APPENDIX B-1

DRAFT ENVIRONMENTAL IMPACT ANALYSIS

FOR THE

Proposed Regulatory Amendments to the Cap-and-Invest Program

California Air Resources Board

1001 I Street

Sacramento, California 95814

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ATTACHMENTS

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LIST OF ABBREVIATIONS

µg/m3	microgram per cubic meter
AB	Assembly Bill
APE	area of potential effect
APU	auxiliary power unit
BACT	Best Available Control Technology
BAR	Bureau of Automotive Repair
BARCT	Best Available Retrofit Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CARB or Board	California Air Resources Board
CCAA	California Clean Air Act
CCR	Code of Regulations
CCS	Carbon capture and sequestration
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CHC	commercial harbor crafts
CHE	Cargo Handling Equipment
CI	compression-ignition
CLEEN II	Continuous Lower Energy, Emissions, and Noise Phase II
CMAQ	Congestion Mitigation and Air Quality Improvement
CO	carbon monoxide

DAC	Disadvantaged community
dBA	A-weighted decibels
DPF	diesel particulate filters
Draft EIA	Draft Environmental Impact Analysis
EGR	exhaust gas recirculation
FTA	Federal Transit Administration
GHG	greenhouse gas
hp	horsepower
ICE	internal combustion engines
ICT	Innovative Clean Transit
IMO	International Maritime Organization
kW	kilowatt
LDV	light-duty vehicles
LEAP	Leading Edge Aviation Propulsion
L_{eq}	equivalent level measurements
L_{max}	maximum sound level
LNG	liquified natural gas
$MTCO_2e$/year	metric tons of carbon dioxide equivalent per year
MMC	mine methane capture
MV Fees	California Motor Vehicle Registration Fee
MVEB	Motor Vehicle Emissions Budget
MW	megawatts
NAAQS	national ambient air quality standards
NO_2	nitrogen dioxide
NOP	Notice of Preparation

NOx	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
ODS	ozone depleting substances
OGV	ocean-going vessels
PGM	platinum-group metals
PM	particulate matter
PM_{10}	respirable particulate matter with aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	fine particulate matter with aerodynamic diameter of 2.5 micrometers or less
PMT	passenger miles travelled
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
RACM	Reasonably Available Control Measures
RCW	regulated California waters
ROG	reactive organic gas
RPS	Renewables Portfolio Standard
RTC	Response to Comments
SB	Senate Bill
SCR	selective catalytic reduction
SIP	State implementation plan
SO_2	sulfur dioxide
SORE	Small Off-Road Engines
TAC	toxic air contaminant
TAPS	Twin Annular Premixing Swirler

TCM	Transportation Control Measures
TCR	tribal cultural resources
TDM	transportation demand management
The Act	Clean Air Act
TNC	transportation network companies
TRU	transport refrigeration units
U.S. EPA	United States Environmental Protection Agency
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
WSA	Water Supply Assessment
ZEV	zero-emission vehicle

1.0 INTRODUCTION AND BACKGROUND

A. Introduction

This Draft Environmental Impact Analysis (Draft EIA) is a program environmental document prepared pursuant to the California Environmental Quality Act (CEQA) for the Proposed Regulatory Amendments to the Cap-and-Invest Program (Proposed Amendments).[1] This Draft EIA is included as Appendix B of the California Air Resources Board's (CARB or Board) Initial Statement of Reasons (ISOR or Staff Report) for the Proposed Amendments that will be presented to the Board for consideration. The Project Description section of this Draft EIA presents a summary of the Proposed Amendments. A detailed description of the Proposed Amendments is included in the "Staff Report or ISOR" released on January 20, 2026, which is hereby incorporated by reference.

This Draft EIA is intended to identify and disclose the Proposed Amendments' potential significant impacts on the environment and identify potential feasible mitigation measures and alternatives to lessen or avoid those significant environmental impacts. The Proposed Amendments are intended to achieve environmental benefits, including greenhouse gas (GHG) reductions, criteria air pollutant reductions, and other air quality improvements. However, in some cases, as described in Chapter 4.0 of this Draft EIA, potentially significant effects to environmental resources may occur due to the implementation of compliance responses (i.e., actions taken in response to implementation of the Proposed Amendments that would have a physical impact) associated with the Proposed Amendments. It is expected that many of these potentially significant impacts can be feasibly avoided or mitigated to a less than significant level, as described in each resource area, due to project-specific environmental review processes associated with compliance responses and compliance with local and State laws and regulations. However, the Draft EIA takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate the risk that feasible mitigation may not be sufficient to mitigate an impact to less than significant or may not be implemented by other parties) and discloses, for CEQA compliance purposes, that potentially significant environmental impacts may be unavoidable.

B. Scope of Analysis and Assumptions

The degree of specificity required in a CEQA document corresponds to the degree of specificity inherent in the underlying activity it evaluates. An EIA for broad programs cannot be as detailed as it can be for specific projects (Title 14 California Code of Regulations (CCR) Section 15146). For example, the assessment of a construction project would be naturally more detailed than one concerning the adoption of a local

[1] In AB 1207 the Legislature stated its intent that the Cap-and-Trade Program change its name to the Cap-and-Invest Program. The Cap-and-Invest Program is implemented by CARB's Cap-and-Trade Regulation. This document refers to the Program as Cap-and-Invest, and the Proposed Amendments will officially change the name of the Regulation to Cap-and-Invest.

general plan because construction-related effects can be predicted with more accuracy (Title 14 CCR Section 15146(a).) Because this analysis addresses a broad regulatory program, a general level of detail is appropriate. However, this Draft EIA makes a rigorous effort to evaluate significant adverse impacts and beneficial impacts of the reasonably foreseeable compliance responses that could result from implementation of the Proposed Amendments and contains as much information about those impacts as is currently available, without being unduly speculative.

The scope of analysis in this Draft EIA is intended to help focus public review and comments on the Proposed Amendments, and ultimately to inform the California Air Resources Board of the environmental benefits and adverse impacts of the Proposed Amendments. This analysis specifically focuses on potentially significant adverse and beneficial impacts on the physical environment resulting from reasonably foreseeable compliance responses to implementation of the Proposed Amendments.

The analysis of potentially significant adverse environmental impacts of the Proposed Amendments is based on the following assumptions:

1. The analysis addresses the potentially significant adverse environmental impacts resulting from implementation of the Proposed Amendments compared to existing conditions.

2. The analysis of environmental impacts and determinations of significance are based on reasonably foreseeable compliance responses taken as a result of implementation of the Proposed Amendments.

3. The analysis addresses environmental impacts within California and outside the State to the extent they are reasonably foreseeable and do not require speculation.

