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MEMO

TO: Susan Higgins, P.E.

FROM: Michael Rogozen, D.Env.

COPY TO: James M. Osborn

DATE: June 11, 2018 Update

PROJECT #: 5961 – LACDPW Advanced Solid Waste Conversion Technology, Task 2

RE: Draft Overview of Permitting Requirements for Thermal-Based Solid Waste Conversion Technologies in the South Coast Air Basin

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The purpose of this memorandum is to provide a high-level summary of the air quality regulatory requirements and procedures for constructing and operating a thermal-based solid waste conversion technology facility in the South Coast Air Basin (SCAB) of California. This memorandum also briefly addresses compliance with the California Environmental Quality Act (CEQA), since it is necessary for siting facilities anywhere in the state.

1.0 AIR POLLUTANTS AND AMBIENT STANDARDS

Federal, state and local agencies have set ambient air quality standards (AAQS) for certain air pollutants through statutory requirements, and have established regulations and various plans and policies to maintain and improve air quality. Most of Los Angeles County is within the South Coast Air Basin (SCAB), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD or District). The SCAQMD is the local agency responsible for monitoring air quality, as well as planning, implementing and enforcing programs designed to attain and maintain national and state ambient air quality standards (AAQS) over the region. A small portion of the northeast portion of Los Angeles County is in the Mojave Desert Air Basin and is under the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD). AVAQMD requirements are similar to those presented here and will not be discussed in this memorandum.

1.1 Pollutants of Concern

Air pollutants can be divided into three major categories for regulatory purposes. ***Criteria pollutants*** are air pollutants for which acceptable levels of exposure can be determined and an ambient air quality standard has been established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (ARB). The criteria air pollutants of concern are nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), lead (Pb), and ozone (O_3), and their precursors. **Air toxics**, also called **toxic air contaminants** or **hazardous air pollutants**, are defined in California law as air pollutants "which

may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health."[1] Typical examples are hydrogen sulfide, formaldehyde and hexavalent chromium. Hazardous air pollutants may be carcinogens or have noncancer health effects after acute (short-term) or chronic (long-term) exposure. Finally, **greenhouse gases** (GHG) are defined under the California Global Warming Solutions Act of 2006 (AB 32) as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC)s, perfluorocarbons (PFC)s, and sulfur hexafluoride (SF6). Associated with each GHG species is a "global warming potential" (GWP), which is defined as the ratio of degree of warming to the atmosphere that would result from the emission of one mass unit of a given GHG compared with one equivalent mass unit of CO_2 over a given period of time. By this definition, the GWP of CO_2 is always 1. The GWPs of methane and nitrous oxide are 25 and 298, respectively.[2] "Carbon dioxide equivalent" (CO_2e) emissions are calculated by weighting each GHG compound's emissions by its GWP and then summing the products.

1.2 Ambient Air Quality Standards and Attainment Status

1.2.1 Criteria Pollutants

Table 1.2-1 illustrates the national and state AAQS for the criteria pollutants of concern.

Table 1.2-1
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard	Federal Standard	
			Primary	Secondary
Ozone (O_3)[a]	1-hour	0.09 ppm	---	---
	8-hour	0.070 ppm	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)[b]	1-hour	20 ppm	35 ppm	---
	8-hour	9.0 ppm	9 ppm	---
Nitrogen Dioxide (NO_2)[c]	1-hour	0.18 ppm	0.100 ppm	---
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.053 ppm
Sulfur Dioxide (SO_2)[d]	1-hour	0.25 ppm	0.075 ppm	---
	3-hour	---	---	0.5 ppm
	24-hour	0.04 ppm	0.14 ppm	---
	Annual Arithmetic Mean	---	0.030 ppm	---
Respirable Particulate Matter (PM_{10})[e]	24-hour	50 μg/m^3	150 μg/m^3	150 μg/m^3
	Annual Arithmetic Mean	20 μg/m^3	---	---

1 California Health and Safety Code § 39655(a).
2 IPCC Fourth Assessment Report: Climate Change 2007. Climate Change 2007: Working Group I: The Physical Science Basis. 2.10.2 Direct Global Warming Potentials. https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html.

Pollutant	Averaging Time	California Standard	Federal Standard	
			Primary	Secondary
Fine Particulate Matter ($PM_{2.5}$)[e]	24-hour	---	35 μg/m³	35 μg/m³
	Annual Arithmetic Mean	12 μg/m³	12 μg/m³	15 μg/m³

[a] https://www.arb.ca.gov/research/aaqs/common-pollutants/ozone/ozone.htm. October 11, 2016.
[b] https://www.arb.ca.gov/research/aaqs/common-pollutants/co/co.htm. August 22, 2016.
[c] https://www.arb.ca.gov/research/aaqs/common-pollutants/no2/no2.htm. August 22, 2016.
[d] https://www.arb.ca.gov/research/aaqs/common-pollutants/so2/so2.htm. January 24, 2018.
[e] https://www.arb.ca.gov/research/aaqs/common-pollutants/pm/pm.htm. August 19, 2017.

By analyzing ambient air quality monitoring data obtained at stations throughout an air basin, the U.S. Environmental Protection Agency (USEPA) and the ARB determine whether the basin is in attainment with the national ambient air quality standards (NAAQS) and the California ambient air quality standards (CAAQS), respectively. **Table 1.2-2** shows the area designation status of the SCAB for each criteria pollutant for both the national and state AAQS. Based on regional monitoring data, the SCAB is currently designated as a non-attainment area for O_3 and $PM_{2.5}$; a federal maintenance area for CO, NO_2 and PM_{10}; and an attainment area for SO_2.[3,4] Designation of the SCAB as a maintenance area means that, although the Basin has achieved compliance with the NAAQS for CO and NO_2, control strategies that were used to achieve compliance must continue.

Table 1.2-2
FEDERAL AND STATE ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN

Pollutants	Federal Classification	State Classification
Ozone (O_3)	Non-Attainment (Extreme)	Non-Attainment
Particulate Matter (PM_{10})	Maintenance	Non-Attainment
Fine Particulate Matter ($PM_{2.5}$)	Non-Attainment	Non-Attainment
Carbon Monoxide (CO)	Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Maintenance	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment

Sources:
U.S. Environmental Protection Agency. Nonattainment and Unclassifiable Area Designations for the 2015 Ozone Standards -- April 30, 2018. https://www.epa.gov/sites/production/files/2018-04/documents/placeholder_1.pdf. Accessed June 10, 2018.
U.S. Environmental Protection Agency. Nonattainment Areas for Criteria Pollutants (Green Book). https://www.epa.gov/green-book. May 31, 2018.
California Air Resources Board, "Area Designations Maps/State and National." www.arb.ca.gov/desig/adm/adm.htm. October 18, 2017.
U.S. Environmental Protection Agency. 78 Federal Register: 38223-38226. June 26, 2013.

