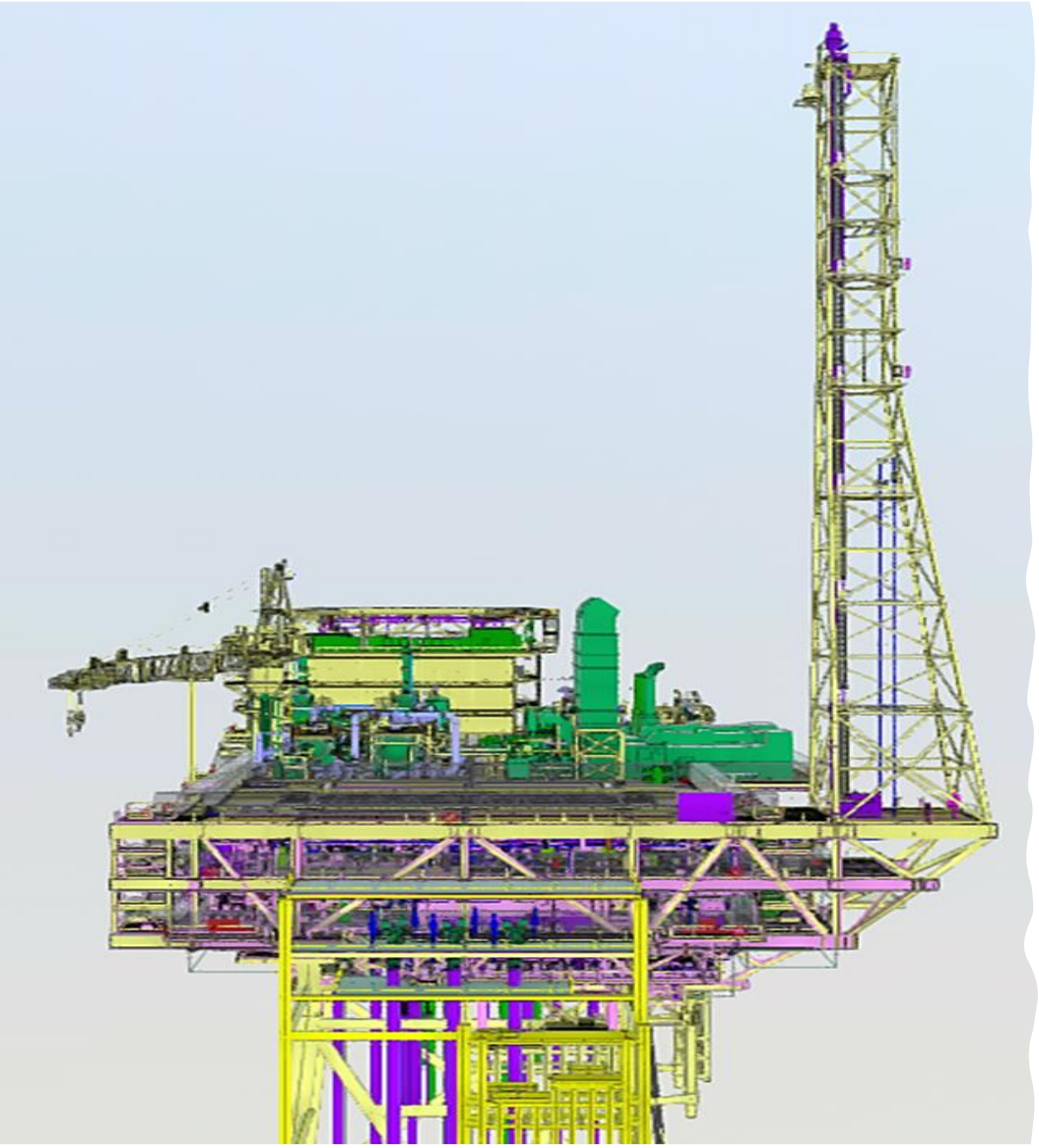


Outline

- GHG Emissions Reduction Roadmap
- CPP Vent to Flare Conversion Project
- Estimated GHG Emissions Reduction
- Q&A Session

GHG Emissions Reduction Roadmap

Electricity

Ongoing

1. 1 Hour lights off during lunch break
2. Change fluorescents to LED lights in offices.

Flaring

Completed

1. FPSO FGC installation further reduce flaring rate
2. Study on FPSO Zero Flaring was conducted in 2021 Result: Not economically feasible (study was conducted based on end of PSC in 2028)

Future Plan

1. Zero Routine Flaring from 2030

-Conduct study on Zero Routine Flaring at CPP & FPSO (based on EOFL 2037)

2. Conduct FIP for improvement of flare measurement accuracy & optimization of routine flaring.

Fugitive Emissions

Ongoing

6 Monthly Condition Based Monitoring – Gas Loss of Containment at CPP & FPSO

Vent Improvement

Ongoing

1. Implementation of controlled venting (Avoid excess venting >0.2mmscfd)
2. Reduce routine venting – due to more stable process

