BURNERS FLARES THERMAL OXIDIZERS VAPOR CONTROL RENTALS AFTERMARKET







ZEECO

Vapor Control Products

2019 International Sales Meeting

Greg Seefeldt, PE

General Manager

Vapor Control Products

Outline

- Group and Product Descriptions
- Applications We Are and Are Not Interested In
- Tips on Finding Leads and Projects
- Regional Groundwork Needed for Success
- Competitor Analysis
- Zeeco Strengths
- Preparing Quotes
- Q&A

Group and Product Descriptions

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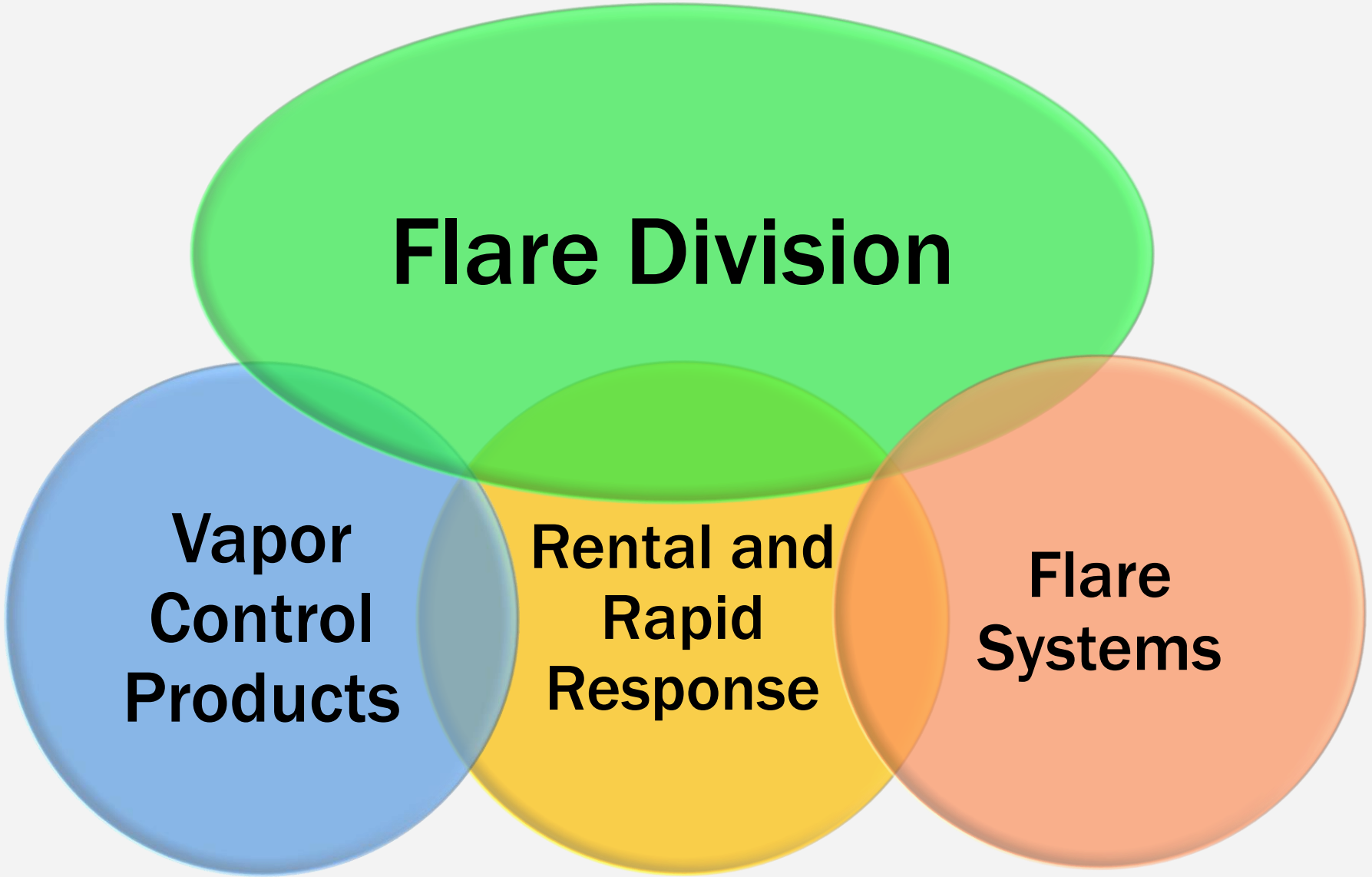
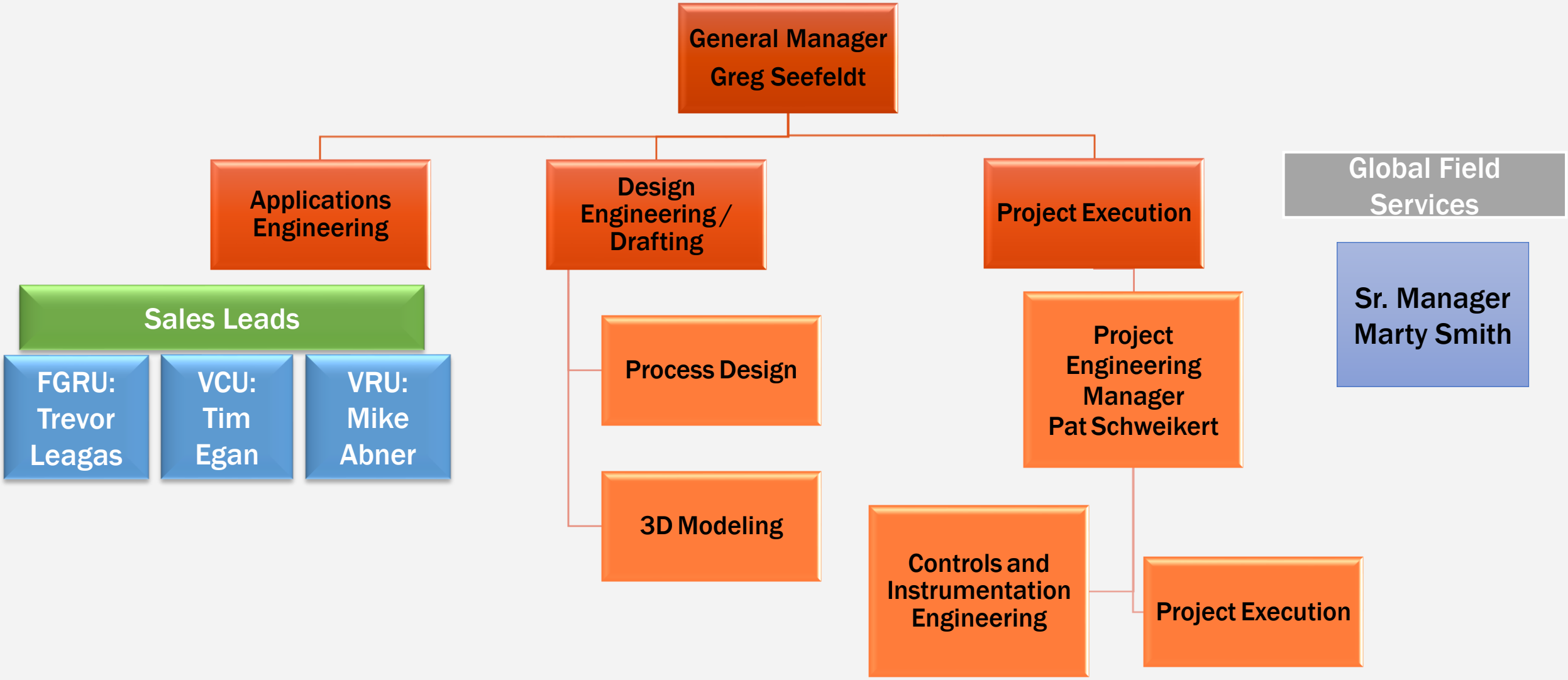
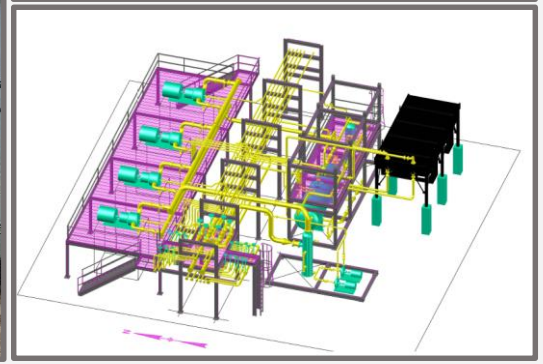