3 U.S. Environmental Protection Agency. Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; California; South Coast Air Basin; Approval of PM_{10} Maintenance Plan and Redesignation to Attainment for the PM_{10} Standard. 78 Federal Register: 38223-38226. June 26, 2013.

4 On July 8, 2016, EPA made a finding that the South Coast has attained the 1997 24-hour and annual $PM_{2.5}$ standards based on 2011-2013 data. https://www.regulations.gov/document?D=EPA-R09-OAR-2014-0708-0081. This determination became effective August 24, 2016. However, the SCAB is still non-attainment for the 2012 annual standard.

The SCAQMD is required to produce plans to show how air quality will be improved in the region. The CCAA requires that these plans be updated triennially to incorporate the most recent available technical information.[5] A multi-level partnership of governmental agencies at the federal, state, regional and local levels implement the programs contained in these plans. Agencies involved include the USEPA, ARB, local governments, Southern California Association of Governments (SCAG), and SCAQMD. The SCAQMD updates its air quality management plan (AQMP) every three years. None of the control strategies in the 2012 AQMP was directly related to municipal solid waste conversion technology facilities.

The 2016 AQMP was adopted by the SCAQMD Board on March 3, 2017, and on March 10, 2017 was submitted to the ARB as part of the SIP.[6] It focuses largely on reducing NO_x emissions as a means of attaining the 1979 1-hour ozone standard by 2022, the 1997 8-hour ozone standard by 2023, and the 2008 8-hour standard by 2031.[7] The AQMP prescribes a variety of current and proposed new control measures, including a request to the EPA for increased regulation of mobile source emissions. The NO_x control measures will also help the SCAB attain the 24-hour standard for $PM_{2.5}$.

1.2.2 Air Toxics

The USEPA has set ambient air quality standards for only one hazardous air pollutant: lead. The State of California has set AAQS for lead, hydrogen sulfide and vinyl chloride.

1.2.3 Greenhouse Gases

There are no AAQS for GHGs, either individually or in combination.

2.0 EMISSION LIMITATIONS

Given that many thermal-based conversion technology (CT) processes may emit criteria pollutants, air toxics, and/or greenhouse gases, it is important to be aware of regulatory limits on those emissions. These limits apply to all emission sources, including those for which permits are not required. (Permits are discussed in **Section 4**.) The most relevant compilations for the purpose of this memorandum are the SCAQMD's rules and the USEPA's new source performance standards (NSPS). Requirements for permitting of municipal solid waste incinerators under Section 129 of the Clean Air Act are also briefly discussed.

2.1 South Coast Air Quality Management District Emission Limits

The SCAQMD has several types of rules governing all emission sources, including those that do not require permits. The first are the "prohibitory" rules (Rules 401 – 481), which set limits on fuel characteristics, exhaust pollutant concentrations, mass emission rates and other parameters, for a variety of types of equipment and activities. The second are the "source-specific" rules (Rules 1101

5 CCAA of 1988.

6 Letter from Wayne Nastri, Executive Officer, South Coast Air Quality Management District, Diamond Bar, CA to Richard Corey, Executive Officer, California Air Resources Board, Sacramento, California re Submittal of 2016 Air Quality Management Plan. March 10, 2017. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/sipsubmittal.pdf?sfvrsn=6.

7 Final 2016 Air Quality Management Plan. Executive Summary. South Coast Air Quality Management District, Diamond Bar, CA. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/executive-summary.pdf?sfvrsn=4

– 1196), which apply to more narrowly-defined types of equipment and operations. The air toxics rules (Rules 1401 – 1470) apply to emissions of toxic air contaminants (TACs) and other non-criteria pollutants. Rule 1401 focuses on health risk from emissions of all TACs from new and modified permitted sources, while Rule 1402 seeks to reduce emissions of all TACs from exiting sources. The remaining 1400-series rules apply to emissions of specific TACs. The District does not have any rules that set limits on GHG emissions, but it does have GHG emission thresholds for significance under the California Environmental Quality Act (CEQA).[8]

It should be noted that the permit conditions for the conversion technology equipment may (and probably will) contain more stringent limitations on emissions than are specified by the rules, especially if the equipment must use best available control technology or lowest achievable emission rates. This is discussed in more detail below.

2.1.1 Criteria Pollutant Emission Limits

Table 2.1-1 lists and describes several rules that potentially apply to emissions from thermal-based CT processes. The rules are published in full on the District's website.[9]

2.1.2 Air Toxics

The SCAQMD's Regulation XIV (the Rule 1400 series) includes emissions limits for several types of toxic air contaminants, but none of these rules applies to thermal-based waste conversion processes. However, the District controls air toxics emissions from new equipment *indirectly* through Rule 1401 (New Source Review of Toxic Air Contaminants). If emissions from a new permitted unit would result in a cancer risk and/or a noncancer health risk that exceeds stated criteria, then the emissions would need to be controlled with best available control technology for toxics (T-BACT). Note that several factors in addition to emissions determine the risk; these include distance from the source, meteorological conditions, age of the receptors, duration of exposure, and the toxic characteristics of the pollutant. Therefore, simple emission limits are not set.

2.1.3 Greenhouse Gas Emissions

The SCAQMD has not formally adopted GHG emission limits for new or existing equipment. However, in 2008, the SCAQMD Board approved a guidance document for an interim GHG significance threshold under CEQA.[10] The SCAQMD guidance proposes a tiered approach to establishing a significance threshold. It is designed to "capture" 90 percent of GHG emissions; that is, the threshold is low enough that it applies to the sources of 90 percent of the region's GHG emissions and is high enough that it excludes most minor sources. The SCAQMD approach considers "direct, indirect, and, to the extent information is available, life cycle emissions during construction and operation. Construction emissions will be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier."

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8 See **Section 2.1.3**.

9 http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book.

10 South Coast Air Quality Management District. Interim CEQA GHG Significance Thresholds for Stationary Sources, Rules and Plans. December 5, 2008. Internet URL: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed January 13. 2017.

