

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Attachment 1 to the Governing Board Resolution for Proposed Amended Rule 1110.2 –  
Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines (ICEs)**

**Statement of Findings, Statement of Overriding Considerations and Mitigation  
Monitoring Plan**

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**SCAQMD No. 280307JK**

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## **INTRODUCTION**

Proposed amended Rule (PAR) 1110.2 – Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines (ICEs), is a “project” as defined by the California Environmental Quality Act (CEQA) (California Public Resources Code §§21000 et seq.). The South Coast Air Quality Management District (SCAQMD) is the lead agency for the proposed project and, therefore, has prepared an Environmental Assessment (EA) pursuant to CEQA Guidelines §15252 and SCAQMD Rule 110. The purpose of the EA is to describe the proposed project and to identify, analyze, and evaluate any potentially significant adverse environmental impacts that may result from adopting and implementing the proposed project. The Draft EA was circulated to the public for a 45-day review and comment period from November 2, 2007, to December 18, 2007. The SCAQMD received one comment letter during the 45-day public review and comment period. Responses were prepared for the comments received during the comment period.

Note that some modifications and updates have been made to the proposed amended regulation since the release of the Draft EA based on input from the regulated industry and other parties to the rule development staff. Thus, some changes were necessary to make the revised Draft EA into a Final EA. However, these modifications and updates were evaluated by staff and it was concluded that they do not constitute “significant new information”<sup>1</sup> and, therefore, do not require recirculation of the document pursuant to CEQA Guidelines §15088.5.

## **SUMMARY OF THE PROPOSED PROJECT**

PAR 1110.2 partially implements the 2007 AQMP Control Measure MSC-01 – Facility Modernization, which requires facilities not participating in the NOx Regional Clean Air Incentives Market (RECLAIM) Program to retrofit or replace existing equipment at the end of a predetermined life span to achieve NOx emissions equivalent to best available control technology (BACT). In addition to achieving NOx emission reductions equivalent to BACT, another objective of PAR 1110.2 is to achieve further VOC and CO emission reductions based on the cleanest available technologies. PAR 1110.2 would also increase engine compliance through improved monitoring, recordkeeping and reporting. PAR 1110.2 would also implement SB 1298 distributed generation (DG) emission standards for new electrical generating engines. Finally, a major objective of PAR 1110.2 is to address and correct issues also identified by EPA relative to the existing version of Rule 1110.2, so it can be approved for incorporation into the SIP.

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<sup>1</sup> Pursuant to CEQA Guidelines §15088.5, “Significant new information” requiring recirculation include, for example, a disclosure showing that:

- (a) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (b) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- (c) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
- (d) The draft EA was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

Staff proposes the following amendments to Rule 1110.2:

- Strengthen source testing requirements, add an inspection and monitoring plan, install air-to-fuel ratio controllers, and additional CEMS requirements for groups of engines over 1,500 horsepower to improve compliance. An exception from the quarterly CO monitoring is included for diesel and other lean-burn engines that are subject or Regulation XX or have a NO<sub>x</sub> CEMs and that are not subject to a CO limit more stringent than 2000 ppm. The engines would still be subject to the I&M plans
- Eliminate the efficiency correction of the current NO<sub>x</sub> and VOC emission limits, except for biogas engines until 2012 where operators limit natural gas usage to 10 percent of total fuel use and test for actual engine efficiency. Eliminate the efficiency correction of the current NO<sub>x</sub> and VOC emission limits for biogas engines after 2012. The calculation of the monthly facility biogas use percentage may exclude natural gas fired during: any electrical outage at the facility; Stage 2 or higher electrical emergencies called by the California Independent System Operator Corporation; and when precipitation causes a sewage treatment plant to exceed its design capacity. The Executive Officer may approve the burning of more than ten percent natural gas in a land fill or digester gas-fired engine, when it is necessary, if the engine required more natural gas in order for waste heat recovery boiler to provide enough thermal energy to operate a sewage treatment plant, and other boilers at the facility are unable to provide the necessary thermal energy.
- Reduce emissions consistent with the 2007 AQMP, new NO<sub>x</sub> and VOC emission limits equivalent to current BACT and a reduction of the CO limit from 2000 ppm to 250 ppm. These limits will phase in from 2010 to 2012.
- Require new electrical generating engines to partially comply with CARB DG standards.
- Clarify the exemption status of non-road engines, and remove the emission standard requirements for portable engines.
- Remove exemptions for ski area engines and engines outside South Coast and Salton Sea Air Basins
- Add new exemptions for startups, overhauls, and initial commissioning of engines.
- Include in the resolution direction for staff to not submit the 2012 biogas limits as part of the SIP submittal, conduct a technology assessment to assure that cost-effective technology is available for biogas engines to comply with the proposed biogas limits by 2010.