4. The level of detail of impact analysis is necessarily and appropriately general because the Proposed Amendments are programmatic. While the general locations of existing facilities and infrastructure are known, decisions by the regulated entities regarding compliance responses and the precise location of the many components covered in the Proposed Amendments are unknown. Furthermore, attempting to predict decisions by entities regarding the specific location and design of infrastructure, source and production of materials, and other activities undertaken in response to implementation of the Proposed Amendments would be speculative (if not impossible) at this early stage, given the influence of other business and market considerations in those decisions. As a result, there is some inherent uncertainty in the degree of mitigation that would ultimately need to be implemented to reduce any potentially significant impacts identified in this Draft EIA. Consequently, this Draft EIA takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate the potential that feasible mitigation may not be implemented by the agency with authority to do so, or may not be sufficient) and discloses, for CEQA compliance purposes, that potentially significant environmental impacts may be unavoidable, where appropriate. It is also possible that the amount of mitigation necessary to reduce environmental impacts to below a significant level may be less than disclosed

in this Draft EIA on a case-by-case basis. Specific actions undertaken to implement the Proposed Amendments would undergo project-level environmental review and compliance processes as required at the time they are proposed. It is expected that many individual development projects would be able to feasibly avoid or mitigate potentially significant impacts to a less-than-significant level.

5. This Draft EIA generally does not analyze site-specific impacts when the location of future facilities or other infrastructure changes is speculative. However, the Draft EIA does examine regional (e.g., local air district and/or air basin) and local issues to the degree feasible, where appropriate. As a result, the impact conclusions in the resource-oriented sections of Chapter 4.0, "Impact Analysis and Mitigation Measures", cover broad types of impacts, considering the potential effects of the full range of reasonably foreseeable actions undertaken in response to the Proposed Amendments.

C. Background

California's existing Cap-and-Invest Program (formerly Cap-and-Trade Program) was adopted by CARB in October 2011 and took effect on January 1, 2012. As described further below, the Cap-and-Invest Program (Program) has undergone regulatory amendments eight times since its adoption. The first auction of allowances under the Program occurred in November 2012, and the first compliance period under the Program began on January 1, 2013. On January 1, 2014, California and the Canadian Province of Québec formally linked their cap-and-trade programs, allowing the transfer and mutual use of compliance instruments between the two jurisdictions. On January 1, 2018, California, Québec, and the Canadian Province of Ontario formally linked their cap-and-trade programs, similarly allowing the transfer and mutual recognition, and use of compliance instruments among the three jurisdictions. On July 3, 2018, the Ontario government published a regulation (386/18) revoking Ontario's Cap-and-Trade Program (144/16) and suspended all Ontario entity accounts. On December 13, 2018, the Board approved regulatory amendments to the Cap-and-Invest Program to remove Ontario as a recognized Emission Trading System (ETS) linked to the California Cap-and-Invest Program.

The Cap-and-Invest Program establishes a declining limit on major sources of GHG emissions, and it creates a powerful economic incentive for investment in cleaner, more efficient technologies. The Cap-and-Invest Program applies to entities and activities that collectively comprise approximately 80% of the State's GHG emissions. CARB creates allowances equal to the total amount of permissible emissions (i.e., the "cap" or "budget"). One allowance equals one metric ton of carbon dioxide equivalent emissions (using the 100-year global warming potentials). Fewer allowances are created each year; thus, the annual caps decline over time. An increasing annual auction reserve (or floor) price for allowances that increases each year and the reduction in annual allowance budgets creates a steady and sustained carbon price signal to prompt action to reduce GHG emissions. All facilities covered in the Cap-and-Invest Program are still subject to applicable local air quality permit limits for criteria and toxic air pollutants. The Cap-and-Invest Program currently covers in-state electricity generators, including electricity

imported into California; large industrial sources of GHG emissions; transportation fuel suppliers; and suppliers of natural gas and propane combusted at commercial, residential, and small industrial facilities, and other sources.

Under the Cap-and-Invest Program, covered entities do not have individual or facility-specific GHG emissions reduction requirements. Rather, all companies covered by the Cap-and-Invest Program are required to surrender allowances in an amount equal to their total covered GHG emissions during each compliance period. Covered entities can also meet a limited portion of their compliance obligation (4% for emissions during 2021-2025, and 6% for emissions after 2025) by surrendering approved offset credits issued under CARB-approved compliance offset protocols. As part of the initial adoption of the Cap-and-Invest Program in October 2011, CARB adopted compliance offset protocols for U.S. Forest Projects, Livestock Projects, Urban Forest Projects, and Ozone Depleting Substances (ODS) Projects.

In 2012, CARB proposed two sets of amendments to the Regulation. The first set of amendments, related to Cap-and-Invest Program implementation, was approved by the Board in June 2012, and took effect in September 2012. The second set of amendments, related to jurisdictional linkage with Québec, was approved by the Board in April 2013 and took effect in October 2013. The start date for the linkage between the California Cap-and-Invest Program and the Québec Cap-and-Trade System was January 1, 2014.

In 2013, CARB proposed another set of amendments to the Regulation to extend transition assistance for some covered entities, refine the required data collected from registered participants to support market oversight, and add an additional cost-containment measure. These amendments also included a new compliance offset protocol for Mine Methane Capture Projects, updates to offset implementation and usage, refinement of resource shuffling provisions, and changes to the surrender order of compliance instruments. The Board approved these amendments in April 2014, and they took effect July 1, 2014.

Also in 2014, CARB staff proposed an additional two sets of regulatory amendments to the Cap-and-Invest Program. The first set of targeted amendments clarified the quantification of production data, updated the compliance offset protocols, and modified requirements related to compliance, corporate association disclosures, and offset credit transfer price reporting for market transactions. This first set of 2014 amendments was adopted by the Board in September 2014 and became effective January 1, 2015. The second set of 2014 amendments modified the Regulation to include a new Compliance Offset Protocol for Rice Cultivation Projects and to update the Compliance Offset Protocol for U.S. Forest Projects (U.S. Forest Protocol) to allow eligibility for projects in parts of Alaska. This second set of amendments was adopted by the Board in June 2015 and became effective November 1, 2015.

In 2016 and 2017, CARB staff proposed amendments to clarify compliance obligations for certain sectors; continue Cap-and-Invest Program linkage with Québec beyond 2020; link the Cap-and-Invest Program with the new cap-and-trade program in Ontario, Canada, beginning January 2018; and establish a post-2020 framework for caps, enabling future

auction and allocation of allowances, and continuing all other provisions needed to implement the Program after 2020. The Board adopted these amendments on July 27, 2017, and they became effective October 1, 2017.

In January 2018, CARB staff proposed a narrow set of amendments to the Cap-and-Invest Program to ensure that, during a change in ownership of assets under the Cap-and-Invest Program, responsibility to meet compliance obligations would also be transferred. The amendments also clarified the procedure for establishing the Auction Reserve Price to be consistent with the procedure for establishing the Auction Reserve Price under the Québec regulations. Further, the amendments provided California with the ability to certify a joint auction regardless of which jurisdiction's Auction Reserve Price is used. The Board approved these amendments on March 22, 2018, and they became effective May 30, 2018.