Table 2.1-1
SCAQMD RULES THAT POTENTIALLY APPLY TO THERMAL-BASED CONVERSION PROCESSES

Rule	Name of Rule	What it Does	Comments
431.1	Sulfur Content of Gaseous Fuels	Purpose is to limit SO_2 emissions from fuel combustion in permitted equipment, for fuels with a gross heating value of at least 300 Btu per cubic foot. Applies to CT-derived fuels whether used onsite or sold to offsite customer. Sulfur (as H_2S) limit is 40 ppmv.	Syngas with > 40 ppmv sulfur can be sold for use offsite if it goes through a sulfur removal unit that reduces content to 40 ppmv or less.
475	Electric Power Generating Equipment	Prohibits electric generating equipment having a maximum rating exceeding 10 net megawatts from exceeding both an emission rate standard and an exhaust concentration standard.	Applies to totals of all pollutants emitted; no individual pollutant is specified.
1110.2	Emissions from Gaseous- and Liquid-Fueled Engines	Regulates emissions of NO_x, VOC and CO from all stationary and portable engines over 50 rated brake horsepower (bhp). Limits are set in terms of exhaust gas concentration. For engines used to generate electricity, it sets emission standards in terms of pounds per megawatt-hour.	Amended June 2016. Has special provisions for landfill and digester gas but not for gas from thermal CT processes.

As noted above, the SCAQMD's guidance uses a tiered approach rather than a single numerical emissions threshold. If a project's GHG emissions "fail" the non-significance of a given tier, then one goes to the next one. The tiers are summarized very briefly as follows.

Tier 1 – Applicable Exemptions. This tier no longer applies, so it is necessary to consider the next tier.

Tier 2 – Emissions within Budgets of Regional Plans. GHG emissions are less than significant if the project is consistent with an adopted local GHG reduction plan that meets certain requirements.

Tier 3 – 90 Percent Capture Rate Emission Thresholds. A 90% emission capture rate means that 90% of total emissions from all new or modified projects would be subject to CEQA analysis. As stated in the thresholds document, the 90% percent emission capture rate is appropriate to address long-term adverse impacts associated with global climate change, and would capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth. For Tier 3, the SCAQMD recommends a threshold of 10,000 metric tons (tonnes) of CO_2e emissions from an industrial source. (Construction emissions are amortized over 30 years and added to the facility's operational emissions.)

Tier 4 and 5. These tiers are not relevant to the analysis, and so will not be discussed.

If GHG emissions from a thermal-based waste conversion technology facility would exceed 10,000 tonnes of CO_2e, therefore, mitigation measures to reduce emissions would be required.

2.2 Federal New Source Performance Standards

Under Clean Air Act § 111, the USEPA has promulgated emission standards and other limitations for 97 categories of new emissions sources. They are called new source performance standards (NSPS), and in the South Coast Air Basin they are enforced by the SCAQMD,[11] although the USEPA retains the right to enforce them directly under some circumstances.

Whether § 111 applies to a thermal-based conversion technology facility is important for two reasons:

- It could require additional conditions on the permits for the equipment, beyond those normally required by the SCAQMD.

- It could make the facility where the equipment is located eligible for the federal Title V operating permit program, even if the emissions were below Title V thresholds.[12]

Section 111 would apply to a thermal-based conversion technology facility only if the facility fell into one of the aforementioned 97 categories. Our review of the NSPS regulations, which are in 40 CFR Part 60, found only eight source categories that might conceivably be considered applicable to

11 South Coast Air Quality Management District Regulation IX.
12 Title V permitting is a complex subject worthy of its own memorandum, and is not discussed further here.

a thermal-based conversion technology facility.[13] They are listed, along with the reasons why Section 111 is inapplicable, in **Table 2.2-1**. Additional comments are in the following sections.

2.2.1 40 CFR Part 60, Subpart E – Incinerators

It is useful to look at the regulation's definition of an "incinerator:"[14]

> "Incinerator means any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter."

This definition may be important because Subpart EEEE, discussed below, covers "other solid waste incineration units," but does not define "incineration." The thermal-based conversion technology facility will not use a furnace, and its purpose is to convert waste into a useful physical form, not merely to "remove it." Finally, the thermal-based conversion technology facility will not "burn" solid waste; it will pyrolyze or otherwise gasify it.

2.2.2 40 CFR Part 60, Subpart EEEE – Other Solid Waste Incineration Units

The rather complex analysis needed to determine the applicability of this regulation to thermal-based waste conversion technologies may be summarized as follows. One of the three necessary conditions for this regulation to apply is that the equipment be a "municipal waste combustion unit" or an "institutional waste incineration unit."[15]

According to the Subpart EEEE, "municipal waste combustion unit" means equipment that combusts municipal solid waste including, but not limited to, field-erected, modular, cyclonic burn barrel, and custom built incineration units (with or without energy recovery) operating with starved or excess air, boilers, furnaces, **pyrolysis/combustion units** [emphasis added), and air curtain incinerators."[16] Subpart EEEE, unfortunately, has no definition of "pyrolysis/combustion units." There is, however, a definition of "pyrolysis/combustion unit" in Subpart Eb, a subpart that does not apply to the thermal-based conversion technology facility. That definition is:

> Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids through the heating of municipal solid waste, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere."[17]

13 Source categories that are obviously inapplicable, such as those for equipment installed before the current year, were not included in Table 4.
14 40 CFR § 60.51(a).
15 40 CFR § 60.2885.
16 40 CFR § 60.2977.
17 40 CFR § 60.51b.

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Table 2.2-1
APPLICABILITY OF CLEAN AIR ACT SECTION 111