Future Plan

Conversion CPP Vent to Flare in Aug 2025

Transportation

Ongoing

1. Installation of LCT mooring buoy – Standby Vessel will tie at the buoy while not on duty (standby with one engine running).
2. Combined crew change for CPP & FPSO

(No alternate Friday for CPP Crew Change)

Fuel Gas Utilization

Ongoing/Completed

1. Reduction of approx. 0.2 MMscfd after implementation of fuel gas optimization program (Stripping gas & purge gas optimization)

Study / Evaluation relevant with Fuel Gas Optimization

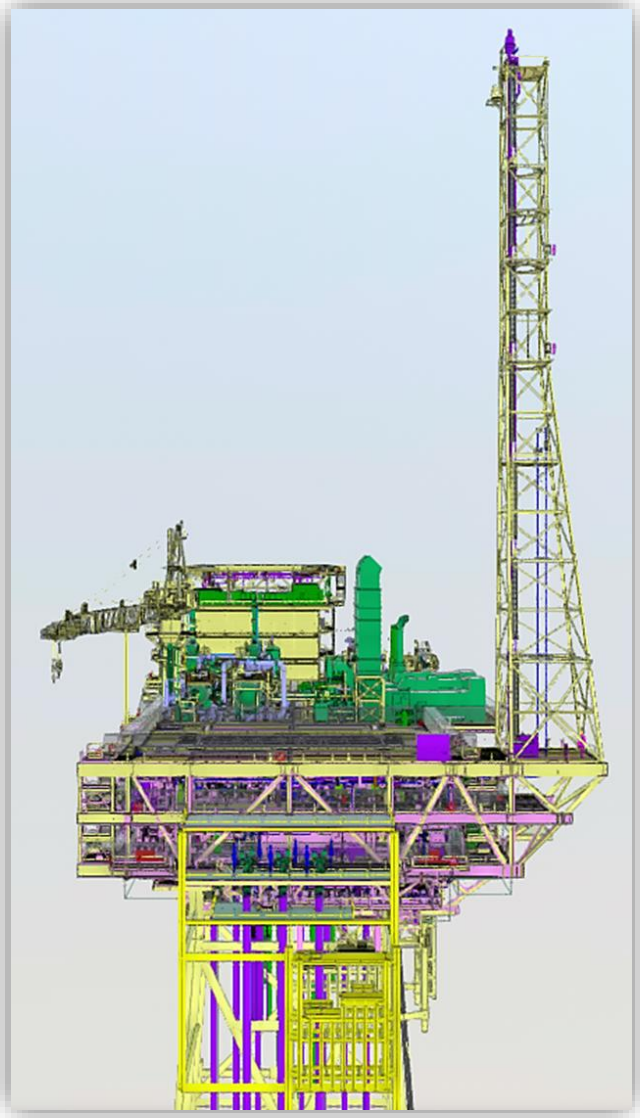
1. Optimum no. of running compressor based on nominated gas production in CPP/FPSO
2. Bench marking of fuel gas consumption in GTG/ GTC
3. Analysis of Turbine Wash Effect
4. TC Gas Engine Upgrading Option Assessment

Future Plan

1. Study on Air intake filtration upgrade for stationary combustion (Ongoing).

2. Study on condensate export pump – to reduce the load.

CPP Vent to Flare Conversion Project



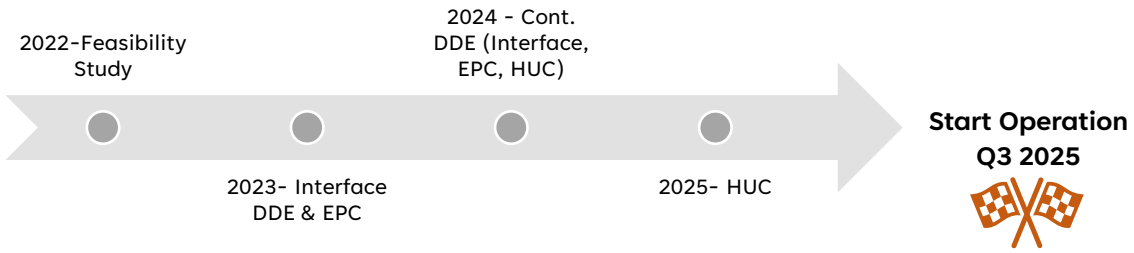
Problem Statement

- Existing CPP Vent System is emitting HC Gas (primarily Methane, CH4) into the atmosphere
- CH4 is 25 times more potent than CO2 (100 years Global Warming Potential)

Objective

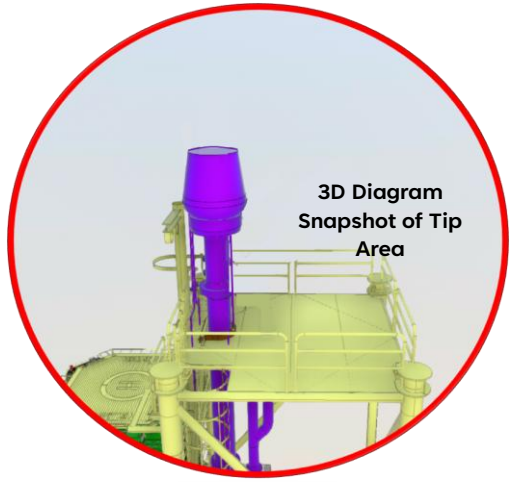
- To achieve GHG Emissions Reduction by converting CPP Vent System to Flare System