In October 2018, CARB proposed amendments to the Cap-and-Invest Program to conform to the requirements of Assembly Bill (AB) 398 (Garcia, Chapter 135, Statutes of 2017), which included amendments to establish a price ceiling and two price containment points; to revise the quantitative offset usage limits in the post-2020 period; to establish criteria such that at least half of the allowable quantitative offset usage limits post-2020 result in direct environmental benefits in the State of California as required by AB 398; and to specify leakage assistance factors for industrial allowance allocation. The amendments also made other updates to allowance allocation; clarified use of allocated allowance value for electric distribution utilities and natural gas suppliers; streamlined and set additional implementation requirements for the Compliance Offset Program; established a process to address emissions leakage associated with electricity imports via the Western Energy Imbalance Market (WEIM); and included other changes to improve and clarify the Cap-and-Invest Program. The amendments also included modifications to reflect changes undertaken by Ontario to revoke the Ontario Cap-and-Trade Program effective July 3, 2018. The Board approved these amendments on December 13, 2018, and they became effective April 1, 2019.

California has been on the road to reducing its GHG emissions since the Global Warming Solutions Act of 2006, also known as AB 32 (Núñez, Chapter 488, Statutes of 2006), was signed into law. Senate Bill (SB) 32 (Pavley, Chapter 250, Statutes of 2016) further directed CARB to ensure that statewide GHG emissions are reduced to at least 40% below the 1990 levels no later than December 31, 2030. AB 1279 (Muratsuchi, Chapter 337, Statutes of 2022) calls for both reducing anthropogenic statewide emissions by 85% below 1990 levels by 2045 and achieving carbon neutrality by 2045.

In 2025, the Legislature extended the Cap-and-Invest Program to 2045 with a pair of bills, AB 1207 (Irwin, Chapter 117, Statutes of 2025) and SB 840 (Limón, Chapter 121, Statutes of 2025), that passed both chambers with a supermajority vote. These bills reaffirm the role of Cap-and-Invest in supporting progress toward the 2030 and 2045 GHG reduction targets and include targeted changes to the Program.

The three-pronged approach of incentives, regulations, and carbon pricing in the form of a Cap-and-Invest Program has been included in every AB 32 Scoping Plan since the

first one was adopted in 2008. The 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) (CARB 2022a), approved by CARB in December 2022, lays out a cost-effective and technologically feasible path to achieve the mandates in AB 1279 and states the need to continue with a diverse portfolio of policies to fight climate change, including the ongoing implementation of the Cap-and-Invest Program.

D. Prior Environmental Analyses

1. Cap-and- Invest (2010)

Prior to the adoption of the Cap-and-Invest Program in 2011, CARB prepared a programmatic EA in a document entitled "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms" (2010 FED), included as Attachment O to the Staff Report: Initial Statement of Reasons (ISOR) released for public review and comment in November 2010 (CARB 2010a). The 2010 FED is incorporated by reference into this Draft EIA. The 2010 FED analysis was based on the expected compliance responses of covered entities under the Cap-and-Invest Program. To achieve compliance, covered entities would need to (1) upgrade equipment, (2) decarbonize (fuel switching), (3) implement process changes, and (4) surrender compliance instruments. The 2010 FED also analyzed the potential indirect impacts associated with development of offset projects based on the four Compliance Offset Protocols proposed: (1) ODS Projects, (2) Livestock Projects, (3) Urban Forest Projects, and (4) U.S. Forest Projects.

The 2010 FED concluded that covered entities' compliance with the Cap-and-Invest Program would result in beneficial impacts to energy demand, air quality, and climate change through reductions in emissions of GHGs, criteria air pollutants, and toxic air contaminants (TACs). It concluded there would be no impacts or less-than-significant impacts to aesthetics, agricultural and forest resources, hazards, land use, noise, employment, population and housing, public services, recreation, transportation and traffic, and utilities/service systems. The 2010 FED concluded there could be short-term construction-related, potentially significant adverse impacts to air quality, biological resources, cultural resources, geology/soils and minerals, and hydrology/water quality, due to construction activities for facility-specific projects. Although the potential for adverse localized air quality impacts was found to be highly unlikely, the 2010 FED conservatively considered them potentially significant and unavoidable.

The 2010 FED concluded that implementation of offset projects under the four approved compliance offset protocols would also result in beneficial impacts to GHG emissions and no adverse impacts or less-than-significant impacts in all resource areas except for the following: implementation of projects under the Compliance Offset Protocol for Livestock Projects (Livestock Protocol) were identified as having the potential for significant adverse impacts to odors, and potentially significant construction-related impacts to cultural resources, noise, and transportation/traffic; implementation of projects under the Urban Forestry Protocol were identified as having the potential for significant adverse impacts to cultural resources; and implementation of projects under the U.S. Forest Protocol were

identified as having the potential for significant adverse impacts to biological resources and land use.

The 2010 FED identified mitigation that could, if implemented at the project-level, reduce most of the identified impacts to a less-than-significant level. Implementation of the mitigation identified in the 2010 FED would be the responsibility of lead agencies with local permitting authority to analyze site- or project-specific impacts because the programmatic analysis in the 2010 FED could not determine with any specificity project-level impacts. Furthermore, CARB does not have the authority to implement project-level mitigation for specific projects carried out to comply with the Cap-and-Invest Program. Because the programmatic analysis of the 2010 FED could not determine project-specific details of impacts and mitigation, and due to the inherent uncertainty in the degree of mitigation ultimately implemented to reduce the potentially significant impacts, the 2010 FED took a conservative approach in its post-mitigation significance conclusion, finding potentially significant impacts to these resource areas as significant and unavoidable.

The Board approved written responses to comments on the 2010 FED and adopted findings for the significant adverse impacts in Resolution 11-32 adopting the Cap-Program. The written responses to environmental comments were included in the Final Statement of Reasons (FSOR) prepared for the Regulation (CARB 2011a). The Board also adopted the Adaptive Management Plan to address any unanticipated localized air quality impacts resulting from the Cap-and-Invest Program and any unanticipated biological resource impacts resulting from implementation of projects under the U.S. Forest Protocol (CARB 2011b). These documents can be found on the CARB website:http://www.arb.ca.gov/regact/2010/capandtrade10/capandtrade10.htm.

2. Regulatory Amendments to the Cap-and-Invest Program (2012)

In 2012, CARB proposed two sets of regulatory amendments to the Cap-and-Invest Program. The first set of amendments, related to program implementation, was approved by the Board in June 2012. The second set of amendments, related to jurisdictional linkage with Québec, Canada, was approved by the Board in April 2013. A supplemental EA (2012 EA) was prepared for these amendments and was included in Chapter IV of the Staff Report: Initial Statement of Reasons entitled “Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms to Allow for the Use of Compliance Instruments Issued by Linked Jurisdictions” (CARB 2012).