40 CFR 60 Subpart	Section	Emission Source Type	Applicability Criteria	How Thermal-Based Conversion Technologies Are or May be Made Ineligible
D	60.40(a)	Fossil-Fuel-Fired Steam Generators	• Uses fossil fuel or fossil fuel plus wood to generate steam	• Does not use fossil fuel
Da	60.40Da 60.41Da	Electric Utility Steam Generating Units	• Produces more than 25 MW of electric output for sale	• Produce less than 25 MW and/or do not sell electricity
Db	60.40b 60.41b	Industrial-Commercial-Institutional Steam Generating Units	• Burns fossil fuel in a steam generating device • Heat input to steam generating unit > 100 MMBtu/hour	• Does not use fossil fuel
Dc	60.40c 60.41c	Small Industrial-Commercial-Institutional Steam Generating Units	• Heat input to steam generating unit > 10 MMBtu/hour and < 100 MMBtu/hour of fossil fuel	• Keep heat input below 10 MMBtu/hour
E	60.50 60.51	Incinerators	• Is an incinerator (see text) • Charging rate > 50 tons/day	• Is not an incinerator (see text)
AAAA	60.1010(b)	Small Municipal Waste Combustion Units	• Municipal waste combustion unit has capacity ≥ 35 tons/day	• Does not combust municipal waste
CCCC	60.2015 60.2265	Commercial and Industrial Solid Waste Incineration Units	• Waste associated with a commercial or industrial facility	• Is not an incinerator (see text)
EEEE	60.51(b) 60.2885 60.2977	Other Solid Waste Incineration Units	• Municipal waste combustion unit means … any setting or equipment that combusts municipal solid waste including, but not limited to, field-erected, modular, cyclonic burn barrel, and custom built incineration units (with or without energy recovery) operating with starved or excess air, boilers, furnaces, *pyrolysis/combustion units*, and air curtain incinerators … • Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids through the heating of municipal solid waste, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.	• Gasification of municipal waste and combustion of syngas need to be separate processes in separate devices • Emissions from waste gasification and subsequent combustion of syngas in the thermal oxidizer are not vented to the atmosphere, but rather to an air pollution control device

It is reasonable to assume, in the context of a regulation concerned with incineration of municipal solid waste, that a "pyrolysis/combustion unit" is a single device having separate regions where pyrolysis and combustion take place. In such a unit, the products of the pyrolysis have only one possible fate, and that is to be burned in the device's combustion region. In contrast, the thermal-based conversion technology's gaseous products need not necessarily be combusted; in principle, they could be condensed and used as feedstock for some manufacturing process, or as a fuel to be used offsite.

Thus, it can be argued that a thermal-based conversion technology system does not comprise a "pyrolysis/combustion unit" *as defined by § 60.51b*. If that is true, then § 60.2885(b) does not apply, and, since all three conditions must apply for the equipment to be subject to Subpart EEEE, that subpart does not apply.

Adding support to this argument is an applicability determination from USEPA concerning a pyrolysis unit in Seattle:[18]

> "After further consideration of all the evidence available, we have determined that a pyrolysis plant does not fall within the definition of a municipal incinerator and therefore is not subject to the requirements of NSPS."

In conclusion, the thermal-based conversion technology facility does not appear to meet the applicability requirements of any subpart of 40 CFR Part 60. It is therefore not subject to Section 111 of the Clean Air Act. Whether the SCAQMD and USEPA Region IX will agree to this line of reasoning is unknown.

2.3 Permitting Under Section 129 of the Clean Air Act

Section 129(e) of the Clean Air Act requires a permit for "a solid waste incineration unit combusting municipal waste."[19] A solid waste incineration unit is defined in the statute as "a distinct operating unit of any facility which combusts any solid waste material from commercial or industrial establishments or the general public (including single and multiple residences, hotels, and motels)."[20]

The Solid Waste Disposal Act defines "solid waste" as:[21]

> "The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials

18 Letter from Edward E. Reich, Director, Division of Stationary Source Enforcement, U.S. Environmental Protection Agency, to Douglas C. Hansen, Director, Air and Hazardous Materials Division, U.S. Environmental Protection Agency, Control No. E009. January 19, 1977.
19 42 USC § 7429(e)(2).
20 42 USC § 7429(g)(1).
21 42 USC § 6903(27).

> in irrigation return flows or industrial discharges which are point sources subject to permits …"

In a thermal-based conversion technology project, combustion takes place in a thermal oxidizer, an internal combustion electrical generator, or other device. The fuel therein is **syngas**, not the original solid waste material, as just defined. The fact that substance burned is not solid waste is supported by USEPA's regulation for standards and procedures for identification of non-hazardous secondary materials that are solid wastes when used as fuels or ingredients in combustion units.[22] Since solid waste is not combusted, a thermal-based conversion technology project is not required to obtain a permit under Section 129(e) of the Clean Air Act.

3.0 GETTING PERMITS

3.1 General Procedures

Many components of conversion technology systems will require permits from the SCAQMD. The District's general policy is that any stationary source that emits any level of air pollution requires a permit, unless it is explicitly exempted. Exemptions are listed in Rule 219 (Equipment Not Requiring a Written Permit Pursuant to Regulation II). The trend in recent years is for the District to define "permit units," composed of groups of pieces of equipment that formerly required individual permits. This cuts down considerably on time and expense for all involved. Note that, even if a type of equipment or activity is exempt from needing a permit, it may still be subject to source-specific rules.

A Permit to Construct (PTC) is required before non-exempt equipment can be built, installed, or altered. This is a very important requirement. A facility can get into quite a bit of trouble if it begins any step of the construction process without the PTC. A PTC is good for one year; it then expires if the equipment has not been built. After the equipment is installed, the PTC acts as a temporary permit to operate (PTO). The permanent PTO is issued after the equipment is in full operation and has been inspected by the District. In some cases, an emissions test is needed before the PTO can be issued. Note that sometimes the equipment as finally installed and operating does not match exactly the description in the PTC. The PTO, as ultimately issued, is written to reflect the actual situation, if the differences are considered to be minor in nature.

Applying for a permit can be simple or complicated, depending upon one's strategy. Our experience is that providing as much information to SCAQMD staff as early as possible pays off in reduced processing time. In any event, it is recommended that the conversion technology vendor and County staff meet in person with District staff, including upper-level managers, as soon as a preliminary project design is ready. The meeting is likely to have the following benefits:

- Permit application reviewers will be dealing with people that they have met, rather than with anonymous stacks of paper;

- District staff can point out regulatory issues and requirements that may have otherwise been overlooked by the applicant;

22 40 CFR § 241.3.

- The applicant and the SCAQMD can jointly determine the definition of "permit units;" and
- The applicant can learn exactly what the reviewing staff will want to see in the application.

A permit application consists of several standard forms, plus whatever additional information may help its processing. All applications must contain an Application for Permit to Construct & Permit to Operate (Form 400-A) and California Environmental Quality Act (CEQA) Applicability (Form 400-CEQA), which helps the District decide whether it needs to prepare documentation under CEQA. In addition, the application must contain one or more "supplemental" forms, which provide detailed information on the description, operating characteristics, and emissions of the equipment to be permitted. An example would be Form 400-E-12 (Gas Turbine).

It is usually very useful to attach an appendix containing detailed emission calculations and a regulatory review. District Regulation II includes a comprehensive list of the required information. It is called, "List & Criteria Identifying Information Required of Applicants Seeking a Permit to Construct from the South Coast Air Quality Management District." District staff will compare the application with every applicable rule. By doing this in advance, the applicant can foresee and eliminate potential issues.