Group and Product Description



Group and Product Description

- What we do:
  - Vapor Recover (VRU)
  - Vapor Combustors (VCU)
  - Flare Gas Recovery (FGRU)



Vapor Recovery Units

- **Primary Users:**
  - Liquid Loading Terminals

Truck Loading

Ship and Barge Loading

Rail Loading

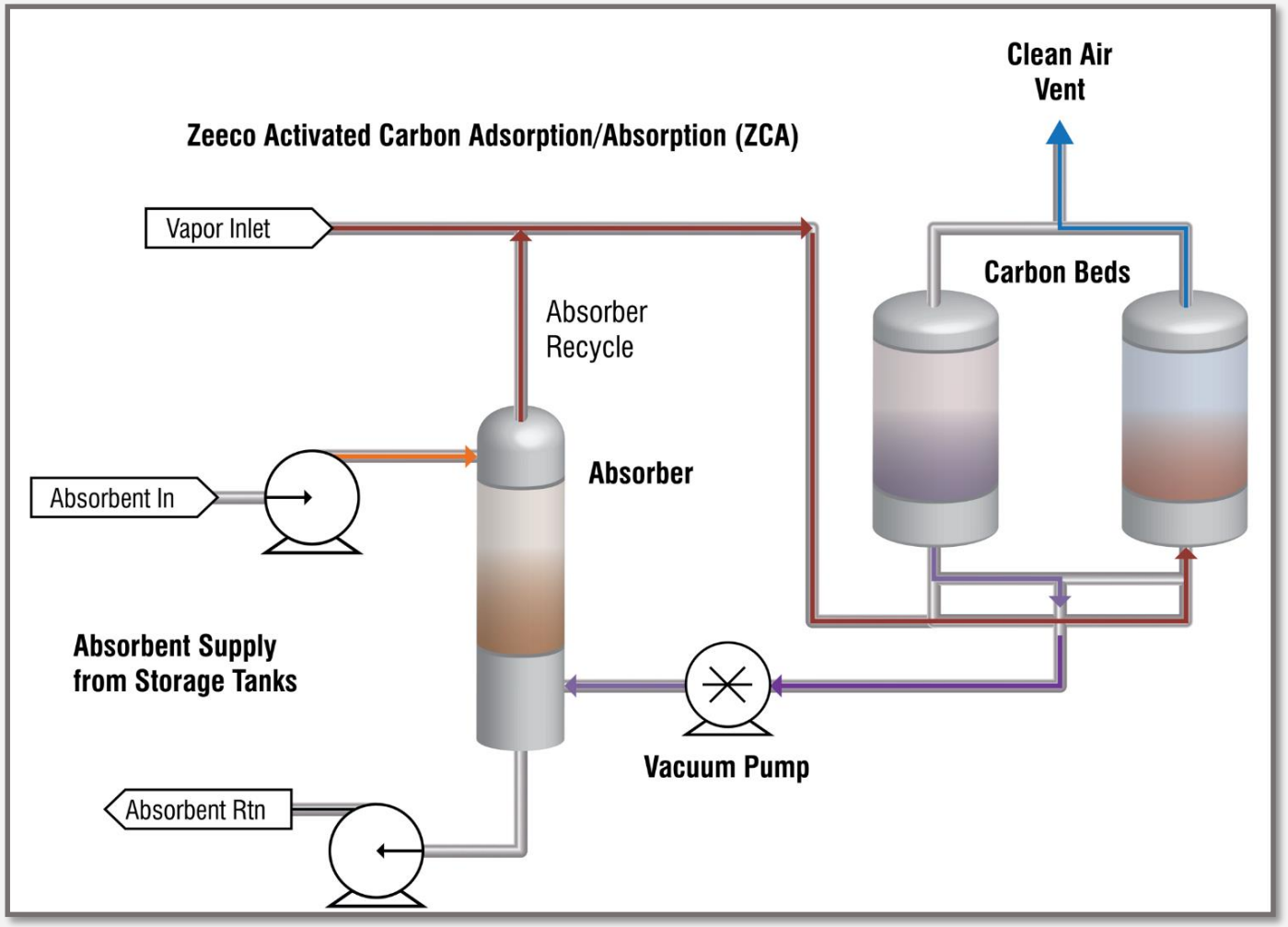
Vapor Recovery Units

Design and Operation

- Vapors offset during loading are routed to VRU.
- Hydrocarbon is separated from the air.
- Clean air is vented
- Hydrocarbon is condensed and sent back to the tanks.
- System utilizes activated carbon.

Benefits:

- Hydrocarbon is recovered at a rate of around 1 liter for every 1000 liters loaded.
- Overall facility emissions reduced.
- Pays for itself



Vapor Recovery Units

Vapor Recovery Units

Vapor Recovery Units

PROGRESO, MEXICO

HIDROSUR

TERMINAL

Vapor Recovery Units

- **Typical Order Size:**
  - $400K to $1.5MM
- **Main Competition:**
  - John Zink - Hamworthy
  - Aereon
  - Aker-Coolsorption
  - Multiple European Vendors