The 2012 EA concluded the regulatory amendments to clarify the Cap-and-Invest Program to help CARB implement, oversee, and enforce the program would not change what was already required under the existing Cap-and-Invest Program or the methods of compliance by covered entities evaluated in the 2010 FED (i.e., upgrade equipment, decarbonize, implement process changes, and surrender compliance instruments); therefore, the potential for environmental impacts fell within the scope and scale of those already analyzed. The analysis also considered the potential for indirect environmental impacts resulting from California-covered entities acquiring offset credits from projects in Québec. The 2012 EA determined that implementation of the linkage amendments could

result in California entities acquiring credits from offset projects under Québec's Digesters (i.e., Livestock), ODS, and Landfill Gas Offset Protocols, which could cause indirect environmental effects. The 2012 EA relied on the prior EA conducted for California's Compliance Offset Protocol for ODS Projects (ODS Protocol), the Livestock Protocol, and CARB's Landfill Methane Regulation because Québec's protocols are substantially similar. Those prior EAs concluded that implementation of these types of offset projects would result in beneficial impacts to GHG emissions and no adverse impacts, or less-than-significant impacts, in all resource areas, except implementation of the Québec's Digesters Protocol, which was identified as having the potential for significant adverse impacts to odors, cultural resources, noise, and transportation/traffic. The analysis referenced recognized mitigation measures for these impacts and determined that these impacts could be avoided or reduced to a less-than-significant level. However, because the authority to determine project-level impacts and require project-level mitigation lies with the permitting agency for individual projects, in this case Québec agencies, and due to inherent uncertainty in the degree of mitigation ultimately implemented, the analysis took a conservative approach in its post-mitigation significance conclusions finding that impacts to odors, cultural resources, and transportation/traffic in Québec may remain significant after mitigation.

The Board approved written responses to comments on the EA and adopted findings for the significant adverse impacts in Resolution 13-7 adopting the linkage amendments. The written response to comments for the first set of amendments are also included in the FSOR released in July 2012 and for the linkage amendments in the FSOR released May 2013. These documents can be found on the CARB website: https://www.arb.ca.gov/regact/2012/capandtrade12/capandtrade12.htm.

3. Regulatory Amendments to the Cap-and-Invest Program (2013)

In 2013, CARB proposed one set of regulatory amendments to the Cap-and-Invest Program. This set of amendments, related to program implementation, was approved by the Board in April 2014. A supplemental 2013 EA (2013 EA) was prepared for these amendments and was included in Chapter III of the Staff Report: Initial Statement of Reasons entitled "Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms" (CARB 2013a). The 2013 EA found that the amendments to clarify the Cap-and-Invest Program to help CARB implement, oversee, and enforce the Regulation would not change what was already required or the methods of compliance by covered entities evaluated in the 2010 FED (i.e., upgrade equipment, decarbonize, implement process changes, and surrender compliance instruments). Therefore, the 2013 EA concluded that the potential for environmental impacts fell within the scope and scale of those already analyzed. Relying on the 2010 FED, the 2013 EA found that the amendments to the market and offset program implementation did not change the environmental stringency established in 2010. Regarding the allowance allocation amendments, the 2013 EA did not find any significant environmental impacts as compared to the 2010 FED. The amendments related to resource shuffling were also analyzed in the 2013 EA and found to be consistent with the 2010 FED. Similarly, covered sectors and exempt emissions were analyzed in

the 2010 FED. Therefore, the amendments in 2013 fell within the scope and scale of the 2010 findings.

Staff also prepared an EA for the addition of the Compliance Offset Protocol for Mine Methane Capture Projects (MMC Protocol) (CARB 2013b). The MMC Protocol EA found potentially significant and unavoidable biological and cultural resource impacts. The MMC Protocol EA identified mitigation that could reduce most of the identified impacts to a less-than-significant level. The MMC Protocol EA relied on agencies with local permitting authority to analyze site- or project-specific impacts because the programmatic nature of the MMC Protocol EA could not determine with any specificity the location of projects or project-level impacts. Further, CARB does not have the authority to require project-level mitigation for specific projects carried out under the MMC Protocol. Because the programmatic analysis of the MMC Protocol EA could not determine project-specific details of impacts and mitigation, and due to the inherent uncertainty in the degree of mitigation ultimately implemented to reduce the potentially significant impacts, the MMC Protocol EA took a conservative approach in its post-mitigation significance conclusion, finding impacts to these resource areas to be significant and unavoidable.

The Board approved written responses to comments on the MMC Protocol EA and adopted findings for the significant adverse impacts in Resolution 14-4 adopting the amendments. The written responses to comments for this set of amendments are included in the FSOR released in May 2014. These documents can be found on the CARB website: https://www.arb.ca.gov/regact/2013/capandtrade13/capandtrade13.htm.

4. Regulatory Amendments to the Cap-and-Invest Program (2014)

In 2014, CARB proposed additional regulatory amendments to the Cap-and-Invest Program. The proposed amendments included: (1) changes in market program implementation; (2) changes in allowance allocation; (3) adding CO_2 supplier imports as covered entities; (4) clarifications to product data reporting; and (5) updates to the existing Livestock Protocol, ODS Protocol, and U.S. Forest Protocol. Staff determined that the proposed updates to market program implementation, offset program implementation, and allowance allocation would not result in any new significant environmental impacts or a substantial increase in the severity impacts beyond those disclosed in the 2010 FED; therefore, the 2010 FED adequately addressed the potential environmental impacts of implementation of the amendments, and no additional environmental analysis was required for those updates. Similarly, for the proposed updates to the U.S. Forest Protocol, the Livestock Protocol, and the ODS Protocol, CARB determined that adoption of the proposed updated protocols had no potential to cause any new significant environmental impacts or a substantial increase in the severity of impacts previously disclosed in the 2010 FED, and there were no changes in circumstances or new information to warrant any additional environmental analysis. The Board approved the proposed amendments in November 2014 in Resolution 14-31. These documents can be found on the CARB website: https://www.arb.ca.gov/regact/2014/capandtrade14/capandtrade14.htm, and https://www.arb.ca.gov/cc/capandtrade/offsets/copupdatereferences.htm.

5. Regulatory Amendments to the Cap-and-Invest Program (2015)

In October 2014, CARB proposed an update to the U.S. Forest Protocol and a new Compliance Offset Protocol for Rice Cultivation Projects (Rice Cultivation Protocol). A supplemental EA (2014 EA) was prepared for each as part of the ISOR for the proposed amendments. CARB also prepared an EA for the Rice Cultivation Protocol (Rice Cultivation Protocol EA), which concluded that the Rice Cultivation Protocol would not result in significant adverse environmental impacts and would produce environmental benefits. The 2014 EA prepared for the proposed updated U.S. Forest Protocol concluded that the proposed changes would not result in any new significant adverse environmental impacts beyond what were previously addressed in the 2010 FED; however, the environmental impacts identified previously for the U.S. Forest Protocol in the 2010 FED would be extended geographically by the proposed updates by expanding project eligibility to areas of Alaska. Because some previously identified environmental impacts were significant, the supplemental analysis updated the environmental evaluation to consider the broadened geographic area of eligibility. The 2014 EA also concluded that implementation of the updated U.S. Forest Protocol would result in environmental benefits.