Finally, it may be helpful to include a Rule 1401 health risk screening analysis with the application. The SCAQMD has published a method to fairly easily determine whether toxic air contaminant emissions from permitted equipment is likely to result in excessive cancer or noncancer health risks.[23] If the project "passes" the screening procedures, then detailed dispersion modeling is not needed.

Permit processing fees must be submitted with the application. The fees, which are specified in District Rule 301, assume a certain level of effort by District staff to review the applications. For some equipment fee categories, the applicant will be billed for extra labor, if necessary. Fees vary greatly depending upon how the project is defined. If they are charged for each individual piece of equipment, the total minimum permit application fee would be on the order of $15,000 **plus** possible additional fees for risk assessment and other analyses. If the plant is deemed by the District to be a WTE facility, then the application fees would be from about $30,000 to $95,000. Note that these are initial application fees. The operator would also have to pay annual fees to renew the permit to operate and for emissions above various thresholds.

After the application is submitted, the District has 30 days to decide, and notify the applicant in writing, whether it is "complete." If the application is incomplete, the applicant must submit additional materials, and then the District will have another 30 days to determine whether the application is complete. For most cases covered by this discussion, the time limit for permit processing will be 180 days from the date that the application is deemed complete.

23 Risk Assessment Procedures for Rules 1401, 1401.1 and 212, Version 8.0. South Coast Air Quality Management District, Diamond Bar, CA. June 5, 2015. http://www.aqmd.gov/docs/default-source/planning/risk-assessment/riskassprocjune15.pdf?sfvrsn=2.

3.2 Public Notification

District Rule 212 (Standards for Approving Permits and Issuing Public Notice) require public notification of any permit application if any of the following circumstances applies:

a) The project is within 1,000 feet of the outer boundary of a school;[24]

b) The project would result in increases of at least 30 pounds per day of VOC, 40 pounds per day of NO_x, 30 pounds per day of PM_{10}, 60 pounds per day of SO_2, 220 pounds per day of CO, or 3 pounds per day of lead;[25] or

c) The cancer risks or other health risks due to the equipment exceed certain levels.

In general, the District prepares, and the applicant mails, notices to every address within one quarter mile of the project. If a school is within 1,000 feet of the project, then the notice must go to the parents of children attending any school within one quarter mile of the facility and to each address (residence or business) within 1,000 feet.

If the project's emissions exceed the levels indicated in "b" above, then additional notification rules apply. The notice must be sent to a variety of state and local agencies and must be published. "Prominent advertisement" must be made in the area potentially affected by the project. The notices include an evaluation by the District of the project's effects on air quality. The public must have 30 days to respond.

3.3 New Source Review

3.3.1 General Requirements

The purpose of the SCAQMD's new source review (NSR) regulation (Regulation XIII) is to ensure that approval of permits for new or modified sources results in no net increase in emissions of nonattainment pollutants or their precursors.[26]

A major polluting facility in the South Coast Air Basin is one which emits or has the potential to emit 10 tons per year of volatile organic compounds (VOC), 10 tons of nitrogen oxides (NO_x), 100 tons per year of sulfur oxides (SO_x), 70 tons per year of particulate matter (PM_{10}), or 50 tons per year of carbon monoxide.[27] Note that if the threshold for any one of these pollutants is met, the facility is considered to be "major," and will be subject to lower achievable emission rate (LAER) limitations for <u>all</u> pollutants.[28]

Potential to emit (PTE) is defined as the maximum emissions that would occur, taking into account permit conditions that directly limit emissions; if no such conditions are imposed, then potential to emit is calculated by assuming maximum rated capacity, maximum daily hours of operation, and

24 Rule 212(c)(1).
25 Rule 212(c)(2) and Rule 212(g).
26 Rule 1301(a).
27 Rule 1302(s).
28 Kay, M., A. Baez and H. Lange. *Best Available Control Technology Guidelines*, South Coast Air Quality Management District (Revised July 14, 2006), p. 3.

the physical characteristics of the materials processed.[29] Because use of air pollution control equipment, when required by the SCAQMD, is always made a permit condition, controls are taken into account when calculating PTE. However, the only permit conditions that are considered for PTE calculations are those that directly limit emissions. Requirements for good housekeeping practices and other measures that would tend, over the long run, to reduce emissions do not count.

A new facility with a PTE less than 4 tons per year of VOC, NO_x, SO_x, or PM_{10}; or 29 tons per year of CO is subject to NSR but is exempt from the requirement to provide offsets for emission increases.[30] Exemptions are discussed in more detail below.

3.3.2 BACT and LAER

All facilities subject to NSR must use best available control technology (BACT). Note that the SCAQMD uses the term "BACT" for non-major polluting facilities and the term "LAER" for major polluting facilities, as defined above.[31] Because previous evaluations indicate that NO_x emissions from at least some conversion technology facilities will exceed 10 tons per year, we will assume that "LAER" will apply. The BACT or LAER requirements apply to all facilities, even those that are exempted from other NSR requirements.[32]

LAER as defined by the District must be at least as stringent as the version of LAER that is defined in Section 171(3) of the federal Clean Air Act.[33] The SCAQMD staff determines LAER on a permit-by-permit basis. It is the most stringent emission limit or control technology that is (a) found in a state implementation plan (SIP), (b) achieved in practice (AIP), or (c) is technologically feasible and cost-effective. For practical purpose, nearly all LAER determinations by the SCAQMD are based upon AIP because LAER based on SIPs is not stringent enough and California law constrains the District from using the third approach.[34] The District has its own compendium of LAER determinations for various emission source categories, but allows consideration of LAER determinations by other jurisdictions.

3.3.3 Modeling

Another NSR requirement is modeling to determine whether a new or modified facility would cause a violation, or "significantly" worsen an existing violation, of any state or federal ambient air quality standards.[35] The modeling is performed only for NO_x, CO and PM_{10}; photochemical modeling is not required. Appendix A to Rule 1303 defines, for each pollutant, the increases in (modeled) ambient air concentrations that would be significant. However, modeling is not required if emissions for all the pollutants are below certain screening levels. For combustion sources, the screening levels vary with heat input capacity. For example, for heat input between 30 and 40 million Btu per hour, the NO_x screening level is 1.31 pounds per hour.[36]

29 Rule 1302(ad).
30 Rule 1304(d)(1)(B).
31 Kay et al., p. 15.
32 Rule 1303(a)(4).
33 Rule 1303(a)(2).
34 Kay et al., p. 15.
35 Rule 1303(b)(1).
36 Rule 1303 Appendix A, Table A-1.

