

Project Title: Reducing GHG emissions – Flare Gas Recovery System (FGRS)

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Summary:

Proposed Project:

Recovery of Methane gas (CH₄ +) from flare header and utilizing to generate power and heat, which otherwise routed to the flare tip for atmospheric disposal.

The flare gases comprised of purging, compressor seal venting, venting due to unit start-up, shutdown and releasing for maintenance, which are flare burned without extracting energy does not work out from plant economics and environmental perspectives. When extracted the energy by deploying MicroTurbines, generates power and heat, which the facility can benefit by drawing reduced power from grid and natural gas used for building heating or other heating or producing steam from low grade heat resources.

Technology:

The proposed technology will help in converting Methane to a low potent CO₂, Electricity production, utilizing low grade heat resources, and can be deployed at remote locations.

Following are the benefits of deployment of this technology over Vapor Recovery Unit (VRU).

- Reduced footprint
- Cost effective / maintenance free
- Classified / Remote area deployment
- No power consumption
- No cooling water requirements
- Reduced instrumentation and monitoring
- Self-sufficient and standalone unit
- Help replacing emergency DG set
- Serves purpose of small scale boiler to recover low grade to medium grade heat water resources by converting to hot water
- Facilities having power constraints may benefits of deployment of such technologies
- Can accept partial sour gases without compromising efficiencies

Opportunity:

Very few industrial operations deploy VRU to recover flare gas and recycle to Fuel Gas System.

The recycling of Flare Gases to the Fuel Gas System does help converting methane to CO₂; however, this practice remains highly inefficient and does not offer any flexibility or advantage. *Compared to these traditional practices, Microturbine offers tremendous benefits and flexibility.*

Environmental Benefits:

Dramatic reduction in GHG emission as it offsets the other emission sources to achieve either carbon neutral or net negative carbon emission.

Area of application:

- OilSands (minable, thermal)
- Upgrader
- Petrochemicals
- Refinery
- Fertilizers
- Gas Processing
- LNG