The Board approved written responses to comments on the 2014 EA and adopted findings for the significant adverse impacts and adopted the amendments in June 2015 in Resolution 15-19. The written responses to comments are also included in the FSOR released in October 2015. These documents can be found on the CARB website: https://www.arb.ca.gov/regact/2014/capandtradeprf14/capandtradeprf14.htm.

6. Regulatory Amendments to the Cap-and-Invest Program (2016)

In 2016, CARB proposed additional regulatory amendments to the Cap-and-Invest Program (2016 Amendments) the Board adopted these amendments on July 27, 2017, and they went into effect on October 1, 2017. The EA prepared for the 2016 Amendments (2016 EA) was included as Appendix B to the Staff Report: Initial Statement of Reasons entitled “Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms” (CARB 2016). The 2016 EA found that the 2016 Amendments would not substantially change the requirements or the methods of compliance for covered entities evaluated in the 2010 FED (i.e., upgrade equipment, decarbonize, implement process changes, and surrender compliance instruments). Therefore, the 2016 EA concluded that the potential for environmental impacts fell within the scope and scale of those already analyzed during the 2010 rulemaking. The 2016 EA found that the changes in the 2016 Amendments regarding implementation of the general carbon market and offsets program did not substantially change the environmental impacts identified in the 2010 FED. Regarding the allowance allocation amendments, the 2016 EA did not find any new significant environmental impacts beyond those found in the 2010 FED. Similarly, since covered sectors and exempt emissions were also analyzed in the 2010 FED, the 2016 Amendments fell within the scope and scale of the 2010 findings. The 2016 EA is incorporated herein by reference.

The Board approved written responses to comments on the 2016 EA and adopted findings for the significant adverse impacts in Board Resolution 17-21, which adopted the 2016 Amendments. The written responses to comments for the 2016 Amendments are included in the FSOR released in August 2017. Board Resolution 17-21 and the Final Statement of Reasons for the 2016 Amendments can be found on the CARB website: https://www.arb.ca.gov/regact/2016/capandtrade16/capandtrade16.htm.

7. Narrow Scope Regulatory Amendments to the Cap-and-Invest Program (2018)

In early 2018, CARB proposed regulatory amendments to the Cap-and-Invest Program (2018 Narrow Scope Amendments). The proposed narrow scope amendments included: (1) clarifying existing provisions related to changes of ownership and successor liability for emissions compliance obligations, and (2) a modification of the calculation of the Auction Reserve Price based on the fact that the linked California and Québec Cap-and-Invest Programs had also linked with Ontario's Cap-and-Trade Program.

Staff determined that the proposed 2018 Narrow Scope Amendments would not result in any new significant environmental impacts or a substantial increase in the severity of impacts beyond those disclosed in the 2010 FED; therefore, the 2010 FED adequately addressed the potential environmental impacts of implementation of the amendments, and no additional environmental analysis was required for those updates.

The Board approved the 2018 Narrow Scope Amendments in March 2018 in Resolution 18-4, finding that the proposed amendments are covered by prior environmental analyses. These documents can be found on the CARB website: https://www.arb.ca.gov/regact/2018/capandtradeghg18/capandtradeghg18.htm.

8. Regulatory Amendments to the Cap-and-Invest Program (2018)

In October 2018, CARB proposed additional regulatory amendments to the Cap-and-Invest Program (2018 Amendments). A supplemental 2018 EA (2018 EA) was prepared for these amendments and was included in Appendix B of the Staff Report: Initial Statement of Reasons entitled "Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms" (CARB 2018). The 2018 EA found that the 2018 Amendments would not substantially change the requirements or the methods of compliance for covered entities evaluated in the 2010 FED and 2016 EA (i.e., upgrade equipment, decarbonize, implement process changes, and surrender compliance instruments). Therefore, the 2018 EA concluded that the potential for environmental impacts fell within the scope and scale of those already analyzed during the 2010 and 2016 rulemaking. The 2018 EA is incorporated herein by reference.

The Board approved written responses to comments on the 2018 EA and adopted findings in Board Resolution 18-51 (December 13, 2018), which adopted the 2018 Amendments. The written responses to comments for the 2018 Amendments are included in the FSOR released in December 2018. Board Resolution 18-51 and the Final

Statement of Reasons for the 2018 Amendments can be found on the CARB website:https://ww2.arb.ca.gov/rulemaking/2018/california-cap-greenhouse-gas-emissions-and-market-based-compliance-mechanisms.

E. Environmental Review Process: Requirements Under the CARB Certified Regulatory Program

CARB is the lead agency for the Proposed Amendments and has prepared this Draft EIA pursuant to its regulatory program certified by the Secretary of the Natural Resources Agency (Title 14 CCR Section 15251(d); Title 17 CCR Sections 60000-60008). In accordance with Public Resources Code section 21080.5 of the California Environmental Quality Act (CEQA), public agencies with certified regulatory programs are exempt from certain CEQA requirements, including but not limited to preparing environmental impact reports, negative declarations, and initial studies (Title 14 CCR Section 15250). CARB has prepared this Draft EIA to assess the potential for significant adverse and beneficial environmental impacts associated with the Proposed Amendments, as required by CARB's certified regulatory program (Title 17 CCR Sections 60000 - 60008). The resource areas from the CEQA Guidelines Appendix G Environmental Checklist were used as a framework for assessing the potential for significant impacts.

If comments received during the noticed public comment period raise significant environmental issues, staff will summarize and respond to the comments in the Response to Comments (RTC) prepared for the Draft EIA (Title 17 CCR Section 60004.2(b)(3)). The written responses to environmental comments will be considered by the Board prior to final action on the Proposed Amendments (Title 17 CCR Section 60004.2(c)(2)).

F. Organization of the Draft EIA

The Draft EIA is organized into the following chapters to assist the reader in obtaining information about the Proposed Amendments and their specific environmental issues.

- **Chapter 1.0, Introduction and Background,** provides a project overview and background information, and other introductory material.
- **Chapter 2.0, Project Description,** summarizes the Proposed Amendments, the potential reasonably foreseeable compliance responses taken in response to the Proposed Amendments, and implementation assumptions.
- **Chapter 3.0, Environmental and Regulatory Setting,** contains the environmental and regulatory setting relevant to the environmental analysis of the Proposed Amendments.
- **Chapter 4.0, Impact Analysis and Mitigation,** identifies the potential environmental impacts associated with the Proposed Amendments and mitigation measures for each resource impact area.

- **Chapter 5.0, Cumulative and Growth-Inducing Impacts,** analyzes the potential for cumulative effects of implementing the Proposed Amendments against a backdrop of past, present, and reasonably foreseeable future projects.

- **Chapter 6.0, Mandatory Findings of Significance,** discusses the potential for adverse impacts on human beings, cumulatively considerable environmental impacts, and whether the Proposed Amendments would have the potential to degrade the quality of the environment.