3.3.4 Emissions Offsets

The final major NSR requirement is the use of emissions offsets that exceed the emissions due to the new source. In general, applicants must use emission reduction credits (ERCs) that they have earned or purchase them from other facilities. ERCs are created when a facility permanently retires equipment that had been emitting criteria pollutants. Purchase of offsets is a one-time transaction; it is not necessary to purchase them annually. The SCAQMD publishes a list of holders of ERCs and the amounts available for sale. The District also publishes information on recent transactions and average values over various time periods. For example, in 2014, the latest year for which the SCAQMD has published annual data, the average sale prices of ERCs (in dollars per ton per year) were:[37]

ROG[38]	$22,002
NO_x	$63,014
PM_{10}	$521,868

The ARB has published the following weighted average sale price data for the SCAQMD for 2015 and 2016 (in dollars per ton per year):[39, 40, 41]

Year	**2015**	**2016**
ROG	$21,287	$18,091
NO_x	$91,236	None
PM_{10}	$552,146	$546,011

ROG prices dropped by about 18% from 2014 to 2016. Between 2014 and 2015, the increase in NO_x ERCs increased by about 67%. There were no NO_x transactions in 2016. Although PM_{10} prices decreased between 2015 and 2016, they were about 4.6% higher than they were in 2014.

The following sections discuss means that are potentially available for reducing the costs of emissions offsets or avoiding them altogether.

3.3.4.1 Exemption for Low Emissions

Rule 1304 exempts a new facility that has a potential to emit of less than 4 tons per year of VOC, NO_x, SO_x, or PM_{10}; or 29 tons per year of CO; [42] from Rule 1303's requirements to obtain emissions offsets.

37 Annual Publication of Emission Reduction Credit Transactions for Calendar Year 2014 (California Health and Safety Code Section 40709.5). South Coast Air Quality Management District. Diamond Bar, CA. http://www.aqmd.gov/docs/default-source/permitting/ercs/2014/h-s-code-40709-5-cy-2014-report.pdf?sfvrsn=4. Accessed February 5, 2017.

38 ROG = reactive organic gases, which are compounds comprised primarily of atoms of hydrogen and carbon that have high photochemical reactivity. The term "ROG" is used by the ARB for air quality analysis and is defined the same as the federal term "volatile organic compound" (VOC).

39 Emission Reduction Offset Transaction Costs Summary Report for 2015. California Air Resources Board, Sacramento, CA. May 16, 2016.

40 Emission Reduction Offset Transaction Costs Summary Report for 2016. California Air Resources Board, Sacramento, CA. May 2017.

41 To calculate the weighted average, each sale price was weighted by tons sold.

3.3.4.2 Priority Reserve

It may be possible for a new thermal-based conversion technology facility to take advantage of a SCAQMD program called "Priority Reserve" to obtain emission reduction credits at substantially reduced prices for specific priority sources. The SCAQMD's Priority Reserve is a "bank account" of emission reduction credits which are generally available only to essential public service providers, such as publicly owned sewage treatment plants, as well as innovative technology and research projects. AQMD's Priority Reserve receives credits when facilities permanently shut down and surrender their offsets.[43] The following are defined as priority sources:[44]

- Innovative technologies that have lower emissions from the affected source than would have occurred with the use of BACT.
- Experimental research operations; priority reserve credits may be used for no more than two years.
- Essential public services, which are defined to include:
    - Sewage treatment facilities, which are publicly owned or operated, and consistent with an approved regional growth plan.
    - Prisons.
    - Police facilities.
    - Firefighting facilities.
    - Schools.
    - Hospitals.
    - Construction and operation of a landfill gas control or processing facility.
    - Water delivery operations.
    - Public transit.
- Facilities that generate electricity for their own use and are less than 10 megawatts (MW).[45]

If the applicant can demonstrate that its project falls into one of these categories, then it may be possible to obtain offsets from the Priority Reserve.

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42 Rule 1304(d)(1)(A).
43 "AQMD Strengthens Air Quality Rules for New Power Plants." South Coast Air Quality Management District, Diamond Bar, CA. August 3, 2007. http://www.aqmd.gov/home/library/public-information/2007-news-archives/rules-strengthened-for-new-power-plants.
44 Rule 1309.1(a).
45 Facilities that generated electricity for distribution in the state grid system were eligible in the early 2000s, but are not now.

3.3.4.3 Resource Recovery Facilities

There may be another way around the emissions offsets issue. The California Health and Safety Code explicitly exempt emissions offsets for "resource recovery and energy conservation projects,"[46] as long as they meet the following requirements:

- The project produces 50 megawatts or less of electricity. In the case of a combined cycle project, the electrical capacity of the steam turbine may be excluded from the total electrical capacity of the project for purposes of this paragraph if no supplemental firing is used for the steam portion and the combustion turbine has a minimum efficiency of 25 percent.

- The project processes municipal wastes and produces more than 50 megawatts, but less than 80 megawatts, of electricity.

- The project will use the appropriate degree of pollution control technology (BACT or LAER) as defined and to the extent required by the district permit system.

- Existing permits for any item of equipment to be replaced by the project, whether the equipment is owned by the applicant or a thermal beneficiary of the project, are surrendered to the district or modified to prohibit operation simultaneously with the project to the extent necessary to satisfy district offset requirements. The emissions reductions associated with the shutdown of existing equipment shall be credited to the project as emissions offsets in accordance with district rules.

- The applicant has provided offsets to the extent they are reasonably available from facilities it owns or operates in the air basin and that mitigate the remaining impacts of the project.

- For new projects that burn municipal waste, landfill gas, or digester gas, the applicant has, in the judgment of the district, made a good faith effort to secure all reasonably available emissions offsets to mitigate the remaining impact of the project, and has secured all reasonably available offsets.

According to Health and Safety Code § 39050.5, a "resource recovery project" means a project which converts municipal wastes, agricultural wastes, forest wastes, landfill gas, or digester gas in a manner so as to produce energy as a byproduct in the air basin in which they are produced. A potential problem is that the code language assumes that municipal solid waste is "burned," not converted.