Vapor Combustion Units

- **Primary Users:**
  - Liquid Loading Terminals

Truck Loading

Ship and Barge Loading

Rail Loading

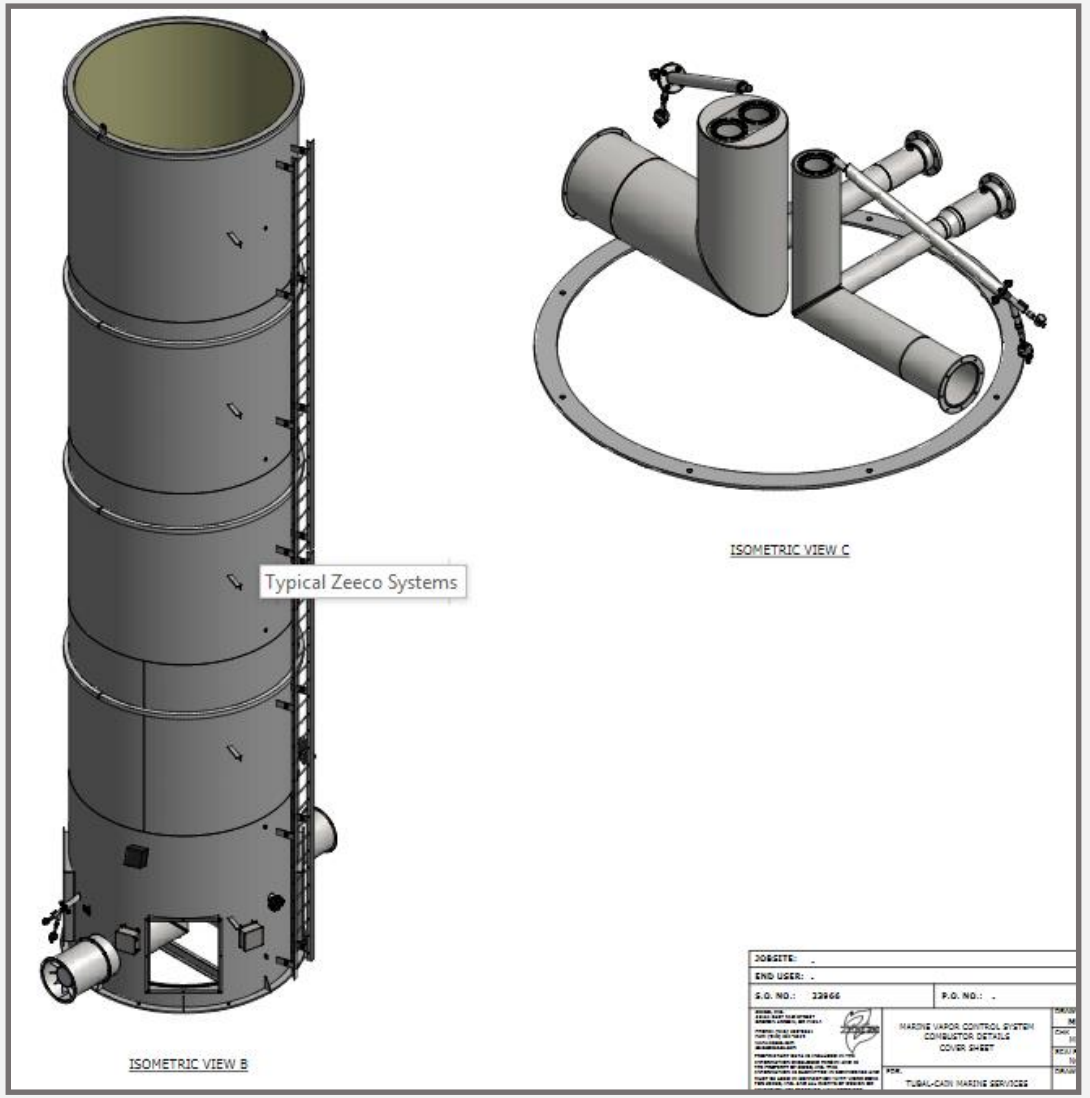
Vapor Combustion Units

Design and Operation

- Vapors offset during loading are routed to VCU.
- Hydrocarbon is safely burned inside a refractory-lined stack.
- System is designed to handle air-hydrocarbon mixture safely.

Benefits:

- Vapors are burned instead of being released to atmosphere.
- Lower capital cost than VRU.



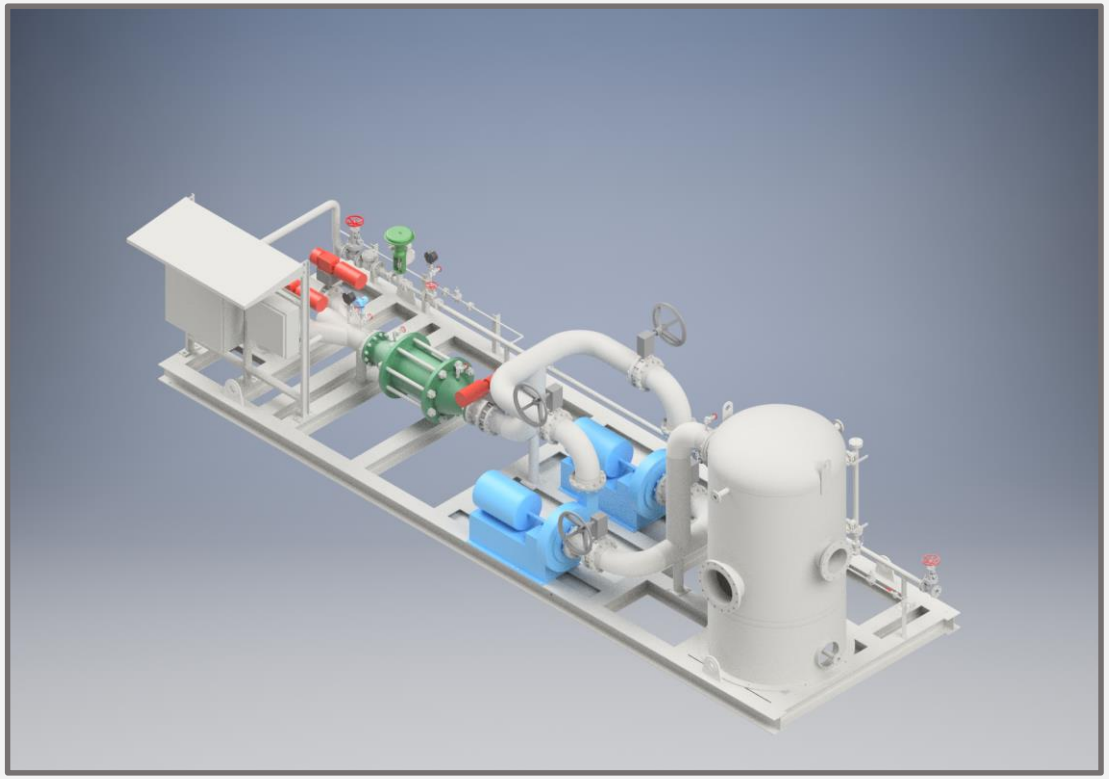
Vapor Combustion Units

Vapor Combustion Units

Vapor Combustion Units

- Dock Safety Units

- Vapor Blower Skids



Vapor Combustion Units

Vapor Combustion Units

- **Typical Order Size:**
  - $200K to $1.5MM
- **Main Competition:**
  - JZH
  - Aereon

Flare Gas Recovery Units

- **Primary Users:**
  - Refineries
  - Gas Plants
  - Chemical Plants
  - Offshore Platforms
  - Offshore FPSO