**SIGNIFICANT ADVERSE IMPACTS WHICH CAN BE REDUCED BELOW A SIGNIFICANT LEVEL OR WERE CONCLUDED TO BE INSIGNIFICANT**

The EA identified health risk from diesel emergency engine exhaust particulate and global warming as potentially significant adverse environmental impacts that can be reduced to a level determined not to be significant. There were two environmental topics, energy and solid/hazardous waste that were identified as potentially significant in the NOP/IS, but were determined not to be significant in the EA.

### **Health Risk from Diesel Exhaust Particulate**

Health risk is evaluated on a localized level by evaluating the adverse impacts of a facility on the near-by community. The proposed project would generate potential health risks from diesel truck trips associated with ammonia, LNG and diesel fuel. Facility operators who replace biogas ICEs with alternative technologies instead of complying with PAR 1110.2 may need diesel emergency engines to make up energy losses due to efficiency differences between the biogas ICEs and alternative technologies. Non-biogas facility operators who replace ICEs with electric motors may need diesel emergency engines to provide energy equivalent to the non-biogas ICE during emergencies.

The worst-case carcinogenic health risk could occur at a facility that had both biogas and non-biogas emergency engines. However, the carcinogenic health risk at any facility with both biogas and non-biogas emergency engines is expected to be below the sum of the health risk of the biogas facility with the largest carcinogenic risk and the non-biogas facility with the largest carcinogenic health risk (3.4 in one million + 18 in one million = 21.4 in one million), which is greater than the significance threshold of ten in a million ( $1.0 \times 10^{-5}$ ). Non-carcinogenic health risk was not determined to be significant. Therefore, PAR 1110.2 would be significant for carcinogenic health risk from diesel particulate emissions.

To further reduce diesel PM emissions diesel particulate filters (DPFs) will be required for any emergency diesel backup generators used at non-biogas facilities where operators install electric motors and the carcinogenic health risk exceeds 10 in one million ( $1 \times 10^{-5}$ ). DPFs allow exhaust gases to pass through the filter medium, but trap diesel PM. Depending on engine baseline emissions and emission test method or duty cycle, DPFs can achieve a PM emission reduction of greater than 85 percent. DPFs installed on diesel backup generators are, however, expected to reduce significant adverse cancer risks to less than significant. The maximum cancer risk at the largest non-biogas facility can be reduced from approximately 18 in one million ( $1.8 \times 10^{-5}$ ) to approximately 4.5 in one million ( $4.5 \times 10^{-6}$ ), which is less than the SCAQMD's cancer risk significance threshold of 10 in one million ( $1.0 \times 10^{-5}$ ). Even if the carcinogenic health risk from both the biogas and non-biogas facilities were added together (21.4 in one million or  $2.14 \times 10^{-5}$ ), DPF would reduce the carcinogenic health risk to less than significant ( $2.14 \times 10^{-5} \times (1-0.85) = 3.21$  in one million). Many engines can also limit their testing to be less than 30 hours per year to reduce carcinogenic health risk to below 10 in one million.

### **Global Warming**

Preliminary evaluation of the proposed project indicated that it could result in a net increase in CO<sub>2</sub> emissions (a greenhouse gas), primarily from construction activities to install control devices, new engines, etc. However, SCAQMD staff assumed for the CEQA analysis that, for some categories of ICEs, it may be less costly to install electric motors than comply with PAR 1110.2. SCAQMD staff identified 225 ICEs where it would be less costly to install electric motors. To provide a conservative analysis, staff assumed that operators of only 75 percent of these engines, 169 engines, would install electric motors. Electric motors are estimated to have a lifespan of 10 years. For the purposes of addressing the GHG impacts of PAR 1110.2, the overall impacts of CO<sub>2</sub> emissions from the project were estimated and evaluated from initial implementation of the proposed project in 2009 through 2019 (i.e.,

over the lifespan of the electric motors). While the analysis was only completed over the lifespan of the electric motor, it is expected that the reduction would continue, since facility operators would be expected to replace electric motors with another electric motor once the original is replaced. The analysis also took into account CO2 emission increases from utilities to produce electricity to run the electric motors.

It is possible that fewer than 169 non-biogas engines could be replaced with electric motors, but, given the lower costs of installing and operating electric motors, it is likely that at least 15 non-biogas engines or more would be replaced with electric motors. As a result, the analysis only took CO2 emission reduction credit for the replacement of 15 ICES with electric motors. The analysis showed that the CO2 emission reductions from PAR 1110.2 with replacing ICES with electric motors were greater than the CO2 emission increases expected from PAR 1110.2 without replacing ICES with electric motors. Therefore, PAR 1110.2 is assumed to be less than significant for global warming.