- **Chapter 7.0, Alternatives Analysis,** discusses a reasonable range of potentially feasible alternatives that could reduce or eliminate adverse environmental impacts associated with the Proposed Amendments.

- **Chapter 8.0, References,** identifies sources of information used in this Draft EIA.

G. Public Review Process for the Environmental Impact Analysis

On September 19, 2023, CARB issued a Notice of Preparation (NOP) for the Proposed Amendments, announcing that it would prepare an EIA. At a public workshop held on October 5, 2023, CARB staff discussed proposed regulatory concepts for the Proposed Amendments. Staff also described plans to prepare a Draft EIA for the Proposed Amendments and invited public feedback on the scope of the environmental impact analysis.

In accordance with CARB's certified regulatory program and consistent with CARB's commitment to public review and input, this Draft EIA is subject to a public review process. The Draft EIA is posted for a public review period that begins on January 23, 2026, and ends on March 9, 2026. This period complies with requirements for a minimum of 45 days of public review. (Title 17 CCR, Section 60004.2(b)(2).) Once the 45-day public review period has closed, CARB will provide, if necessary, a 15-day comment period in response to any edits or modifications to the regulatory package.

At the conclusion of the review period, staff will compile public comments and responses on the Draft EIA made during the noticed 45-day comment period (or during any further comment period if CARB determines recirculation of the Draft EIA is necessary), any potential comments submitted for 15-day changes to the regulation, and prepare a final hearing package, which includes the Final EIA and response to environmental comments, for the Proposed Amendments for the Board's consideration at a public hearing. This hearing is currently planned for May 28, 2026. If the final Proposed Amendments are adopted by the Board at that time, a Notice of Decision will be posted on CARB's regulatory webpage and will be filed with the Secretary of the Natural Resources Agency.

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2.0 PROJECT DESCRIPTION

A. Introduction

For the purposes of this Draft EIA, CARB considers the Proposed Amendments and the reasonably foreseeable compliance actions taken in response to those amendments to be the "project" evaluated under CEQA. CEQA defines a "project" as a discretionary action that has the potential to result in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. (14 CCR Section 15378.) Here, the reasonably foreseeable compliance responses to implementation of the Proposed Amendments have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment.

The Proposed Amendments would amend the existing California Cap-and-Invest Program in accordance with AB 32, SB 32, AB 1279, AB 1207 and measures recommended in the 2022 Scoping Plan Update (CARB 2022a) to achieve 2030 and 2045 GHG emissions reduction targets. The Cap-and-Invest Program is a key aspect of California's suite of programs to reduce GHG emissions. AB 32 provided foundational direction on creating a comprehensive multiyear program to reduce California's GHG emissions to 1990 levels by 2020 and initiate the transformations required to achieve the State's long-range climate objectives. Under AB 32, California was required to reduce GHG emissions to 1990 levels by 2020, and to maintain and continue reductions thereafter. SB 32 further directed CARB to ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by 2030. AB 1279 established a target to reduce statewide anthropogenic GHG emissions to 85% below 1990 levels by 2045 and to achieve carbon neutrality no later than 2045. AB 1279 also requires CARB to ensure updates to the Scoping Plan identify and recommend measures to achieve the 2045 GHG goals. AB 1207 extends the Cap-and-Invest Program through 2045 and requires CARB to determine the maximum technologically feasible and cost-effective GHG reductions. It also ensures that Program-wide aggregate emissions from covered sources, at a minimum, decline with State climate targets, and makes targeted design changes to the Program.

California has employed the economy-wide Cap-and-Invest Program to reduce emissions and drive long-term investments in cleaner and more efficient technologies and energy. The Cap-and-Invest Program establishes a declining cap covering about 80% of the State's GHG emissions and allows trading of compliance instruments to ensure cost-effective emissions reductions. As of June 2024, the number of entities and facilities subject to the Cap-and-Invest Program included 332 businesses representing about 415 facilities. Suppliers of fuel and natural gas and electricity importers are also subject to the Cap-and-Invest Program. The existing Cap-and-Invest Program is already adopted and has been previously extensively reviewed under CEQA (see Chapter 1.0(D) above).

The Proposed Amendments would modify the Cap-and-Invest Program to reflect legislative direction under AB 1207, AB 1279 and measures recommended in the 2022 Scoping Plan Update to achieve mid-century climate goals. The Proposed Amendments

would establish more stringent Cap-and-Invest Program allowance budgets to reflect updates to the GHG Emission Inventory and to align budgets with State climate targets. In the context of more stringent allowance budgets, the Proposed Amendments would also remove allowances from annual budgets to reflect offset usage; update holding limit requirements; update provisions related to disclosing corporate relationships and the reasons for grouping market participants into corporate associations; update allowance trading provisions to ensure market liquidity; and modify cost-containment provisions to ensure cost-effective GHG emissions reductions.

The Proposed Amendments would also update covered product definitions and revise allowance allocation benchmarks for certain industrial sectors; update future allowance allocation to electrical distribution utilities (EDUs) and natural gas suppliers (NGS); clarify the use of allocated allowance value for EDUs and natural gas utilities; update provisions related to electricity markets and imported electricity; clarify exemptions from a compliance obligation for certain biogenic[2] emissions; and provide additional leakage protection for industrial sectors that supports decarbonization of production methods.

Moreover, the Proposed Amendments would also rename the Program and Regulation to Cap-and-Invest; move a section of the Cap-and-Invest Program regarding Carbon Capture, and Sequestration (CCS) to a different location within the Cap-and-Invest Program and clarify that sequestration could in the future apply to carbon capture and geologic and non-geologic sequestration. The inclusion of CCS projects was part of the original regulation. The Proposed Amendments would also clarify and improve administrative and other implementation provisions in the Cap-and-Invest Program. The Proposed Amendments also amend the definition of the Price Ceiling as required by AB 1207. The elements of the Proposed Amendments to the Cap-and-Invest Program are discussed in the following sections.

For a more detailed description, please refer to the Proposed Regulatory Amendments to the Cap-and-Invest Program, available at: https://ww2.arb.ca.gov/rulemaking/2026/cap-and-invest2026

Project Objectives

The primary objectives of the Proposed Amendments are described below. These objectives are derived from (1) AB 32, which limits GHG emissions in California, with reductions in emissions maintained and continued beyond 2020; (2) SB 32, which establishes a GHG emissions reduction target of at least 40% below 1990 levels by 2030; (3) AB 1279, which establishes a target to reduce anthropogenic GHG emissions to 85% below 1990 levels by 2045 and a goal to achieve carbon neutrality no later than 2045; (4) AB 1207, which extends the Program to 2045 and directs CARB to ensure that Program-wide aggregate emissions from covered sources, at a minimum, decline with State climate targets; and (5) the 2022 Scoping Plan Update, which recommends measures to achieve the mid-century climate targets.

[2] "Biogenic" generally means produced by or from the activity of living organisms.