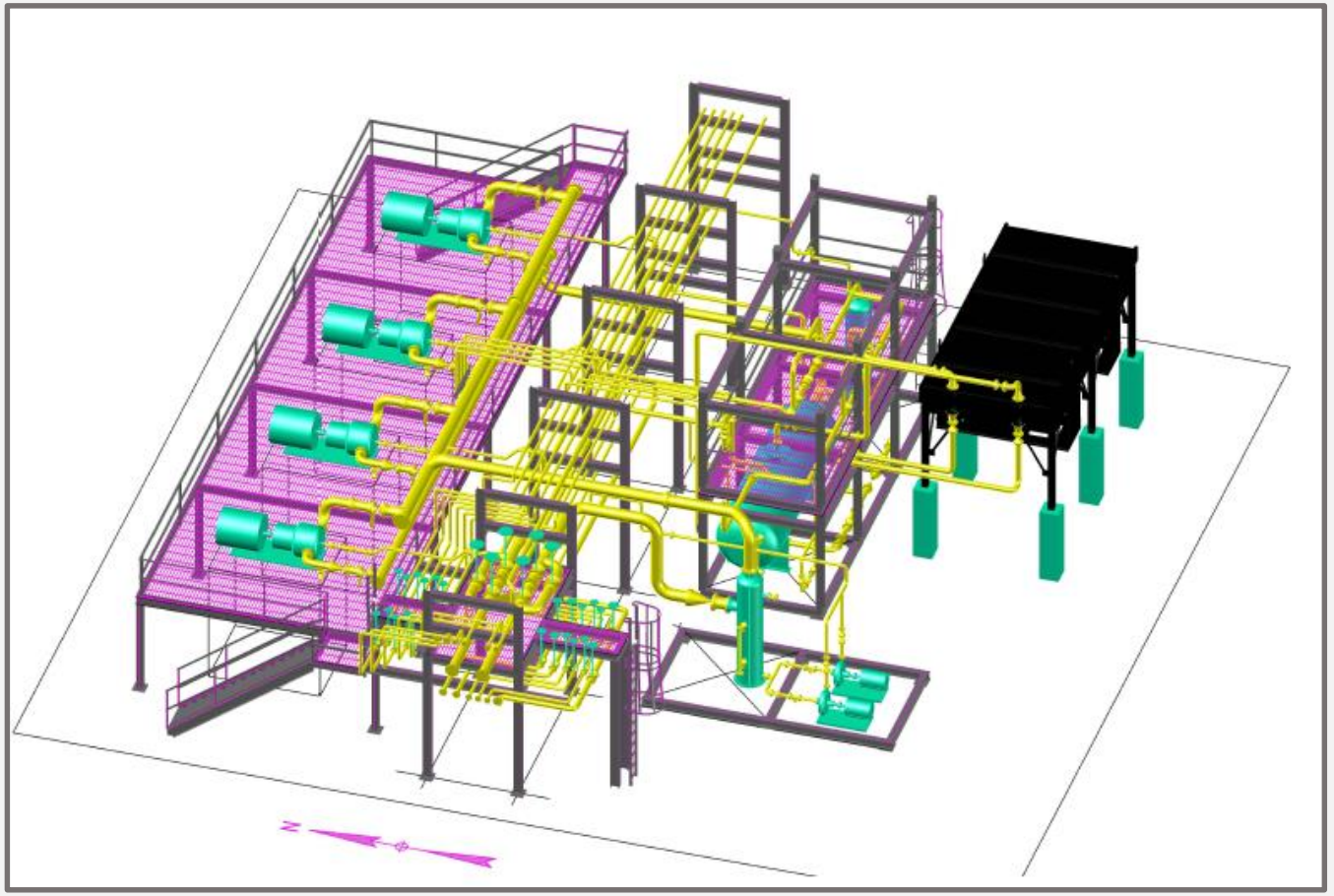
Flare Gas Recovery Units

Design and Operation

- Low-pressure waste gas that is normally sent to the flare during low flowrates is routed to the flare gas recovery system.
- FGR compresses and cools gas and sends back to the facility.

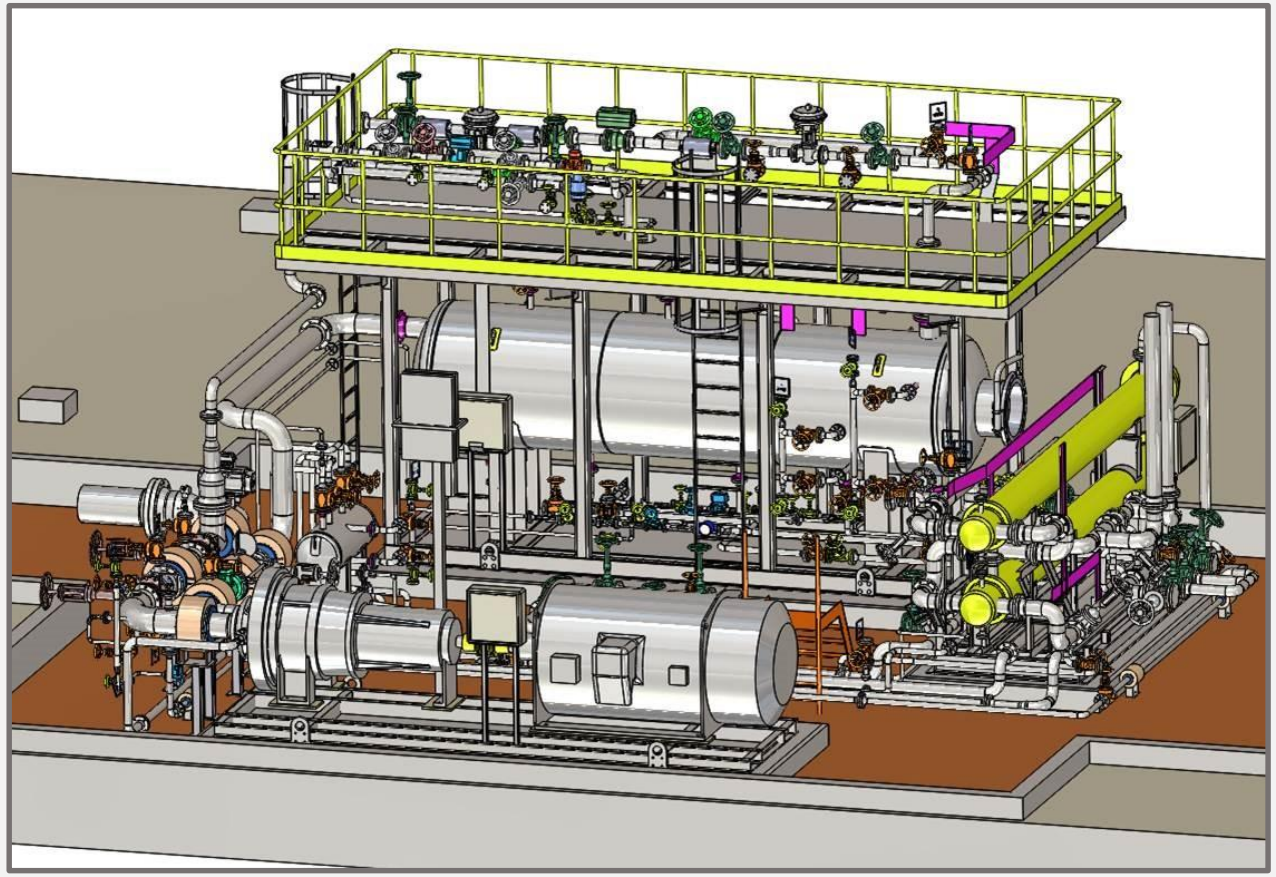
Benefits:

- Waste gas is re-used.
- Overall facility emissions reduced
- Flaring is reduced.

