ATMOSPHERIC DYNAMICS, INC
Meteorological & Air Quality Modeling

Memo

To: Cassandra van der Zweep/Supervising Planner, City of San Jose
From: Gregory Darvin/Atmospheric Dynamics, Inc.
Date: December 3, 2019
Subject: China Mobile Project Impact Comparison: SP18-054 vs. Kohler Engine Update

The following summary presents a comparison of the project impacts under SP18-054 as analyzed in the IS/Addendum (March 2019), which utilized the Caterpillar engine option, to the updated (October 2019) project analysis that utilized the Kohler engine option. Table 1 presents a comparison of the engines and the associated emissions between the two engine options. Please note that the SP18-054 IS/Addendum impact analyses, as part of the CEQA requirements utilized the average load case of 75% while the Kohler option looked at the maximum 100% load case, which is required for the BAAQMD air quality permit process. Thus, in some of the comparisons, the Kohler engine may have slightly higher emissions. Other than NO_x where indicated, all emissions presented for the SP18-054 IS/Addendum represents 50 hours per year. All Kohler emissions are based on 50 hours per year.

Table 1 Project Impacts Comparison

	Generator Approved in SP18-054 IS/Addendum	Proposed Kohler Generator	BAAQMD CEQA Significance Level
Manufacturer	Caterpillar	Kohler	-
Model	C175-20	KD83V16	-
Number of Engines	15	15	-
Horsepower	4,636	4,331	-
Assessed Engine Load	75%	100%	-
Run Time	50 hrs/yr (each engine) 28 hrs/yr (each engine) to remain less than 10 tpy (per mitigation in IS/Addendum)	50 hrs/yr (each engine)	50 hrs/yr
NO_x	Unmitigated: 17.64 tons per year (50 hrs/yr) With IS/Addendum Mitigation: 9.8 tons per year (28 hrs/yr)	Unmitigated: 16.11 tons per year (50 hrs/yr) With Required BAAQMD Supplied Offsets: 0 tons per year (50 hrs/yr)	10 tons per year
PM10/2.5 (DPM)	0.20 tons per year	0.29 tons per year	15/10 tons per year
GHG	1,405 tons per year	1,704 tons per year	-
Annual PM2.5 (ug/m^3)	0.0054	0.0033	0.3 ug/m3
Health Risk Impact (Cancer Risk)	4 per one million	1.84 per one million	>10 per one million

As summarized in Table 1, the proposed use of the Kohler generators would result in impacts that are less than the BAAQMD CEQA significance thresholds and less than those in the approved SP18-054 analysis. While the emissions of PM10/2.5 (DPM) and GHG for the Kohler option may be a bit higher than SP18-054 analysis, this directly due to the differences in the engine loads between the two analysis (75% vs 100%).

The NO_x emissions for the Kohler option at 50 hours per year are less than the SP18-054 IS/Addendum analysis at 50 hours per year. The SP18-054 IS/Addendum took a synthetic limit of 28 hours per year to drop below the BAAQMD CEQA threshold of 10 tons per year. This was accomplished in order to avoid CEQA mitigation for NO_x.

Notwithstanding that the Kohler result in emission increases requiring CEQA mitigation, the BAAQMD will be required to provide emission reduction credits from the BAAQMD Emissions Bank for NO_x as further described here for both engine options. The BAAQMD is required to track all offset account debits for Federal New Source Review (NSR) equivalency which allows the BAAQMD to demonstrate that there is no net increase in non-attainment pollutants such as NO_x and VOCs, which are precursors to ozone formation. At the same time, the use of Small Facility Banking Account allows the BAAQMD to accommodate for regional economic growth. Therefore, BAAQMD has assumed the responsibility of providing the necessary offsets for exempt sources, i.e. minor NSR sources or sources with any emissions of NO_x not exceeding 35 tons per year (see Regulation 2, Rule 2, Section 302: the BAAQMD will provide the necessary offset for sources which emit greater than 10 tons per year but less than 35 tons per year from the Small Facility Banking Account). For federal equivalency demonstrations, BAAQMD uses an offset ratio of 1.0-to-1.0 for all emission increases less than 35 tons per year.

Therefore, notwithstanding that the use of the Kohler engines at 50 hours per year will result in emission increases that would require CEQA mitigation (increase > 10 tons per year), based on the requirements of Rule Regulation 2, Rule 2 and the offset accounts/tracking requirements under Regulation 2, Rule 4 (Emissions Banking), CMI contends that the use of the BAAQMD offset account for minor NSR projects would fully mitigate the proposed project NO_x emissions of 16.11 tons per year and would reduce the project impact of NO_x to a level of insignificance. While the BAAQMD will provide NO_x emission offsets to the CMI project, it should also be noted that the BAAQMD will no longer provide such offsets in the future.