4.0 ENVIRONMENTAL DOCUMENTATION UNDER CEQA

4.1 CEQA Overview

It is almost certain that any thermal-based conversion technology project in California would be subject to review under the California Environmental Quality Act (CEQA). CEQA requires that decision-makers take environmental impacts into account when approving projects, and it requires mitigation, to the greatest extent feasible, of potentially significant impacts. CEQA documents are

46 California Health and Safety Code, § 42314.

prepared by "lead agencies," which are either agencies that wish to carry out a project (e.g., Caltrans building a road) or those that have the authority and responsibility to approve or deny actions by private parties, such as a city or county.

Four types of documents implement CEQA: a categorical exemption (CE), a negative declaration (ND), a mitigated negative declaration (MND), or an environmental impact report (EIR). A project qualifies for a CE if it is in a legally defined category of activities that have proven through experience to have no significant environmental impact. A negative declaration is appropriate when a project generates no significant impacts and no mitigation measures are needed. A MND is appropriate when there are potentially significant impacts, but the impacts can be mitigated to the point of not being significant. An EIR is required when a project has one or more potentially significant impacts that cannot be mitigated to less than significant levels. An EIR is also appropriate under certain other circumstances, including: (a) an EIR is required by statute;[47] (b) the project generates public controversy concerning potential adverse impacts that may result from project implementation; or (c) the project is large, complex, and/or requires a great deal of technical analysis. Because waste conversion projects potentially generate air quality and other environmental impacts and are typically subject to significant public controversy, it is anticipated that an EIR will most likely be the appropriate document for a waste conversion project in Los Angeles County.

4.2 Preparation of an Initial Study

An initial study (IS) is performed to determine whether the project will have potentially significant impacts in various impact categories. If it is known at the outset that some impacts will be significant and that an EIR is necessary, then the initial study can be used as a screening tool to identify categories with no impact and to exclude them from further analysis. If the IS determines that the project would result in potentially significant impacts, but the impacts can be mitigated to the point of not being significant, then the Lead Agency would use the IS as the basis for preparing a ND or MND. The IS would be attached to the ND or MND as technical justification for the decision.

Another function of the IS is to provide information to other public agencies when a Notice of Preparation (NOP) of an EIR is distributed, as discussed below. That way the agencies know in advance what some of the important impacts may be, and can advise the lead agency on what to include in the EIR.

The impact categories currently evaluated under the CEQA Guidelines are:[48]

- Aesthetics
- Agriculture and forestry resources
- Air quality
- Biological resources
- Cultural resources
- Geology/soils
- Greenhouse gas emissions
- Hazards and hazardous materials

47 California Public Resources Code, § 21151.1.
48 https://www.opr.ca.gov/docs/Inital_Study_Checklist_Form.pdf.

- Hydrology/water quality
- Land use/planning
- Mineral resources
- Noise
- Population/housing
- Public services
- Recreation
- Transportation/traffic
- Utilities/service systems

Please note that the California Governor's Office of Planning and Research (OPR) is currently considering several changes to the CEQA guidelines, including the categories list. An initial study preparer needs to check with the OPR website to obtain the latest version. In addition, several cities in Los Angeles County have their own versions of the initial study checklist, which must be followed for projects in their jurisdictions.

Under each initial study category, the lead agency needs to address various standard questions. For example, under air quality the questions ask whether the project would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any air pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

The IS preparer has four options for answering any checklist question:

- Potentially significant impact.
- Less than significant with mitigation incorporated.
- Less than significant impact.
- No impact.

If the initial study is to be used as a prelude to an EIR, then full documentation for the answers is not necessary; an answer can be, "this issue will be analyzed in the EIR." However, if the initial study is to be the only analysis presented to decision-makers, then the answers need to be fully supported by data and analysis, often contained in accompanying technical studies.

4.3 Air Quality Analysis Under CEQA

Air quality is a special case, if the SCAQMD will be issuing permits for the equipment. As was discussed in **Section 3.3** the new source review determines whether operation of the equipment

could result in violation of air quality standards or be inconsistent with applicable control plans, and assigns permit conditions to make sure that violations do not occur. Therefore, emissions from permitted equipment are not normally included in the CEQA analysis. However, the CEQA analysis does include emissions from project construction (which can be significant in the short term), from traffic generated by the project (e.g., waste hauling trucks), and from non-permitted sources, such as space heaters.

4.4 Environmental Impact Reports

4.4.1 Preparation of a Draft EIR

4.4.1.1 Circulation of Notice of Preparation (NOP) and Scoping Meetings

After making the decision to prepare an EIR, the lead agency distributes a NOP to the public agencies that are responsible for environmental resources that could be affected by the project (e.g., natural resource agencies, Native American tribes, transportation agencies). A NOP should also be sent to organizations (e.g., the Sierra Club or local homeowners associations) and individuals who have requested receipt as well as posted at the lead agency and local libraries and published in local newspapers.

A NOP announces the lead agency's intent to prepare a draft EIR and solicits feedback from public agencies regarding the scope and content of the EIR. A copy of the IS is typically attached to the NOP, and public agencies review the IS so as to get an understanding of the probable environmental effects of the project. Public agencies are asked to provide, within 30 days, a written response to the NOP that describes the specific environmental issues, project alternatives, and mitigation measures that each public agency needs to see addressed in the EIR. To further assist in consultation between the lead agency and other relevant public agencies, the agencies may schedule private meetings.

For large scale projects or sensitive projects, such as a waste conversion project in Los Angeles County, the lead agency would also conduct one or more public scoping meetings. Notice of the public scoping meeting would be included with the NOP. The scoping meeting would provide public agencies, organizations, and individuals with the opportunity to learn about the potential environmental effects of the project, to formally submit oral or written comments on the project, and to shape the content and focus of the draft EIR. An important function of the scoping meeting is to provide members of the public the opportunity to voice concerns with the project; their concerns can affect the project planning and should be addressed in the draft EIR, as appropriate.

4.4.1.2 Preparation of a Draft EIR

The initial sections of an EIR document consist of an executive summary and a project description. There follow chapters that address each of the environmental topical issues (e.g., air, noise, water quality) that would potentially be subject to significant impacts from the project. For each topical issue, the EIR must establish the existing environmental setting prior to development of the project, evaluate and discuss the potential impacts of the project, describe mitigation measures that must be implemented to reduce potential impacts, and draw a conclusion regarding the level of impact both before and after incorporation of the mitigation measures. Included in the impact analysis is an evaluation of the project's contribution to a cumulative impact on the environment. A cumulative impact is an environmental impact that results from the incremental impact of the project when it

is added with the incremental impact of other projects, including projects that are reasonably expected to develop in the future. Cumulative impacts can occur when a project alone would not result in a significant impact, as is sometimes the case, for example, with air quality impacts.