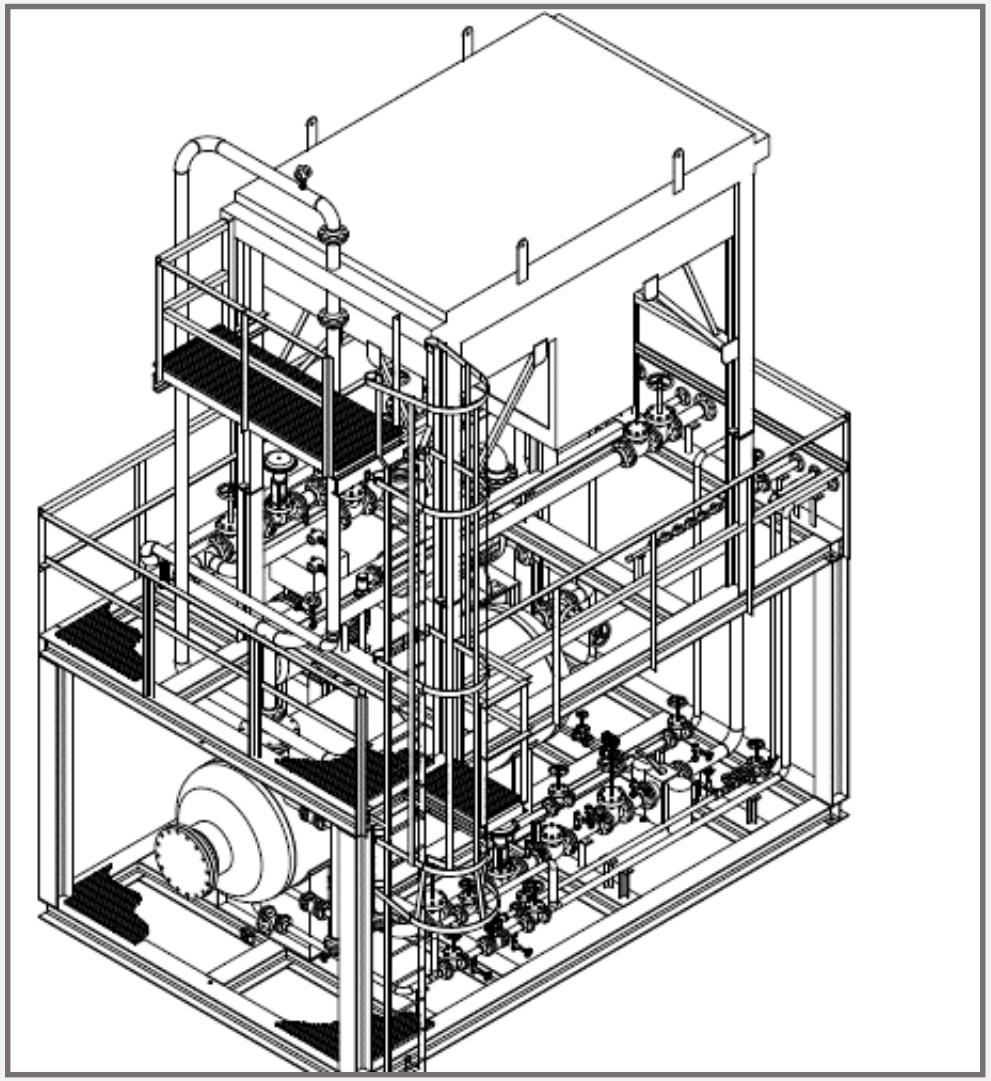


Flare Gas Recovery Units

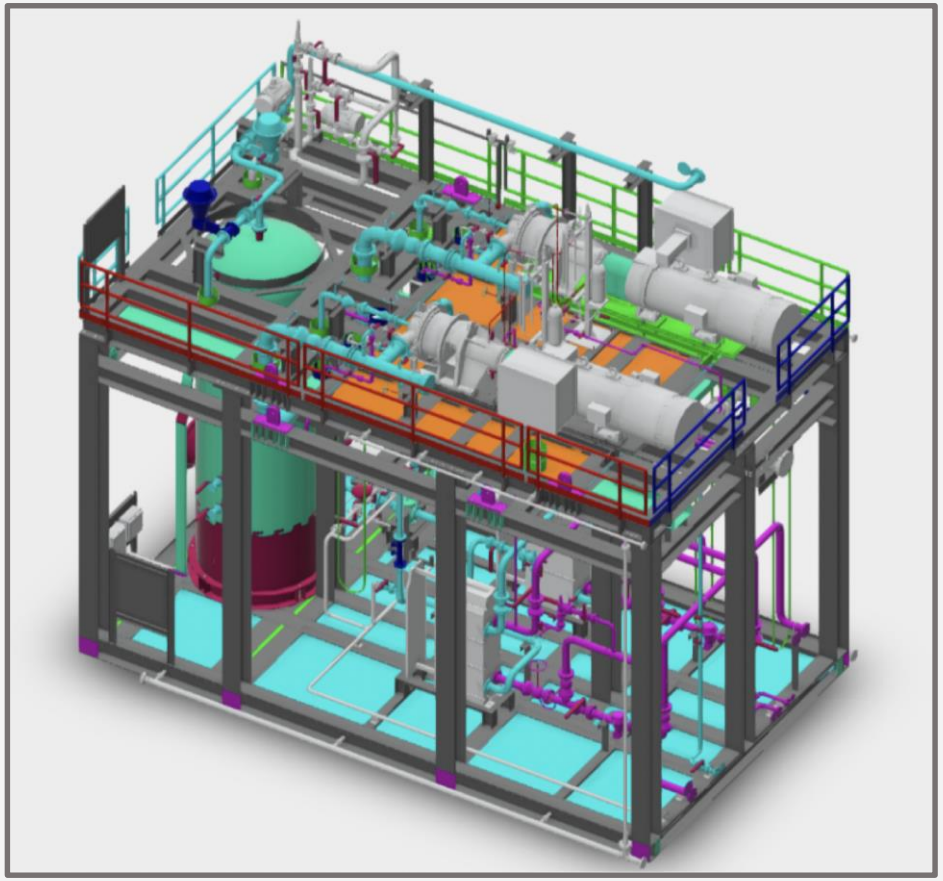
Flare Gas Recovery Units



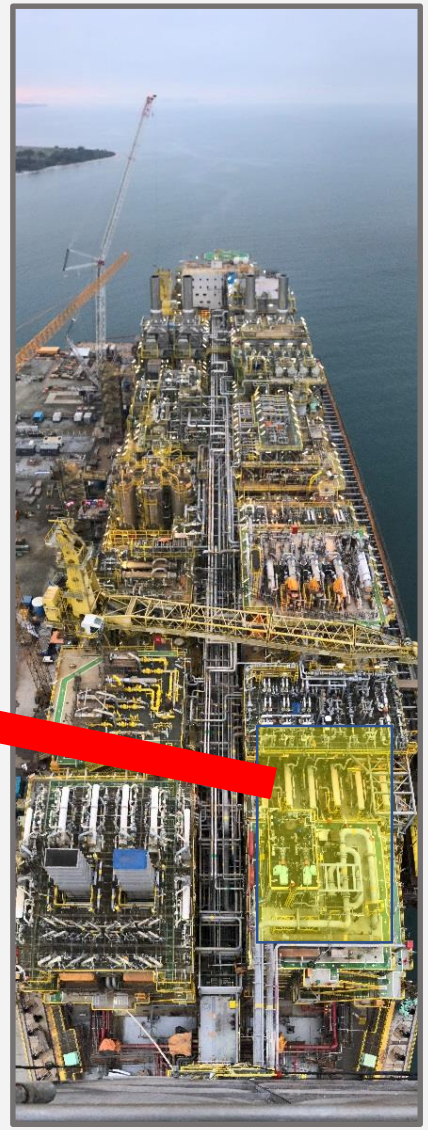
Flare Gas Recovery Units



Flare Gas Recovery Units



Flare Gas Recovery Units



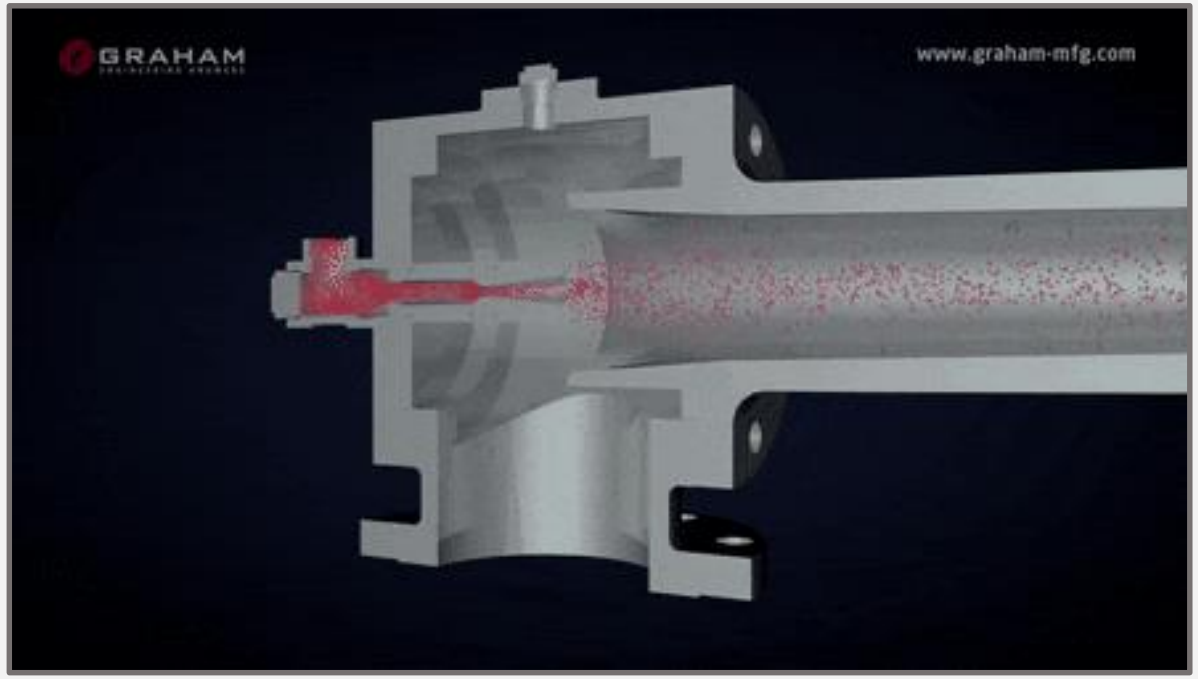
New FGR Technology: Ejectors

Primary Applictions:

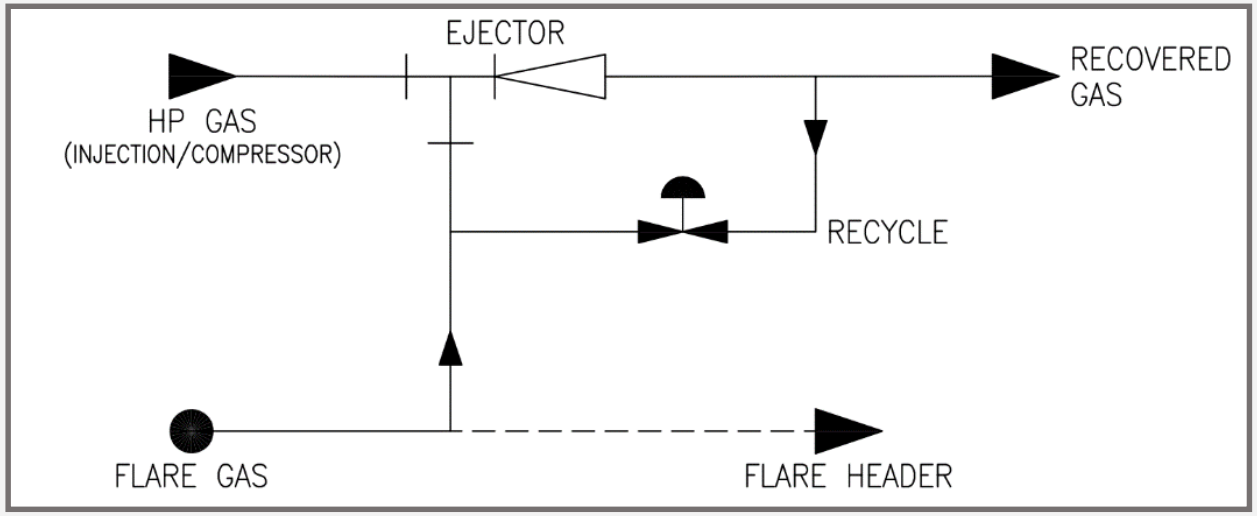
- Gas Plants and Production Separation Facilities (not applicable for refineries)

Operating Concept

- High pressure motive fluid pushed through nozzle
- Creates low-pressure zone that pulls in flare gas
- Low pressure flare gas mixes with high pressure motive fluid and forms intermediate pressure mix

