Abstract

The industry provides significant opportunities for a reduction in energy demand and CO2 emissions. It could be achieve through a variety of measures and technology advances in equipment and materials. The Refineries & Petrochemical industries are the third largest source of CO2 emissions takes an account for 30 % of the final energy use.

This huge producers are burning of thousands Tones of gases in the flaring system, the most amount of Carbon compounds (i.g.hydrocarbons) and valuable gases such as hydrogen burn in flaring system. Major emissions are Co2, Nox. This Losses in addition to the waste of a large amount of the nation's capital, suffered the ecosystem imported and the cost of many diseases such as respiratory as well as skin will be followed. Second, BPC (same as a Petro-Refinery) is followed by macro policy in the environmental debate establish the three projects for management of Restoring the Gases from Flaring system.

With due these projects, it could be to prevent the release of more than 380 tons of Co2 gas daily and in other side, it will be in access as a revenue from the sale of fresh gases with margin of income around 500,000 $ per year. These projects were defined in our company.

- Construction & Commissioning of the Hydrotreating(Sweetening) process of light End(LTE) as by-product in Complex
- Flare Gas Recovery plan
- Pilot unit of Sour gas conversion to DMDS (Di-methyl Di-Sulfide) as new product.

BPC could be to prevent the loss of hundred tons of hydrocarbons, leading in carbon management requirements in terms of Capture and Storage of Carbon. It should be noted that another important aspect is commitment to environmental issues and the implementation of relevant considerations. Due to the increasing sensitivity to global environmental issues, is in particular importance.
Aspects of Plan:

- Reduce the losses of Flaring because of new definition of source for using the end product based on the Market scan of World Petrochemical & Refineries demands.
- Environmental care because of reducing flaring by establishing this unit. More than thousands Tones of gases in the flaring system, the most amount of Carbon compounds (i.e. hydrocarbons) and valuable gases such as hydrogen burn in flaring system.
- In short time turn over of fixed cost of project and made a profit for the plant in both side as an one of pioneers of Environmental friendly plants and produce new product based on the existing demand.
- In optimistic manner, it is a good opportunity for the PSEEZ to promote this figure to reduce the CO2 and other un-favor gases Emmision to the Atmosphere.
- Many projects are under investigation and study for doing well this world plan nearer to the pioneers.
Flare Gas Recovery plan

The establishing in pilot phase for recovery of valuable gases are another project of BPC Plant for scale up to the industrial phase. The field monitoring are comprehensive for investigation against the industrial scale and the Plant is proceed to establish the industrial scale of Flare Gas Recovery by aspect of own mission of statement respect to Environment and Global Climate change plan.
Fig No.2 Flare Gas Recover Schematic
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Major Companies</th>
<th>Number of oil fields</th>
<th>Faring gas amount</th>
<th>Price (Cent/cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National Iranian South Oil Company</td>
<td>21 fields</td>
<td>6.186 mcm/d</td>
<td>3.5 to 4.2</td>
</tr>
<tr>
<td>2</td>
<td>Iranian Offshore Oil Company</td>
<td>11 fields</td>
<td>10.173 mcm/d</td>
<td>1.75 to 3.5</td>
</tr>
<tr>
<td>3</td>
<td>Arvandan Oil &amp; Gas Company</td>
<td>4 fields</td>
<td>2.778 mcm/d</td>
<td>3.5</td>
</tr>
<tr>
<td>4</td>
<td>Iranian Central Oil Fields Company</td>
<td>4 fields</td>
<td>0.3 mcm/d</td>
<td>3.5</td>
</tr>
<tr>
<td>5</td>
<td>South Pars gas field (phases 1 to 10)</td>
<td>10 phases</td>
<td>0.39 mcm/d</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Table No.1 Four major companies as an affiliated of Iran Oil Ministry

- **Pilot unit of Sour gas conversion to DMDS (Di-methyl Di-Sulfide)**

  Use the new methods same as GTL Process to recover and convert the Sulfure compounds for producing DMDS is a FS(Fiesibility study) that it was proceed in R&D Department. This is a new plan for in pilot phase by biochemical catalysts to do this job. The apparatuse is skid mounted with Up/Down stream connection that mounted in process connections of unit.
Now a day's, a suggested method for controlling the level of greenhouse gases in the atmosphere is prevention of flaring gas. In this work, three methods are proposed to recover gas instead of conventional burning in a flare at the Asalooye Gas Refinery. These methods aim to minimize environmental and economical disadvantages of burning flare gas. The proposed methods are: 1) Gas-to-Liquid (GTL) production, 2) electricity generation with a gasturbine and, 3) compression and injection into the refinery pipelines. In order to find the most suitable method the required equipments for the three aforementioned methods are simulated.
References:

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6. FGRS the Key Step to Protect Environment in Petrochemical Plants, Omid Zadakbar, Ali Vatani, Armin Zadakbar, Faculty of Chemical Engineering, the University College of Engineering, University of Tehran