

## Technical Assessment of Beneficial Use in Handling Gas

*Rule 1118.1 – Control of Emissions from Non-Refinery Flares*

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### INTRODUCTION

- Outline the scope of work for contractor to address in the technical assessment

### BACKGROUND

- Industries that generate excess gas
  - Oil and gas extraction/production sites
  - Landfills
  - Wastewater treatment/Other digesters
- Gas composition and emission consequences (VOC, GHG, Toxics) from:
  - Subsurface crude oil exploration
  - The mixing of refuse material
  - Decomposition of organic waste
  - Wastewater treatment and digestion
- Current handling of gases (% of gas flared)
- How excess gas is regulated
  - Rule 1118.1 – Non-Refinery Flares
    - Capacity caps that will encourage beneficial use

### BENEFICIAL USE ASSESSMENT

**For each of the technologies and affected industries (both small and large facilities) assess:**

- ✓ Emissions data profiles (lifecycle analysis)
    - Emission savings
    - Emissions generated
  - ✓ Cost and potential revenue
  - ✓ Hurdles?
  - ✓ Potential systems problems (safety/reliability)?
  - ✓ Incentives?
- How do these change as you change the use of the gas/energy generated?

- Technologies
  - Current types
    - Micro-turbines/Turbines
    - Engines
    - Fuel cells
    - Compressing gas to CNG or LNG
  - Near future (e.g., Sierra Energy FastOx Gasification)
  - Long-term future (e.g. SoCalGas projects)

## DRAFT OUTLINE

- References
  - World Bank's Global Gas Flaring Reduction Partnership White Paper
  - Rule 1118.1 staff report
  - CARB Draft White Paper
  - Oilfield Flare Gas Electricity Systems (OFFGASES) Project
- Potential Uses for Gas/Generated Energy
  - Transportation Fuel (Gas cleanup)
  - Pipeline Injection (Gas cleanup)
  - Energy Generation
    - Combined heat and power
    - Battery storage (excess power)
    - Microgrid (distributed generation)
- Potential Hurdles to Beneficial Use
  - Regulatory Hurdles
    - California Public Utilities Commission (CPUC) (1 MW restriction)
    - Permitting
    - California Environmental Quality Act (CEQA)
    - Land use (local) approval – political will
    - Other regulations? (e.g., state GHG)
- Other Challenges, Observations, Suggestions or Solutions
  - Infrastructure
    - Electric grid
    - Pipeline
  - Utilities charges + restrictions (demand charge)
  - On-site gas cleanup
  - Transmission
- Cost Considerations
  - Cost of technology/other charges
    - Utility demand charge
  - Potential revenue
  - Funding/incentive opportunities
    - CARB's Low Carbon Fuel Standard (LCFS) for Renewable Natural Gas
    - U.S. EPA Renewable Gas Standard/Renewable Identification Numbers (RINs)
    - SoCalGas Tariff Program
    - Sales tax exemption for beneficial use projects
- Other Incentives
  - Green House Gas (GHG) Incentives
    - California's Global Warming Solutions Act of 2006 (AB32)
    - Senate Bill 100 – zero carbon electricity by 2045
    - Executive Order B-55-18 Carbon Neutrality by 2045 and achieve and maintain net negative GHG emissions
    - World bank Zero Routine Flaring by 2030 Initiative
  - Others

## DRAFT OUTLINE

- Emission reduction programs (RFPs)
- Rebate programs (like solar)
- Partnerships with other entities
- Potential future developments for energy/fuel incentives

### CONCLUSION

- Lessons learned from Technology Assessment
- Further action(s) to remove or help remove hurdles or encourage beneficial use of flare gas

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