## **Energy**

### ***Total Energy Impacts***

Under the worst-case energy scenario (replacing digester gas engines with microturbines and landfill gas engines with LNG plants), PAR 1110.2 would reduce natural gas used by at least 181,719 MMBtu per year, which includes the voluntary replacement of existing non-biogas engines with electric motors where it costs less than complying with PAR 1110.2. The total electricity production loss by the worst-case biogas scenario (replacing digester gas engines with microturbines and landfill gas engines with LNG plants) would be 576,527 MW-hours per year which is less than one percent of 120,194 GW-hours per year available in Southern California. The maximum amount of diesel used in worst-case construction and operations would be 1,871 gallons of diesel per day, which is less than one percent of the 10 million gallons consumed per day in California, and therefore is less than significant.

### ***Renewable Energy Impacts***

A technical assessment will be completed in 2010, which will verify that PAR 1110.2 would not cause biogas facility operators to replace existing ICES with continuous flaring. If the technology assessment shows potential for flaring or that feasible control options for biogas engines are not available, staff will return to the Governing Board with a proposal to address any new significant adverse impacts. Because of the technology assessment under PAR 1110.2, SCAQMD staff believes that facilities operators will either use add-on control or replace ICES with alternative technologies that would either generate electricity or LNG; there would be only adverse impacts to renewable energy supplies from efficiency losses between the existing ICES and the ICES with add-on control or ICE replacement technologies. The largest electrical loss from renewable energy sources because of differences in efficiency between alternative technologies and the existing ICES would be 101,013 MW-hours per year for the microturbines compliance option.

There may be adverse energy impacts in an individual government program, but any energy losses other than from efficiency losses from one program may be made up in another program. For example, if a landfill gas facility operator chooses to replace an existing

biogas ICEs with a LNG facility, not only would there be a loss of electricity generation, but the LNG facility would need energy from the grid to operate. However, the landfill gas would not be wasted, but treated and sold as LNG, which is a renewable fuel. While this might affect the California's Renewables Portfolio Standard (RPS), which focuses only on electricity, it would assist renewable fuel/biomass goals under Governor Schwarzenegger's Executive Order S-06-06. Therefore, while

### **Solid/Hazardous Waste**

The NOP/IS stated that solid/hazardous waste might be significantly adversely impacted by PAR 1110.2. Adverse solid/hazardous waste impacts are associated with the replacement of ICEs and the disposal of catalysts. The replacement of ICEs would occur once during construction. The replacement of catalyst would occur both during construction and operation. An analysis was completed that compared the capacities of existing solid and hazardous waste landfills and it was determined that the adverse solid/hazardous waste impacts associated with PAR 1110.2 would not be significant.

### **SIGNIFICANT ADVERSE IMPACTS THAT CANNOT BE REDUCED BELOW A SIGNIFICANT LEVEL**

The Initial Study identified air quality, energy, hazards and hazardous materials, and solid/hazardous waste as areas that may be adversely affected by the proposed project. During the public comment period on the Notice of Preparation and Initial Study (NOP/IS) for the proposed project, April 26, 2007 to May 25, 2007, SCAQMD staff received comments suggesting that the proposed project could create significant adverse aesthetic impacts. Potential adverse impacts to these five environmental areas were further analyzed in the Draft EA. Potential adverse energy and solid/hazardous waste impacts were determined to be less than significant.

It was assumed that operators of biogas systems will comply with PAR 1110.2 by controlling emissions from ICEs with SCR or NOxTech systems or replace the ICE with an alternative technology that would not be regulated by PAR 1110.2, such as, boilers, gas turbines, microturbines, fuel cells or biogas to LNG facilities. Emission reductions from ICEs controlled by SCR or NOxTech systems were estimated based on PAR 1110.2 limits. The emission reductions anticipated for PAR 1110.2 are based on the assumption that operators of biogas facilities can comply with PAR 1110.2 by installing control equipment onto their equipment. However, based on comments received by the regulated industry, operators may replace biogas engines with alternative technologies and, thus, would no longer be subject to PAR 1110.2. If biogas operators choose to replace ICEs with alternative technologies (gas turbines, microturbines, LNG plants, etc.), the alternative technologies would be subject to other regulatory requirements such as Regulation XIII. The follow is a description of each replacement technology.

To account for the possibility that affected operators may install alternative technologies; staff has calculated the potential emission reduction effects if all affected biogas engines are replaced with alternative technologies. To address concerns of commenters about flaring and biogas compliance options, which have not been verified, SCAQMD staff has committed to a technology assessment in 2010. If the technology assessment shows the

potential for flaring, then staff will return to the Governing Board with a proposal addressing any new significant adverse impacts. Facility operators who replace ICEs with fuel cells would not generate any appreciable emissions, so emissions would essentially be zero. The analysis assumes that facility operators who replace ICEs with biogas to LNG facilities would generate emissions from boilers used to produce heat for the process and would use electric motors, which would be powered by electricity from the grid.