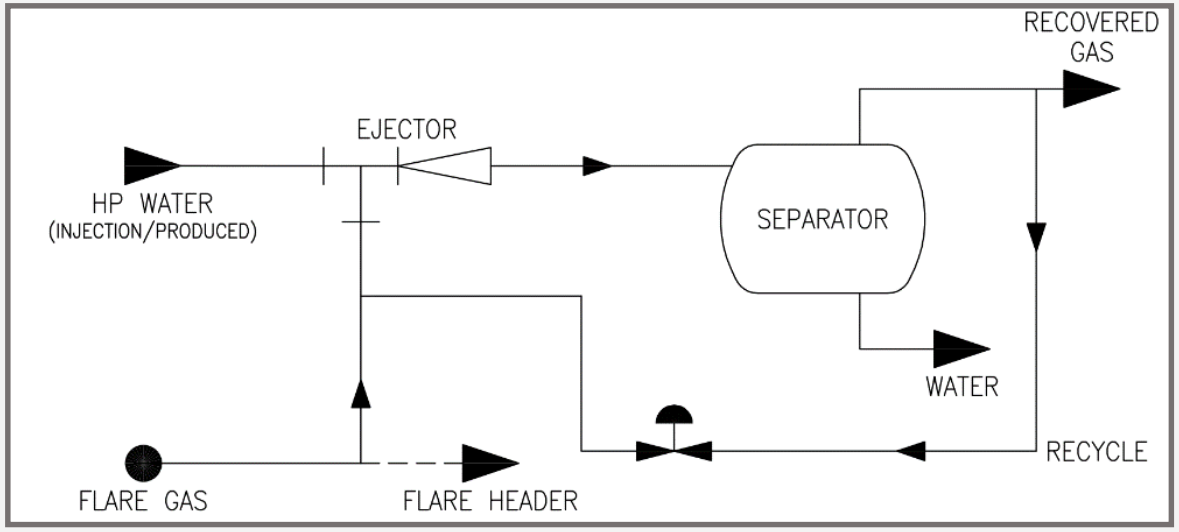


New FGR Technology: Ejectors



Gas / Gas ejector system

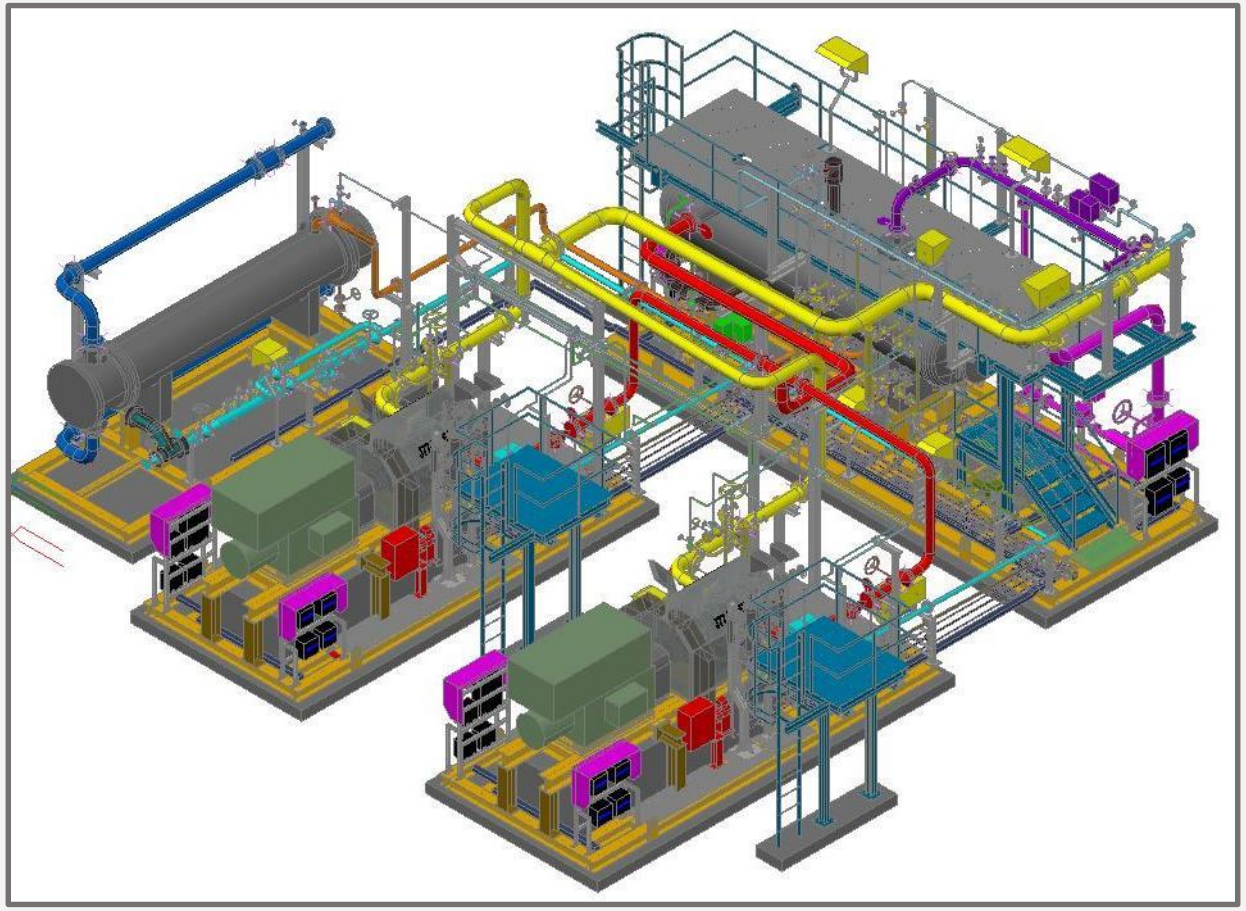
Water / Gas ejector system



New FGR Technology: Ejectors

Flare Gas Recovery Units

- **Typical Order Size:**
  - $1.5MM to $5MM (up to $35MM)
- **Main Competition:**
  - JZH
  - Garo/GD-Nash
  - EPC's
  - Various Small, Local Companies



Applications We Are and Are Not Interested In

VRU

- We ARE interested:
  - Truck, Rail, or Marine Terminal VRU's
  - Large tank farm VRU's
- We are NOT interested:
  - Wellhead compressors
  - Small tank vapor compressors

VCU

- We ARE interested:
  - Truck, Rail, or Marine Terminal VCU's
  - Large tank farm VCU's
- We are NOT interested:
  - Overseas Biogas, Landfill, and Digestor Flares or Combustors

FGRU

- We ARE interested:
  - Refinery, Gas Plant, Chemical Plant, or Offshore Platform/FPSO FGRU
- We are NOT interested:
  - Associated or Stranded Gas Recovery at Oil Wells

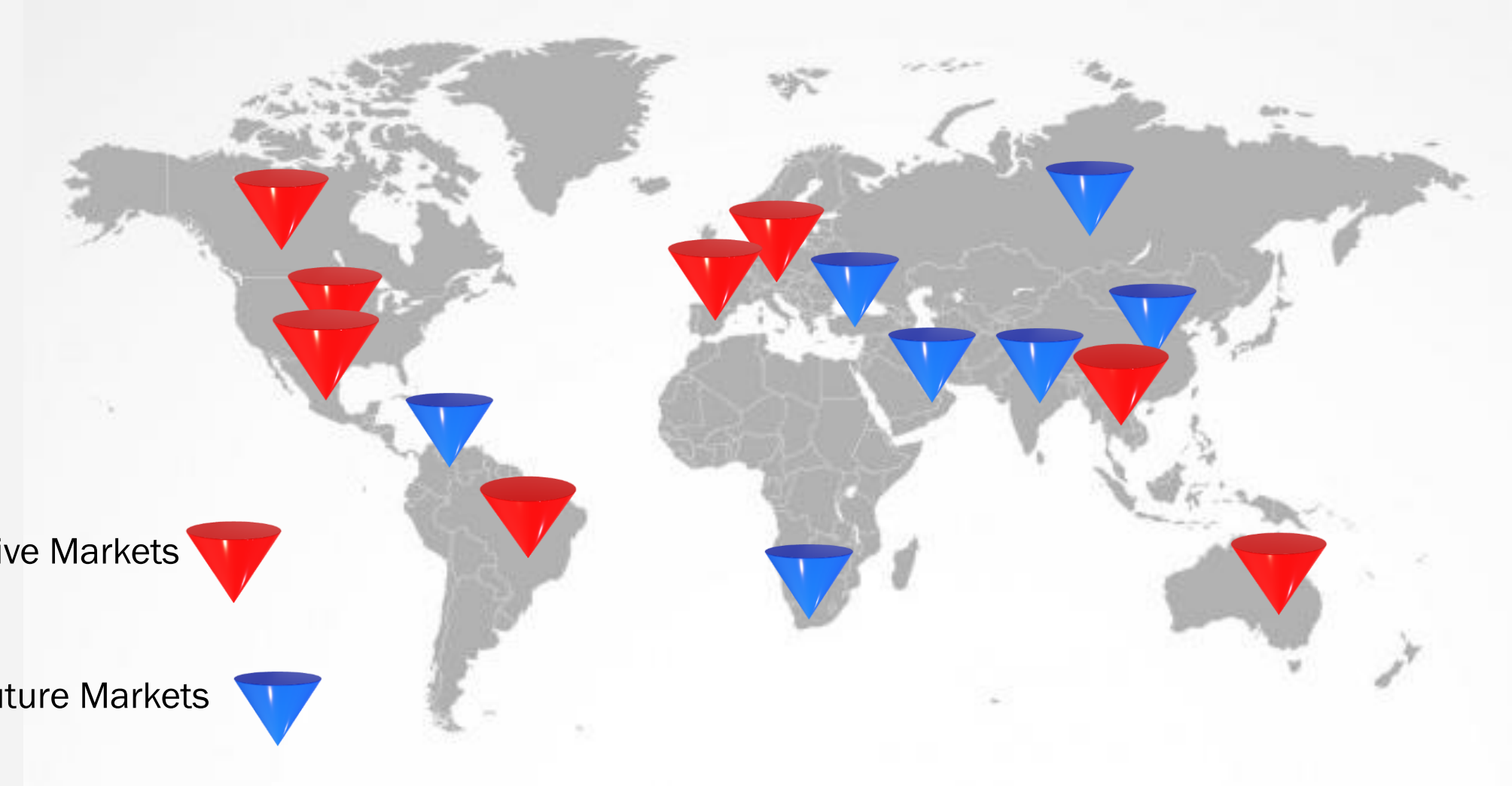
Tips on Finding Leads and Projects

Tips on Finding Leads and Projects

VRU and VCU

- Environmental Regulations
  - Examples from US and Mexico
- Loading Terminal Projects
  - Refined Product Distribution
  - Loading Arm and Tank companies will always be involved.
- Logistics or Transportation Divisions
- Terminals can be connected to a Refinery or can be stand-alone
- Truck terminals will be supplied product by a pipeline

