Beneficial Use Technology Assessment

RULE 1118.1 WORKING GROUP #5
APRIL 23, 2020
BACKGROUND

• South Coast AQMD Governing Board adopted Rule 1118.1 – Control of Emission for Non-Refinery Flares in January 2019
  ◦ Applies to flares at Landfills, Wastewater Treatment Plants, and Oil Production sites
  ◦ Requires each flare to maintain usage below an annual capacity threshold
  ◦ To reduce flare usage, facilities are required to either use the gas beneficially or replace the flare with a low-NOx unit

• Governing Board directed staff to conduct a technology assessment on the beneficial use of flare gas

• Four Working Group meetings held since August 2019

• South Coast AQMD staff planned to request a transfer of funds during the April Governing Board Meeting but had to delay because the May 2020 Administrative Meeting was canceled due to the impacts of COVID-19
Impacts of COVID-19

• South Coast Air Quality Management District (South Coast AQMD) staff recognizes the challenges businesses and other stakeholders are experiencing with COVID-19

• Consistent with Governor Newsom's Executive Order N-29-20 (March 18, 2020), the working group meeting will only be conducted via video conferencing (Zoom) and by telephone

• South Coast AQMD staff reached out to Rule 1118.1 stakeholders to ensure they remained committed and had the resources to continue the technology assessment
• Staff is considering to proceed with the Technical Assessment using South Coast AQMD resources instead of a third party contractor

• Purpose, goals, and content will be the same as outlined in the Request for Proposal language and recently distributed project description

• Staff will continue to rely on expertise and guidance from the Working Group members

• If necessary, staff will request an extension beyond the January 2021 deadline to complete the Technology Assessment
Purpose of Technology Assessment

• Technology assessment will serve as an informative guide for facilities complying with Rule 1118.1 capacity threshold limits by increasing beneficial use of flare gas

• Document can provide guidance for those seeking alternative methods to flaring the gas

• Staff proposes to focus the Technical Assessment on three types of site (actual or representative):
  ◦ A large private landfill
  ◦ Two oil production sites (one remote and one urban)

• For the Wastewater Treatment Plants, staff will rely on the comprehensive studies conducted by that industry
Technical Assessment

Conduct a wholistic cost and NOx emission impact assessment

Identify the most beneficial alternative uses for flare gas:
- Promotes energy production
- Generate transportation fuels
- Inject gas into pipeline

Identify most cost-effective/lowest emitting technologies applicable to the type of flare gas generated
- Consideration existing site-specific conditions
- Gas quality and quantity
- Energy needs of the site
Technology Assessment

- Focus on three primary potential alternatives to gas flaring and the impacts on emissions, costs, and challenges:

**Energy Generation**
- Microturbines
- Engines
- Fuel cells
- Battery Storage
- Microgrids
- Combined Heat & Power

**Transportation Fuel**
- Compressing gas to CNG or LNG
- Gas to Liquid
- Gas to Hydrogen

**Pipeline Injection**

- Emissions
- Costs
- Challenges
Assessment will include a discussion of existing incentives to encourage beneficial use

| **Carb’s Low Carbon Fuel Standard for Renewable Natural Gas (Rng)** |
| **U.S. EPA Renewable Gas Standard/Renewable Identification Numbers (RINs)** |
| **Gas Company tariffs** |
| **Greenhouse Gas (GHG) Incentives** |
| • Assembly Bill 32 |
| • Senate Bill 100 |
| • Executive Order B-55-18 |
| • World Bank |
| **Rebates** |
| **Partnerships** |
| **Energy/Fuel Incentives** |
Industries Included in Technical Assessment

- Rely on existing studies
  - Wastewater Treatment Plants

- Perform Technical Assessment
  - Large Private Landfill
  - Urban Oil Production Site
  - Remote Oil Production Site
WASTE WATER DIGESTER GAS STUDIES

• Staff will rely on previous studies of beneficial use of digester gas conducted by the Wastewater Treatment Plants
  ◦ Lifecycle costs are provided for each alternative
  ◦ Greenhouse gas emissions are calculated – but not NOx emissions - from biogas production and use
  ◦ Advantages and disadvantages are provided for each alternative

• Technology Assessment will provide a summary of the studies and NOx emission calculations
• Volume and gas quality
  ◦ Highest volume of gas - considerable opportunity for beneficial use
  ◦ Gas clean-up required due to siloxane concentrations
  ◦ Quality of gas at closed landfills declines overtime

• Energy requirements
  ◦ Not energy intense operations
  ◦ Energy can be produced for neighboring communities

• Transportation fuel
  ◦ Numerous vehicles enter landfills

• Pipeline injection
  ◦ Cost-effectiveness will depend on location of pipeline

• Incentives
  ◦ Landfill gas qualifies as renewable natural gas
Oil Production Sites

• Volume and quality
  ◦ Small sites produce a low volume of gas
  ◦ High gas quality - considerable opportunity since minimal cost for clean-up

• Energy requirements
  ◦ Small sites not energy intense
  ◦ Energy can be produced for neighboring communities
  ◦ CPUC has limits on the amount of energy that can be sold on the grid

• Transportation fuel
  ◦ Remote setting has potential to compress gas and truck off site
  ◦ Urban setting has potential for fueling station near site

• Pipeline injection
  ◦ Cost-effectiveness will depend on location of pipeline

• Incentives
  ◦ Produced gas is not considered renewable natural gas
Next Steps

- Finalize the draft Project Description document to guide the Technology Assessment
- Determine the sites that will be evaluated (actual or representative)
  - Set up virtual site visits if an actual site is selected
- Start Wastewater Treatment assessment based on the provided studies
- Continue Working Group Meetings
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