The EA analyzed potential adverse impacts from five different biogas compliance options: NO<sub>x</sub>, VOC and CO controls added to biogas ICEs; biogas ICEs replaced with gas turbines; biogas ICEs replaced with microturbines; digester gas ICEs replaced with gas turbines and landfill gas ICEs replaced with LNG plants; digester gas ICEs replaced with microturbines and landfill gas ICEs replaced with LNG plants.

The analysis assumes that facility operators who replace ICEs with biogas to LNG facilities would generate emissions from boilers used to produce heat for the process and would use electric motors, which would be powered by electricity from the grid. LNG plants require substantial area because of the size and number of components needed to collect, scrub and cool biogas into LNG. Not all biogas facilities have enough space to support an LNG plant. The analysis of the effects of replacing ICEs with LNG plants assumes that only landfill gas facilities have enough area to allow installation of an LNG plant.

### **Aesthetics**

Commenters stated that facility operators might replace existing diesel engines with diesel engine alternatives such as, gas turbines, microturbines, fuel cells, electric motors, boilers, or biogas to liquefied natural gas (LNG) plants. Physical modifications that may be necessary to comply with alternatives to complying with PAR 1110.2 might significantly alter the aesthetics of an existing facility. Therefore, PAR 1110.2 was determined to be significant for adverse aesthetic impacts.

### **Air Quality**

Since construction and operational emissions would occur concurrently, the emissions from both activities were evaluated together. The resulting emissions were compared to SCAQMD operational criteria pollutant thresholds. The worst-case criteria emissions would occur if all biogas facility operators chose to replace ICEs with gas turbines. In this scenario, PAR 1110.2 would reduce 4,311 pounds of NO<sub>x</sub> per day, 46,868 pounds of CO per day, 1,995 pounds of VOC per day and 13 pounds of SO<sub>x</sub> per day. PM<sub>10</sub> would increase by 142 pounds per day and PM<sub>2.5</sub> would increase by 142 pounds per day. The PM<sub>10</sub> increase would be below the significance threshold of 150 pounds per day. The PM<sub>2.5</sub> emissions would be greater than the significance threshold of 55 pounds per day. Therefore, PAR 1110.2 would be significant for PM<sub>2.5</sub> operational emissions.

### **Hazards and Hazardous Materials**

SCR systems require either urea or ammonia to control NO<sub>x</sub>. Use of urea would not result in offsite adverse impacts because it is not a hazardous material. Because of the hazards associated with anhydrous ammonia, an acutely hazardous material, SCAQMD policy precludes its use as a means of reducing NO<sub>x</sub> emissions. To further reduce hazards

associated with ammonia, a permit condition that limits the aqueous ammonia concentration to 19 percent or less is typically required. Since 20 percent aqueous ammonia is evaluated by RMPComp (20 percent is the lowest concentration available in RMPComp), adverse impacts from aqueous ammonia were evaluated based on the 20 percent aqueous ammonia in the EA. The NOP/IS determined that adverse impacts from transport of aqueous ammonia would be less than significant, so transport of ammonia was not evaluated further in the Draft EA. SCAQMD staff estimated that the largest aqueous ammonia tank would be 5,000 gallons. Storage and use of aqueous ammonia, however, would generate potentially significant adverse impacts and, therefore, were evaluated in the Draft EA. The toxic endpoint for a 5,000 gallon aqueous ammonia tank would be 0.1 mile. Based on a survey of biogas facilities, some facilities have receptors within 0.1 mile of the existing ICEs. Since it is assumed that aqueous ammonia tanks for SCR system would need to be relatively near to the existing ICEs, it is assumed that the toxic endpoint for aqueous ammonia from a catastrophic failure of the storage tank would significantly adversely affect the receptors within 0.1 mile of the ICEs. Therefore, PAR 1110.2 has the potential to generate significant adverse hazardous impacts in the event of an accidental release of aqueous ammonia.

Installation of biogas to LNG plants instead of complying with PAR 1110.2 would include LNG storage tanks. Based on the SCAQMD's survey of facilities, and design of the LNG facility at the Bowerman Landfill, the largest LNG tank was estimated to be 71,000 gallons. The overpressure from a catastrophic release of 71,000 gallons of LNG with a berm was estimated to be 0.2 mile. Based on a survey of biogas facilities, some facilities have receptors with 0.1 miles of the existing ICEs. Therefore, PAR 1110.2 has the potential to generate significant adverse hazardous impacts in the event of a catastrophic failure of an LNG storage tank.

Four accidental release scenarios were identified for the transport of LNG: release of LNG into a pool that evaporates and disperses without ignition; the ignition of a flammable cloud; a boiling liquid expanding vapor explosion (BLEVE) occurs; or the tank ruptures, rockets away and ignites. The worst-case endpoint from these scenarios is 0.3 mile from a vapor cloud fire, BLEVE or where a rocketing tank would land. Assuming that these accidents would occur near receptors, PAR 1110.2 has the potential to generate significant adverse hazard impacts in the event of an accidental release of LNG during transport.