VRU and VCU Active Markets



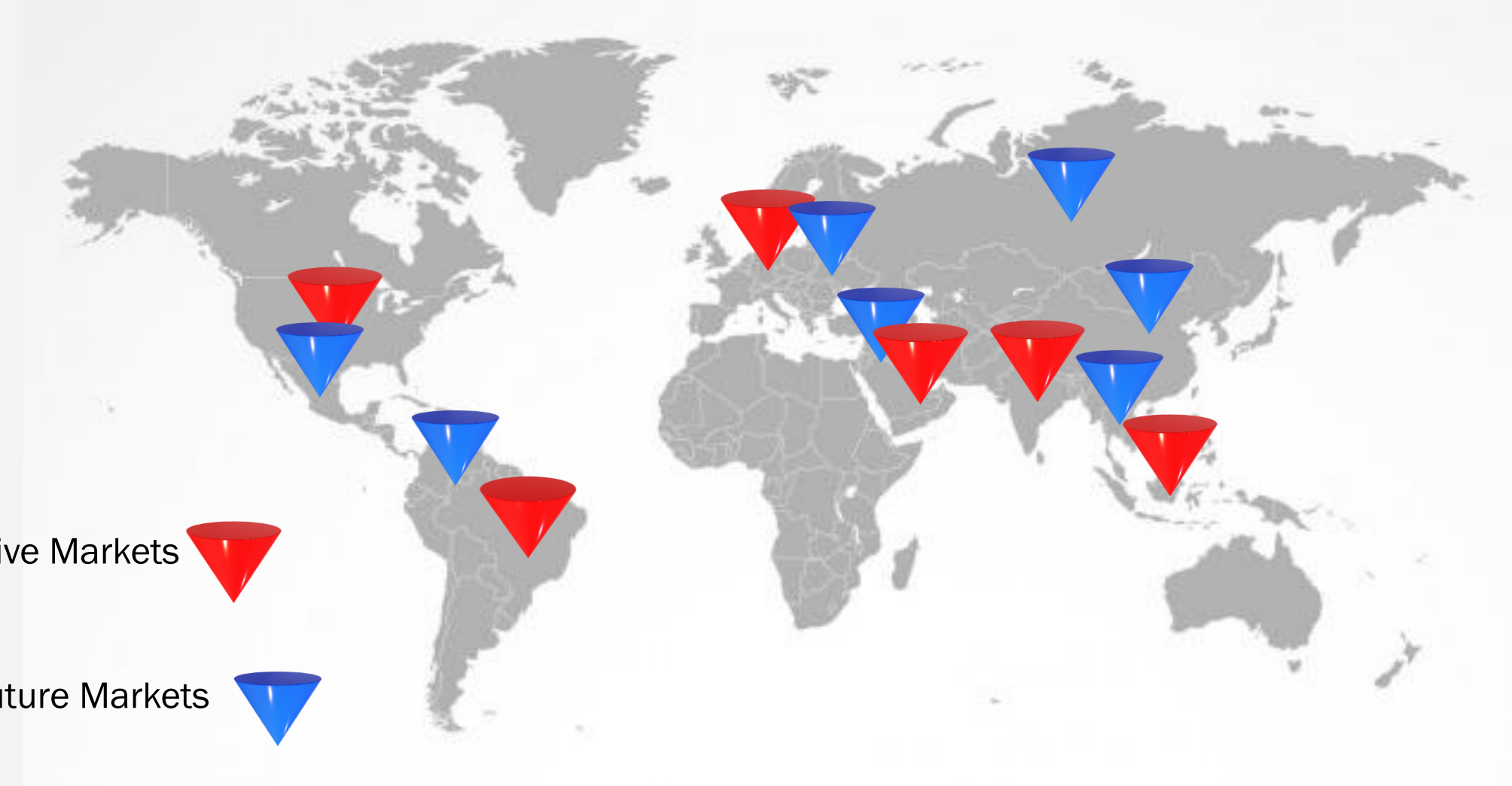
Current Active Markets

Potential Future Markets

Tips on Finding Leads and Projects

- FGRU
  - Environmental Regulations
  - Company Initiative to Reduce Flaring
  - Community Complaints about Flaring
  - Rarely driving by “payback”

FGRU Active Markets



Current Active Markets

Potential Future Markets

Regional Groundwork Needed for Success

Regional Groundwork Needed for Success

VRU, VCU, and FGR

- Get in Early Enough
- Pay attention to upcoming Environmental Regulation Changes or Company Environmental Changes
- Develop Contacts with Customers and End Users
- Make sure AML is limited to qualified suppliers
- Local Fabrication and/or Local Partner
- Service and Aftermarket Support (VRU/VCU mainly)

Competitor Analysis

Competitor Analysis

John Zink – Hamworthy

- ***Products:***
  - VRU, VCU, and FGR
- ***Strengths:***
  - Long user list
  - Strong service group
  - Good industry reputation
  - Lots of standards and go-by
  - Ultra-Low NOx (NOxStar) VCU design
  - Overseas fab experience/capability

Competitor Analysis

John Zink – Hamworthy

- ***Weaknesses:***
  - Inflexibility with specs on some VCU projects
  - Arrogance
- ***Other Points to Note:***
  - JZH uses their Tulsa shop to do most of their VRU projects
  - JZH Luxemburg recently had their Aramco 9COM number for VRU suspended
  - Complicated design and safety issues with NOxStar VCU design
  - JZH tends to hit customers with LOTS of adders post-order

Competitor Analysis

John Zink – Hamworthy

- ***Angle to Approach with Customers:***
  - Capitalize on customers that are frustrated with JZH
  - Zeeco will be more flexible to work with
  - Zeeco will be more responsive
  - We supply all the same products…but we do it better

Competitor Analysis

Aereon

- ***Products:***
  - VRU, VCU, and limited cases of FGR
- ***Strengths:***
  - Long user list for VRU/VCU
  - Lots of standards and go-by for VRU/VCU
  - HORI Pumps Exclusive agreement
  - Ultra-Low NOx (CEB) VCU design
  - Aggressive on price

Competitor Analysis

Aereon

- ***Weaknesses:***
  - Very limited experience/user list for FGR
  - Limited engineering/service resources due to EXTENSIVE layoffs and employee turnover over last 2 years
  - No test facility
- ***Other Points to Note:***
  - Aereon ownership (investment group) are actively trying to sell the company

Competitor Analysis

Aereon

- ***Angle to Approach with Customers:***
  - Aereon will not be a reliable company to work with long-term
    - Taking jobs at a loss to pad sales numbers
    - Might not support equipment in future for service/warranty
  - Aereon poor execution of high-spec jobs (UAE and P66 Freeport)
  - Aereon lack of personnel experienced with high-spec jobs

Competitor Analysis

- Garo:
  - *Products:*
    - FGR
  - *Strengths:*
    - Long user list
    - Liquid Ring Compressor manufacturer
    - Seen as the industry leader for FGR

Competitor Analysis

Garo:

- ***Weaknesses:***
  - They don't know anything about Flare systems and cannot make sure the FGR is safely integrated with the Flare
  - Cannot design/provide deep liquid seal drums
  - Prefer building ALL projects in Italy – price disadvantage
- ***Other Points to Note:***
  - Garo keeps changing ownership and it appears they will soon be merging with Ingersoll Rand. This may make them less nimble and could result in them losing experienced people.

Competitor Analysis

Garo:

- ***Angle to Approach with Customers:***
  - If there is a Flare and/or Liquid Seal drum then it is better to get all from one company to ensure safety and compatibility
  - Our ability to build FGR systems at various overseas locations may give us a price advantage
  - When Garo thinks they are the only bidder, they get greedy with their pricing

Competitor Analysis

- EPC's:
  - *Products:*
    - FGR
  - *Strengths:*
    - EPC may try to offer FGR at a lower cost as part of their main order
  - *Weaknesses:*
    - FGR design requires skill and understanding of the FGR and also the impact on the Flare package
      - Example: SIHI FGR systems
    - EPC's do not know how to design deep liquid seals
  - *Angle to Approach with Customers:*
    - Try to get involved early and make sure the AML is only companies like Zeeco and JZH that know FGR and Flares

Zeeco Strengths

Zeeco Strengths

- **Strengths:**
  - Full range of products and services:
    - VRU, VCU, FGR, Liquid Seal Drums, Flares
  - Strong service team
  - Engineering resources
  - R&D Center
  - Large user list for FGR and VCU
  - Flexible and responsive approach with customers
  - Competitive pricing
  - Worldwide company

Preparing Quotes

Preparing Quotes

Information Needed:

- Zeeco website has inquiry data sheets for VRU, VCU, and FGR

Time Needed:

- VCU:
  - 1 week preferred for budget bids
  - 2-3 weeks preferred for firm bids
- VRU and FGR:
  - 2 weeks preferred for budget bids
  - 3 weeks preferred for firm bids
  - 4 weeks preferred for high-spec firm bids
- More time will be needed if critical design information is missing
- Include Quote Numbers on Correspondence

Q&A

GO ZEECO

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