Project Timeline

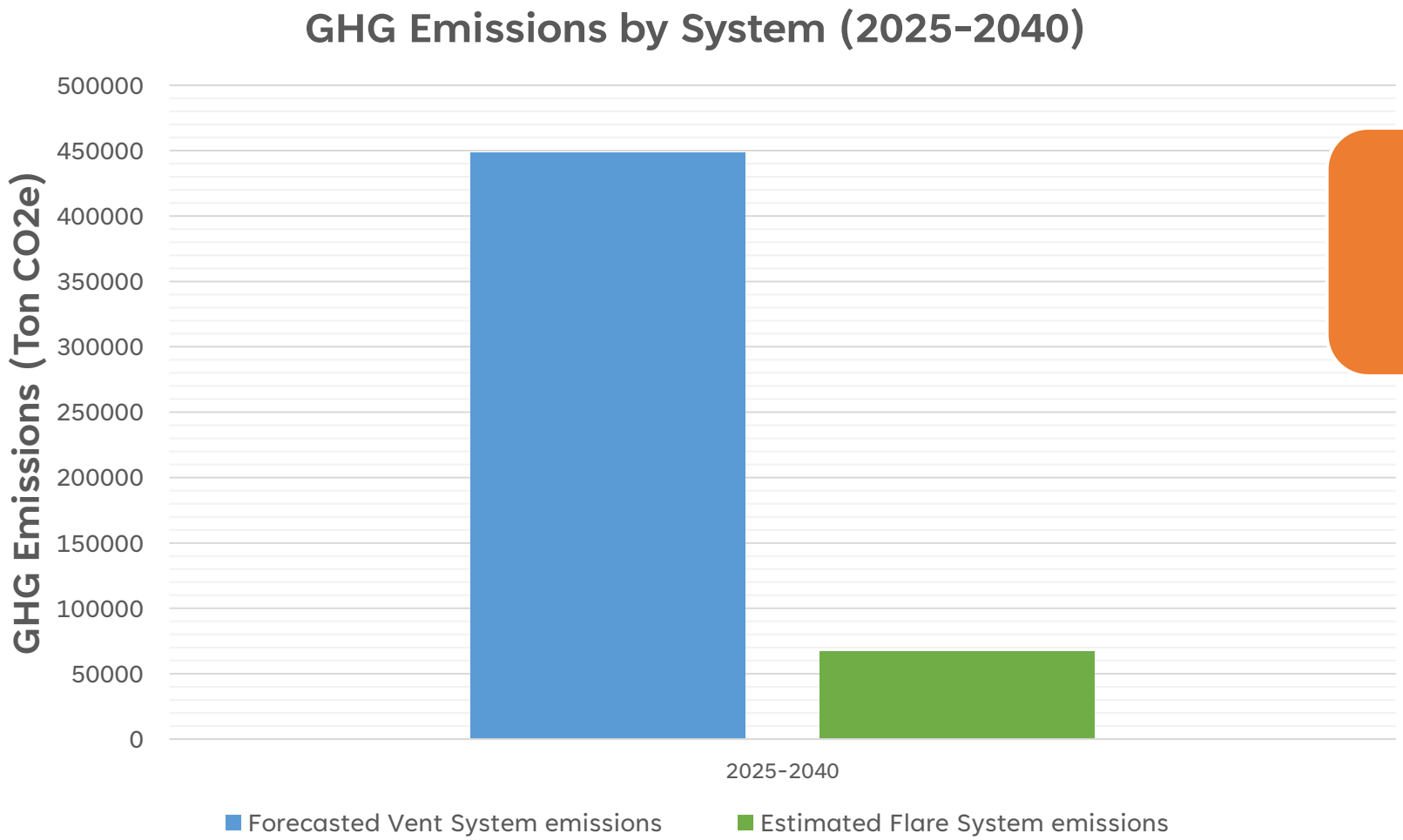


Scope of Modification / Installation

- Replacement of Vent Tip to New Flare System – Combined HP LP flare tips
- Replacement of Existing CS Piping (DN 450 for HP, DN 200 for LP) to SS 316L Piping– 20m Spool (EL +76.630)
- Installation of New Flare Ignition Package
- Installation of New Pilot Line (DN 25) and Ignition Line (DN 25)
- Installation / Tie in from FG System and Utilities Air to New Flare Ignition Package
- Removal of Existing Vent Snuffing Package



Estimated GHG Emissions Reduction



A total of 85% Emissions Reduction in GHG Emissions (Vent System) until EOFL

Note:
1. Emissions for 2025-2028 is based on forecasted production data (WPB) – only affected source are shown.
2. EOFL based on MR#2/3 Approved Production Profile
3. Assume GHG emissions reduction/ flaring system online starting from Q3 2025
4. Assume yearly Emissions for 2029-2040 same as per emissions in 2028