## **FINDINGS**

Public Resources Code §21081 and CEQA Guidelines §15091(a) state that no public agency shall approve or carry out a project for which a CEQA document has been completed which identifies one or more significant adverse environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. Additionally, the findings must be supported by substantial evidence in the record (CEQA Guidelines §15091(b)). As identified in the Final EA and summarized above, the proposed project has the potential to create significant adverse aesthetics, construction air quality, and hazard and hazardous materials impacts. The SCAQMD Governing Board, therefore, makes the following findings regarding the proposed project. The findings are supported by substantial evidence in the record as explained in each finding. This Statement of Findings

will be included in the record of project approval and will also be noted in the Notice of Decision.

### **1. Potential aesthetic adverse impacts cannot be mitigated to insignificance.**

Finding and Explanation: Significant adverse aesthetic impacts are expected as a result of complying with PAR 1110.2 at biogas facilities. No specific mitigation measures were identified that could reduce significant adverse aesthetic impacts to less than significant. It is expected that facility operators would place control technology or ICE alternatives away from property boundaries. However, space issues and the location of utilities, location and quality of the biogas source, and piping may dictate the placement of equipment. Equipment may be masked by perimeter walls or landscape vegetation; although, fire prevention and safety issues would take precedence over aesthetic concerns. As a result, there is no guarantee that landscape vegetation would be available as a means of reducing aesthetics impacts.

Since the location and type of control equipment or ICE replacement is unknown for any specific biogas facility and the effectiveness of perimeter walls and landscaping to minimize aesthetics impacts is unknown, it is assumed that aesthetics impacts cannot be mitigated to less than significant.

The Governing Board finds that no feasible mitigation measures have been identified. CEQA Guidelines §15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

### **2. Potential PM2.5 emissions from the gas turbine compliance option cannot be mitigated to insignificance.**

Finding and Explanation: PM2.5 emissions under the gas turbine compliance option were concluded to be significant in certain years. Secondary PM2.5 emissions under this compliance scenario are generated from the following sources: emergency diesel backup generators during periodic testing, diesel trucks transporting materials, e.g., catalyst, activated carbon, etc., to and from affected facilities, power plant emissions, etc. would occur. Based on the gas turbine biogas compliance option, PAR 1110.2 has the potential to emit 142 pounds of PM2.5 per day in some future years.

New gas turbines installed as a compliance option instead of complying with PAR 1110.2 would likely be subject to Rule 1303 or Rule 2005 BACT requirements. No add-on control technology or alternatives have been identified to reduce PM2.5 emissions from the gas turbine compliance option.

The Governing Board finds that no feasible mitigation measures have been identified to reduce significant adverse PM2.5 impacts under the gas turbine compliance option. CEQA Guidelines §15364 defines "feasible" as "capable of being accomplished in a successful

manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

**3. Potential adverse hazard impacts from an accidental release of ammonia during storage and LNG during transport and storage that cannot be mitigated to insignificance.**

Finding and Explanation: In the event of a catastrophic release of aqueous ammonia from ammonia storage tanks, it was estimated that there could be exposure to concentrations of ammonia above the ERPG 2 level of 150 ppm within 0.1 mile of the storage tank. Due to the size and locations of affected facilities sensitive receptors are expected to be within 0.1 mile of the storage tank. Therefore PAR 1110.2 would be significant for accidental release from ammonia storage.

Under the alternative compliance option where the owner of an affected biogas engine replaces the engine with a biogas-to-LNG facility, significant adverse hazard impacts could occur under the following scenarios. The one psi overpressure from the cataclysmic destruction of the LNG storage tank is expected to extend 0.2 mile from the LNG storage tank. Due to the size and locations of affected facilities sensitive receptors are expected to be within 0.1 mile of the storage tank. Therefore PAR 1110.2 would be significant for accidental release from an on-site LNG storage tank. During transportation of LNG, it was estimated that adverse impacts from various releases would extend 0.3 mile. It is expected that sensitive receptors could be within 0.3 mile of roadway used by LNG trucks associated with PAR 1110.2. Therefore, PAR 1110.2 has the potential to generate significant hazard impacts associated with an accidental release of LNG during transport.

SCAQMD policy relative to air pollution control technologies requires the use of aqueous ammonia instead of anhydrous ammonia reduces potential adverse impacts in the event of an accidental release of ammonia used for SCR units. The use of 19 percent aqueous ammonia further reduces adverse impacts from in the event of an accidental release of ammonia.

