

INCREMENTAL COST-EFFECTIVENESS ANALYSIS

PROPOSED NEW RULE 69.7 – LANDFILL GAS FLARES

The California Health and Safety Code Section 40920.6 (a) requires air pollution control districts to identify one or more potential control options that achieve at least the same benefit as the proposed new rule, assess the cost-effectiveness of those options, and calculate the incremental cost-effectiveness of each identified option. Incremental cost-effectiveness is defined as the difference in control costs divided by the difference in emission reductions between two potential options achieving the same emission reduction goal.

The only potential option that achieves at least the same or better environmental benefits from controlling nitrogen oxides (NO_x) emissions from the operation of landfill gas flares at municipal solid waste landfills would be to adopt the lower NO_x emission limits of Rule 1118.1 (Control of Emissions from Non-Refinery Flares) of the South Coast Air Quality Management District (SCAQMD).

Table 1. San Diego Air Pollution Control District (SDAPCD) Rule 69.7 – Proposed New Rule

NO _x Emission Reductions	25.5 tons per year = 51,000 pounds per year ¹
Annualized Cost for Proposed Rule 69.7	\$16,026 per year ²
Cost-Effectiveness	\$0.31 per pound of NO _x reduced

Table 2. SCAQMD Rule 1118.1 - 2019

NO _x Emission Reductions	70.2 tons per year = 140,400 pounds per year
Annualized cost	\$1,885,041 per year
Cost-Effectiveness	\$13.43 per pound of NO _x reduced

Table 3. Incremental Cost-Effectiveness

Incremental Annualized Cost	$\$1,885,041 - \$16,026 = \$1,869,015$ per year
Incremental Annual Emission Reductions	$140,400 - 51,000 = 89,400$ pounds per year
Incremental Cost-Effectiveness	\$20.91 per pound of NO _x reduced

¹ Assumed NO_x reductions are only representative of the change in the default emission factor currently assigned to landfill gas flares in the SDAPCD Emissions Inventory (EI), should proposed new Rule 69.7 be adopted. The current default NO_x emission factor for landfill gas flares in the EI is 0.08 lbs/MMBtu. Should proposed new Rule 69.7 be adopted, the default factor will decrease to 0.06 lbs/MMBtu. The emission factor change will result in an assumed decrease of 25.5 tons per year of NO_x only in the SDAPCD EI. However, because all facilities subject to the proposed rule currently operate flares that already comply with the proposed NO_x limit of 0.06 lbs/MMBtu, no emission reductions in practice will be achieved, nor assumed for State Implementation Plan purposes.

² Assumed SDAPCD source testing fees.

As shown in Table 3. Incremental Cost-Effectiveness, each extra pound of NOx emissions that would be reduced by adopting the more stringent limits of SCAQMD Rule 1118.1 would result in compliance costs of \$20.91 for existing facilities in San Diego County due to the additional expense of advanced emission-control technology. This cost significantly exceeds both the EPA's Reasonably Available Control Technology (RACT) threshold for NOx emission control measures, as well as the cost-effectiveness of the District's other prohibitory rules, therefore the more stringent limits are not recommended at this time.