The major administrative and Program implementation objectives of the Proposed Amendments include the following:

1. Continue the objectives of the Cap-and-Invest Program.

The "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms" (2010 FED) contains the primary objectives of the Cap-and-Invest Program when it was initially adopted in 2011. These objectives are:

a. achieve technologically feasible and cost-effective aggregate reductions;
b. distribute allowances equitably;
c. avoid disproportionate impacts on low-income communities;
d. credit early action;
e. complement existing air standards;
f. consider cost-effectiveness ;
g. consider a broad range of public benefits;
h. minimize administrative burden;
i. minimize leakage;
j. weigh relative emissions;
k. achieve real emission reductions;
l. achieve reductions over current regulation;
m. complement direct measures;
n. consider emissions impacts;
o. prevent increases in other emissions;
p. maximize co-benefits;
q. avoid duplication;
r. establish declining cap;
s. reduce fossil fuel use;
t. link with partners;
u. design an enforceable, amendable program; and
v. ensure emissions reductions.

As the Cap-and-Invest Program has been implemented and changed over time, the objectives have been adjusted to reflect the changes. The Proposed Amendments seek to uphold these existing objectives in the continuation of the Cap-and-Invest Program, except with respect to 2010 FED Objective 4 and 18. Objective 4 is to credit early action. Early action offset credits are no longer being issued. The final early action offset credits were issued in 2016.

2010 FED Objective 18 is to establish a declining cap covering 85% of the State's GHG emissions in furtherance of California's mandate to reduce GHG emissions to 1990 levels by 2020. The 2018 amendments to the Program were made following AB 398 to support achievement of the SB 32 reduction target. The Proposed Amendments contain caps that

adjust 2027-2030 annual allowance budgets and post-2030 annual allowance budgets pursuant to AB 32, SB 32, AB 398, AB 1279, and AB 1207.

1. Maintain and continue reductions in GHG emissions aligned with the requirements of AB 32, and support achievement of the 2030 GHG reduction target established by SB 32 (AB 1207)

2. Support achievement of the state's long-term climate objectives, including reducing anthropogenic GHG to 85% below 1990 levels and achieving GHG neutrality by 2045 (AB 1279; Executive Order B-55-18) consistent with the 2022 Scoping Plan Update (AB 398 and AB 1207).

3. Support flexible compliance: Limit program costs, and ensure cost-effective GHG emissions reductions (AB 32, AB 398, and AB 1207).

4. Ensure liquidity and integrity for the Cap-and-Invest market (AB 32, AB 398, and AB 1207).

5. Ensure that allowance allocation to Electrical Distribution Utilities protects ratepayers and supports affordability (AB 32, AB 398, AB 1207).

6. Ensure consistent compliance obligations and minimize emissions leakage from imported electricity (AB 32, AB 398, and AB 1207).

7. Minimize emission leakage, consider affordability and support decarbonization of the industrial and fuels sectors (AB 32, AB 398, AB 1207).

8. Ensure the continued supply of approved offset credits as a cost-containment mechanism (AB 32, AB 398, and AB 1207).

9. Clarify and streamline implementation of the Cap-and-Invest Program (AB 32, AB 398, and AB 1207).

B. Description of Proposed Amendments and Reasonably Foreseeable Compliance Responses

The following section summarizes the Proposed Amendments, as well as the reasonably foreseeable compliance responses resulting from implementation of the Proposed Amendments. The anticipated compliance responses to various actions discussed in this section focus on those activities with the potential to result in either a direct or indirect physical change in the environment. These include construction activities, infrastructure and equipment installations, and significant operational changes to facilities. While purchasing compliance instruments is a reasonably foreseeable compliance response, it would not result in direct physical effects on the environment; therefore, the purchase of compliance instruments is not a focus of the environmental assessment.

Additionally, CCS, though a developing technology in use at sites throughout the world, is not a reasonably foreseeable compliance response to these Proposed Amendments because the Cap-and-Invest Program does not currently contain a quantification methodology that allows for the calculation of a reduction in compliance obligations for the use of CCS. Therefore, CCS is not analyzed further in this Draft EIA. CARB is establishing a program for CCS in a separate public process pursuant to the requirements of SB 905 (Caballero, Chapter 359, Statutes of 2022). Depending on the outcome of that process, CCS methodologies may be proposed for incorporation as appropriate into the Cap-and-Invest Program, but this would require separate regulatory amendments that are not currently proposed or under consideration.

1. Adjust 2027-2030 and Post-2030 Annual Allowance Budgets

a) Background Regarding Annual Allowance Budgets

The 2013-2020 annual allowance budgets were established in the initial Cap-and-Invest Program adopted in 2011. Early year allowance budgets were established using best available data to estimate the emissions for the year that a covered source category entered the Cap-and-Invest Program. The annual budgets were then set to decline linearly to the 2020 allowance budget, 334.2 $MMTCO_2e$, which was calculated as the 2020 statewide target multiplied by 77.5%, the percentage of emissions from the statewide GHG Emissions Inventory estimated to be covered by the Cap-and-Invest Program in 2020.

In the 2016 Amendments, annual 2021-2030 allowance budgets were set to decline linearly from the established 2020 allowance budget to the 2030 allowance budget, which was set to support meeting the 2030 target established by SB 32. The 2016 Amendments also designated allowances from 2021-2030 budgets into the Allowance Price Containment Reserve (APCR or Reserve). Designation of allowances into the APCR did not alter the total annual 2021-2030 allowance budgets.

b) Summary of Proposed Amendments

The Proposed Amendments would remove about 118 million allowances from the 2027-2030 annual budgets and 146 million allowances from the new post-2030 allowance budgets, for total removals equaling 264 million allowances. The Proposed Amendments establish post-2030 declining allowance budgets consistent with the AB 1279 target to reduce statewide anthropogenic GHG emissions by 85% by 2045, the requirements of AB 1207 and the 2022 Scoping Plan Update.

The process to establish the allowance budgets for the Proposed Amendments builds upon the allowance budget evaluations for the initial Cap-and-Invest Program and for the 2016 Amendments. Setting annual and cumulative allowance budgets at appropriate levels to meet the State's climate targets using the best available emissions projections is critical to the environmental effectiveness of the Cap-and-Invest Program. If allowance budgets are not set at a sufficient stringency to achieve adequate GHG emission

reduction activities, the environmental goals of the Cap-and-Invest Program may not be met even if all covered sources comply with Cap-and-Invest Program requirements.

In 2022, AB 1279 established targets for reducing statewide anthropogenic GHG emissions to at least 85% below 1990 levels by 2045 and to achieve carbon neutrality no later than 2045. These mid-century climate targets align with the scientifically established GHG emissions levels needed to limit global warming to 1.5 degrees Celsius. AB 1207 extends the Cap-and-Invest Program through 2045 and specifies how the Program should contribute to achieving the State's climate targets. The 2022 Scoping Plan Update lays out a technologically feasible and cost-effective path to carbon neutrality and recommends measures to achieve mid-century climate targets. Modeling within the 2022 Scoping Plan Update indicates that the State needs to increase ambition for emissions reductions to align with the emissions trajectory needed to meet the State's more ambitious 2045 climate targets established by AB 1279.