Secondary containment (e.g. berms), valves that fail shut, emergency release valves and barriers around ammonia or LNG storage tanks are design measures that are used to prevent the physical damage to storage tanks or limit the release of aqueous ammonia or LNG from storage tanks are typically required by local fire departments. Integrity testing of aqueous ammonia and LNG storage tanks assists in preventing failure from structural problems. Further, as part of the proposed project, SCAQMD staff will require that affected facility operators construct a containment system to be used during ammonia off-loading and LNG loading operations.

However, no additional mitigation measures beyond those identified above were identified that would reduce the hazard and hazardous material impacts from ammonia or LNG to less than significant. Therefore, the remaining hazards and hazardous material impacts from exposure to the ERPG 2 level of 150 ppm for ammonia and the one psi overpressure from the cataclysmic destruction of the LNG storage tank are considered to be significant.

The Governing Board finds that no additional feasible mitigation measures beyond those identified in the EA have been identified that can reduce adverse hazards and hazardous material impacts to less than significant. CEQA Guidelines §15364 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

**4. Feasible Alternatives to the Proposed Project do not reduce adverse aesthetic, air quality and hazards, and hazardous material impacts to insignificance.**

Finding and Explanation: The Governing Board finds further that in addition to the No Project Alternative, the Final EA considered alternatives pursuant to CEQA Guidelines §15126.6. Of all the alternatives considered, only Alternative C (Enhanced Enforcement) would reduce to insignificant levels the significant adverse aesthetic, air quality, and hazard and hazardous material impacts identified for the proposed project. Installation of CEMs, additional monitoring, etc., are not expected to change the visual character of the facility or surroundings and, therefore, would not be expected to generate significant adverse aesthetic impacts. Additional compliance requirements would not generate significant adverse construction or operational air quality impacts. Air toxics would be generated from source testing vehicle trips, but health risk from a single trip every other year would be negligible. Because Alternative C does not impose further emission control requirements, no facility operators would implement emission compliance options that could generate significant hazards/hazardous material impacts, because hazards would not be generated from increased monitoring and source testing. By not requiring any additional control equipment, facility operators are not expected to replace ICEs with ICE alternatives. The ICE alternatives were determined to be the source of adverse aesthetic, air quality and hazards and hazardous material impacts. However, while Alternative C would not generate significant adverse impacts compared to the proposed project, it would also not achieve most of the project objectives such as implementing the 2007 AQMP Control Measure MCS-01 – Facility Modernization; partially implementing SB 1298; and achieving further NO<sub>x</sub>, VOC, and PM emission reductions from affected engines.

Alternative B would extend and increase the low-use exception to non-biogas engines and extend the 15 minute averaging time during compliance testing to one hour. Impacts from implementing Alternative B would generally be similar to PAR 1110.2 because the greatest impacts occur from the various compliance options for biogas engines. Compliance options are essentially the same for both Alternative B and PAR 1110.2. Alternative B may generate lower construction emissions overall compared to PAR 1110.2, but because major construction activities are anticipated to occur at biogas facilities the maximum daily construction emissions may not be substantially different from those identified for PAR 1110.2. CO<sub>2</sub> emission reductions would be similar to CO<sub>2</sub> emission reductions identified for PAR 1110.2 because it is expected that replacing non-biogas ICEs with electric motors will be a less costly compliance option for the same categories of ICEs affected by both PAR 1110.2 and Alternative B. Aesthetic and hazards/hazardous material impacts are expected to be similar to PAR 1110.2 and, therefore, significant.

Alternative D is expected to generate significant adverse environmental impacts similar to those identified for PAR 1110.2. Alternative D may incrementally increase adverse environmental impacts because larger or additional control may be required to meet the lower CO compliance concentration limits. CO2 emission reductions would occur through the mandatory replacement of non-biogas engines with electric motors for categories for categories of engines where this compliance option is less costly than complying with the emission control requirements. While in practice Alternative D could generate greater adverse environmental impacts, the assumptions applied to PAR 1110.2 would also apply to Alternative D because these assumptions provide the most conservative analysis possible. Therefore, for this analysis the adverse environmental impacts from PAR 1110.2 and Alternative D are equivalent. Alternative D would be expected to create significant adverse aesthetics, air quality, and hazards/hazardous waste.

Although Alternative A-No Project Alternative, would not generate any of the adverse impacts identified for the proposed project, it would also not achieve any of the project objectives. An important objective of the proposed project is to improve an enhance compliance with the rule requirements. Under Alternative A it is possible that violations of Rule 1110.2 could continue to occur, albeit at a lower level than is currently the case because the SCAQMD is aware of compliance issues. Finally, Alternative A would not address SIP approvability issues identified by EPA.

No additional feasible mitigation measures or project alternatives, other than those already included in the Final EA, have been identified that can further mitigate the potentially significant project-specific impacts on air quality.