Mitigation is an essential part of CEQA. Compliance with the preexisting requirements of environmental agencies does not constitute mitigation. Rather, mitigation measures are specific requirements that are established for the project so as to mitigate any significant impacts that remain after the incorporation of existing requirements. For example, if a project complies with all the South Coast Air Quality Management District's rules and permit conditions, there may still be residual impacts, and these must be mitigated. Mitigation measures are prepared for each significant environmental impact and should be roughly proportional to the extent of the impact. Mitigation measures are not required for impacts that are less than significant.

Following the impact analysis, an EIR includes an analysis of possible project alternatives that were considered as part of project development. The alternatives analysis must include a range of reasonable alternatives to the project or the project's location and must compare the environmental impacts of the various alternatives. This is typically provided in a matrix. The alternative analysis must include a "No Project" alternative that considers the environmental effects that would occur if the project were not approved. While the potential impacts of the various alternatives must be considered, the discussion of the alternatives is much less detailed than the discussion of proposed project's impacts.

4.4.2 Public Review

Given public opposition to some proposed thermal-based waste conversion technology projects, the public review requirements of CEQA may be of concern to the proponent. The public review period for a draft EIR is normally 45 days. This type of project would probably not meet the requirements for a 30-day review period.[49]

OPR will distribute draft EIR documents to the public agencies identified on the NOC. However, the Lead Agency is responsible for notifying other organizations and individual members of the public of the availability of a draft EIR. At the same time the Lead Agency sends the NOC to OPR, it must also mail a Notice of Availability (NOA) to all organizations and individuals who have previously requested to be on the project's mailing list and receive notifications. In addition, the NOA must be posted with the County Clerk in the county where the project would be located. The Lead Agency must also notify the public of the availability of a draft EIR by one or more of the following methods: publishing the NOA in a local newspaper, posting a notice on the project site, and directly mailing the NOA to the owners and occupants of the properties that adjoin the project site.

The NOA includes basic information about the project, lists the project's significant environmental effects, identifies the public review period, lists the addresses of locations where the draft EIR is available for public review, and announces the date, time and place of any public meetings or hearings that the Lead Agency will hold to receive comments on the draft EIR. A copy of the draft EIR need not be attached to the NOA, particularly when the NOA is sent to individuals. Instead, the Lead Agency must keep a copy of the draft EIR and relevant reference documents at the lead agency's offices in a location that the public can access. In addition, the lead agency must distribute

49 For a 30-day review, a project must have only a localized effect and not require review by any state agency.

copies of the draft EIR to local libraries in the project area. During the public review period, members of the public are invited to review the draft EIR at the lead agency or at the local libraries.

Comments on the draft EIR may be submitted in writing to the lead agency or may be given orally or in writing at public hearings or meetings. The lead agency must prepare written responses to all the comments received from public agencies, organizations and individuals during the public review period. In some instances, the lead agency may need to conduct additional environmental impact analyses to respond to a particular comment. Some comments may require revisions to the text of the draft EIR.

4.4.3 Preparation of a Final EIR

The final EIR consists of two main parts: the revisions to the draft EIR and the responses to comments. The lead agency may show the revisions to the draft EIR either by including the original draft EIR plus an errata sheet showing the changes to the EIR, or else by preparing a revised draft EIR that shows the strikeouts and additions to the original draft EIR. The responses to comments consist of three parts: the actual comments received during the review period (verbatim or in summary); the names of the persons, organizations, and public agencies that made the comments; and the lead agency's written responses to the comments.

Unless significant new information is added to the EIR, the final EIR does not need to be circulated for public review. However, each of the public agencies that commented on the EIR must receive a copy of the response to comments 10 days prior to the time the lead agency certifies the final EIR.

Ten days after the public agencies receive the response to comments, the decision-making body of the lead agency may certify the final EIR. Certifying the EIR means that the lead agency officially states that the final EIR is adequate under CEQA and that the decision-making body reviewed and considered the final EIR prior to reaching its decision on the project. **Certifying the final EIR is not the same as approving the project**. A Lead Agency could certify an EIR but deny a project.

4.4.4 Decision on the Project

In addition to certifying an EIR, a Lead Agency must follow a number of steps as part of the approval process for the project.

4.4.4.1 Findings of Fact and Mitigation and Monitoring Program

When a final EIR identifies one or more significant environmental impacts, the lead agency must prepare a Findings of Fact. The Findings of Fact summarizes the anticipated environmental impacts of the project and describes the feasible mitigation measures that are incorporated into the project. It also must describe the specific reasons why certain mitigation measures or project alternatives have been deemed infeasible.

When the Findings of Fact indicates that mitigation measures have been incorporated into the project, then the Lead Agency must also adopt a Mitigation and Monitoring Program (MMRP) that demonstrates how the mitigation measures will be enforced. A MMRP is typically prepared as a matrix that separately lists each impact, the corresponding mitigation measure, the agencies that

are responsible for monitoring and/or implementing the mitigation measure, and when the measure will be implemented (e.g., prior to issuance of a grading permit).

4.4.4.2 Decision on the Project and Statement of Overriding Considerations

After considering the final EIR, the Findings of Fact, and Mitigation and Monitoring Program, the lead agency may decide to approve or deny the project. In approving the project, the Lead Agency must state either (a) the project as approved would not result in significant environmental impacts, or (b) the project still would result in significant environmental impacts even after the incorporation of feasible mitigation measures. If the project still would result in significant environmental impacts after the incorporation of feasible mitigation measures, these impacts are described as "unavoidable" significant impacts. As part of the project approval process, the Lead Agency must formally state that any remaining unavoidable significant impacts are acceptable due to the overriding benefits of the project. The Lead Agency must prepare a statement of overriding considerations that explains the reasons why it is approving the project despite the significant environmental impact.

4.4.4.3 Filing of Notice of Determination (NOD)

After a lead agency approves a project, it must file a Notice of Determination (NOD) with OPR within five days of the project approval. The NOD must also be posted at the County Clerk's office for 30 days. The NOD consists of basic information about the project, including the date the project was approved. It also indicates whether or not the project will have a significant impact on the environment, includes mitigation measures, and/or required a statement of overriding considerations. The NOD identifies the location where the final EIR and project approval documents are available for public review.

Filing and posting the NOD initiates a 30-day statute of limitations for legal challenges to the approval. The statute of limitations cuts off the right of another person to file a court action challenging approval of the project after the specified time period has expired.