The SCAQMD finds that the proposed project achieves the best balance between emission reductions and the adverse aesthetic, air quality, and hazardous and hazardous material impacts due to construction and operation activities while meeting the objectives of the project. The SCAQMD further finds that all of the findings presented in this “Statement of Findings” are supported by substantial evidence in the record.

The record of approval for this project may be found in the SCAQMD’s Clerk of the Board’s Office located at SCAQMD Headquarters in Diamond Bar, California.

## **STATEMENT OF OVERRIDING CONSIDERATIONS**

If significant adverse impacts of a proposed project remain after incorporating mitigation measures, or no measures or alternatives to mitigate the adverse impacts to less than significant levels are identified, the lead agency must make a determination that the benefits of the project outweigh the unavoidable adverse environmental effects if it is to approve the project. CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project (CEQA Guidelines §15093(a)). If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered “acceptable” (CEQA Guidelines §15093(a)). Accordingly, a Statement of Overriding Considerations regarding potentially

significant adverse impacts resulting from the proposed project has been prepared. This Statement of Overriding Considerations is included as part of the record of the project approval for the proposed project. Pursuant to CEQA Guidelines §15093(c), the Statement of Overriding Considerations will also be noted in the Notice of Decision for the proposed project.

Despite the inability to incorporate changes into the project that will mitigate potentially significant adverse impacts to a level of insignificance, the SCAQMD's Governing Board finds that the following benefits and considerations outweigh the significant unavoidable adverse environmental impacts:

1. The analysis of potential adverse environmental impacts incorporates a “worst-case” approach. This entails the premise that whenever the analysis requires that assumptions be made, those assumptions that result in the greatest adverse impacts are typically chosen. This method likely overestimates the actual adverse aesthetic, air quality, and hazards and hazardous material impacts resulting from the proposed project.
2. The proposed project implements, in part, AQMP control measure MSC-01. The long-term effect of PAR 1110.2, other SCAQMD rules, and AQMP control measures is the reduction of criteria emissions district-wide, contributing to attaining and maintaining the state and federal ambient air quality standards with a margin of safety. Beginning in 2008, PAR 1110.2 would reduce NO<sub>x</sub> emissions by 37 tons per year (204 pounds per day) CO emissions by 69 tons per year (379 pounds per day) and VOC emission by six tons per year (35 pounds per day). At full implementation, the long-term effect of the proposed amendments is a permanent reduction of NO<sub>x</sub> emissions by 4,335 tons per year (791 pounds per day), CO emissions by 38,845 tons per year (7,089 pounds per day) and VOC emission by 1,372 tons per year (250 pounds per day).
3. Although significant health risk impacts from diesel exhaust particulate emissions was identified, a mitigation measure was identified to reduce emissions impacts to a level of insignificance.
4. The proposed project and alternatives do not prescribe the means of controlling NO<sub>x</sub>, VOC and CO emissions. Facility operators may choose technologies that would not generate significant adverse aesthetic, air quality, or hazards and hazardous material impacts. For example, if biogas facility operators replaced their existing ICEs with microturbines or fuel cells, then there would not be any aesthetic, air quality, or hazards and hazardous material impacts.
5. The proposed project includes a technology assessment in 2010. The results of the technology assessment may result in identifying control technologies that would not generate significant adverse aesthetic, air quality, or hazards and hazardous material impacts.
6. The proposed project is expected to result in a net reduction of CO<sub>2</sub> emissions based on the expectation that it will be more cost effective for operators of some types of non-

biogas engines to replace their engines with electric motors. As a worst-case assumption, PAR 1110.2 is expected to result in no net increase in CO2 emissions.

7. One of the objectives of PAR 1110.2 is to address the four issues identified by EPA that were cause for disapproval of Rule 1110.2, which means it cannot be incorporated into the State Implementation Plan. Adopting PAR 1110.2 would correct the four issues identified by EPA.

The SCAQMD's Governing Board finds that the above-described considerations outweigh the unavoidable significant effects to the environment as a result of the proposed project.

## **MITIGATION MONITORING PLAN**

CEQA requires an agency to prepare a plan for reporting and monitoring compliance with the implementation of measures to mitigate significant adverse environmental impacts. Mitigation monitoring requirements are included in CEQA Guidelines §15097 and Public Resources Code §21081.6, which specifically state:

When making findings as required by subdivision (a) of Public Resources Code §21081 or when adopting a negative declaration pursuant to paragraph (2) of subdivision (c) of Public Resources Code §21080, the public agency shall adopt a reporting or monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment (Public Resources Code §21081.6). The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of an agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead or responsible agency, prepare and submit a proposed reporting or monitoring program.

The provisions of CEQA Guidelines §15097 and Public Resources Code §21081.6 are triggered when the lead agency certifies a CEQA document in which mitigation measures, changes, or alterations have been required or incorporated into the project to avoid or lessen the significance of adverse impacts identified in the CEQA document. Public Resources Code §21081.6 leaves the task of designing a reporting or monitoring plan to individual public agencies.

To fulfill the requirements of CEQA Guidelines §15097 and Public Resources Code §21081.6, the SCAQMD must develop a plan to monitor project compliance with those mitigation measures adopted as conditions of approval of the Final EA for the PAR 1110.2. The following subsections identify the specific mitigation measures identified in the Final EA and the public agency responsible for monitoring implementation of each mitigation measure.

## **Air Quality Impact**

**IMPACT SUMMARY OF MITIGATION MEASURES A-1:** If a facility operator chooses to replace ICEs with alternative technologies, diesel emergency engines may be

required as emergency backup engines in the event of an emergency. The analysis concluded that emissions from emergency engine testing could generate significant adverse cancer risk impacts. In the air quality analysis, it was determined that diesel particulate filters would reduce the carcinogenic health risks associated with diesel particulate emissions from the emergency engines to less than significant.

#### **MITIGATION MEASURES:**

##### **Diesel Emergency Engines**

A-1 Require particulate filters for any diesel emergency engine installed that generates a carcinogenic health risk greater than 10 in one million as a result of replacing existing ICEs at a facility as part of an alternative method of complying with PAR 1110.2.

**IMPLEMENTING PARTIES:** The SCAQMD's Governing Board finds that implementing the mitigation measures A-1 is the responsibility of the owner, operator, or agent of each affected facility who submits a permit application for emergency engines as a result of replacing existing ICEs to avoid compliance with the proposed project.

**MONITORING AGENCY:** The SCAQMD's Governing Board finds that through its discretionary authority to issue and enforce permits for this project, the SCAQMD will ensure compliance with mitigation measures A-1.

#### **Hazard and Hazardous Material Impact**

**IMPACT SUMMARY OF MITIGATION MEASURES H-1:** Facility operators who install ammonia or LNG storage tanks may generate a significant impact off-site in the event of an accidental release. Secondary containment of ammonia and LNG storage tanks are required by local fire departments. SCAQMD staff proposes that affected facilities construct a secondary containment system to be used during off-loading of ammonia and loading of LNG to further reduce off-site exposures in the event of an accidental release. No other mitigation to reduce the adverse impacts from off-site because of an accidental release of LNG or ammonia to less than significant was identified.

#### **MITIGATION MEASURES:**

##### **Diesel Emergency Engines**

H-1 Require secondary containment to be used during ammonia off-loading operations and LNG loading operations for any facility that has the potential to generate an off-site significant adverse impact in the event of an accidental release from ammonia or LNG storage tanks.

**IMPLEMENTING PARTIES:** The SCAQMD's Governing Board finds that implementing the mitigation measures H-1 is the responsibility of the owner, operator, or agent of each affected facility who submits a permit application for ammonia or LNG

storage in connection with an alternative means of complying with the proposed project where it can be shown that the facility has the potential to generate significant adverse off-site hazard impacts because of an accidental release.

**MONITORING AGENCY:** The SCAQMD's Governing Board finds that through its discretionary authority to issue and enforce permits for this project, the SCAQMD will ensure compliance with mitigation measures H-1.

## CONCLUSION

Based on a "worst-case" analysis, the potential adverse aesthetic, air quality, hazard and hazardous materials impacts from the adoption and implementation of PAR 1110.2 are considered significant and unavoidable. Construction of ICE alternatives may adversely impact the visual character of the area around affected facilities. Facility operators who choose to replace existing biogas ICES with gas turbines as an alternative to complying with the requirements of PAR 1110.2 may generate PM<sub>2.5</sub> emissions that exceed the applicable regional significance threshold. Facility operators who replace existing ICES may require diesel emergency engines. Diesel particulate filters were identified as a feasible mitigation measure that would reduce health risk from diesel emergency engine exhaust to less than significant. Facility operators who install ammonia or LNG tanks in connection with alternative compliance options have the potential to generate significant adverse hazard impacts in the event of an accidental release of either material. In addition to secondary containment features require by local fire departments for storage tanks, secondary containment around loading and off-loading operations would reduce adverse impacts, but would not reduce them to insignificance.

It is likely that existing SCAQMD Rule 1470 would already require diesel emergency back-up engines to be retrofitted with particulate filters or meet very low PM emission requirements. However, for any diesel emergency back-up engines that are installed as a result of adopting and implementing PAR 1110.2 and that may not be subject to Rule 1470, diesel particulate filters will be required to ensure that the engines do not generate significant adverse carcinogenic health risks.

No other feasible mitigation measures or project alternatives have been identified that would further reduce aesthetic, air quality, and hazards and hazardous material impacts to less than significant levels, while still achieving the overall objectives of the project.