CARB's continuation and expansion of the suite of climate programs created in response to AB 32, including the Cap-and Trade Program, is consistent with statutory direction and, as outlined in the 2022 Scoping Plan Update, is critical to achieving the targets set forth in both SB 32 and AB 1279 and the requirements of AB 1207. Since the adoption of the first Scoping Plan in 2008, carbon pricing in the form of a Cap-and-Invest Program has been a key part of California's portfolio approach to achieving the state's GHG emissions reduction targets. The Cap-and-Invest Program complements sector-specific programs by establishing an economy-wide, declining cap on statewide GHG emissions from industrial facilities, in-state and imported electricity generation, and fuel use in buildings and for transportation.

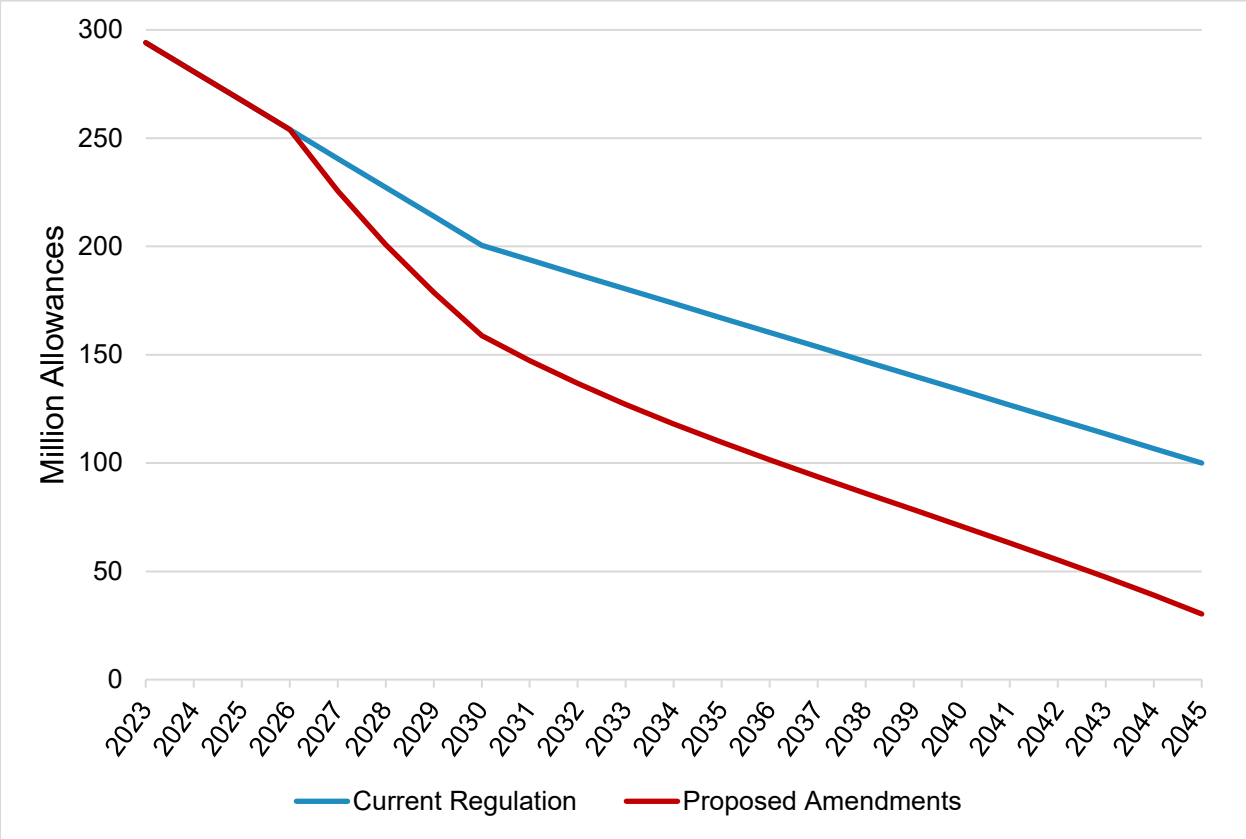
Setting informed Cap-and-Invest Program allowance budgets is critical to providing the near- and long-term price signal necessary to support the economy-wide decarbonization needed through mid-century. The Proposed Amendments to the Cap-and-Invest Program annual allowance budgets are informed by the modeling in the 2022 Scoping Plan Update and by recent adjustments to more fully incorporate third-party verified data into the GHG Emission Inventory. These considerations are reflected in the Proposed Amendments, which provides more stringent annual allowance budgets for 2027-2030 and post-2030 to accelerate GHG emissions reductions in support of an emissions trajectory aligned with State's long-term climate objectives.

The Proposed Amendments reduce the 2027-2030 allowance budgets by a cumulative total of about 118 million allowances to account for recent updates to the GHG Emission Inventory, and removes 146 million allowances from post-2030 budgets to support meeting a more ambitious 2030 GHG emissions reductions target that is aligned with an emissions trajectory that 2022 Scoping Plan Update modeling shows is needed to meet the State's 2045 GHG reduction and carbon neutrality target established by AB 1279. The Proposed Amendments establish the 2045 allowance budget at approximately 30 $MMTCO_2e$ consistent with the target to reduce anthropogenic emissions by 85% from 1990 levels by 2045.[3] Post-2030 annual budgets decline steadily from a 2030 value of

[3] See Initial Statement of Reasons at section (II)(B)(1).

about 159 $MMTCO_2e$ to the 2045 allowance budget of approximately 30 $MMTCO_2e$ (**Figure 1**). Section II.B. of the ISOR contains detailed analysis of the annual allowance budgets included in the Proposed Amendments.

Figure 1: Annual Allowance Budgets Under the Current Regulation and the Proposed Amendments



These revisions to the annual allowance budgets would affect the same types of covered entities currently included in the Cap-and-Invest Program. The range of covered sectors includes, but is not limited to: cement production, cogeneration (combined heat and power), glass production, hydrogen production, iron and steel manufacturing, oil & natural gas production, petroleum refining, pulp and paper manufacturing, electricity generation, imported electricity, stationary source combustion natural gas suppliers, transportation fuels suppliers, and suppliers of carbon dioxide.[4] This analysis focuses on the sectors that may be affected by the allowance budget revisions included in the Proposed Amendments.

[4] In this document we refer to electricity generation to cover electricity generators serving the grid and electricity generators that are serving the on-site generation needs of a facility, sometimes referred to as self-generation of electricity. Lime and nitric acid manufacturing are not included as there is no longer production of lime or nitric acid in California.

c) Reasonably Foreseeable Compliance Responses

The revised 2027-2030 annual allowance budgets and post-2030 allowance budgets are consistent with the budget-setting process used in the 2010 Cap-and-Invest Program. Because the applicability provisions remain the same, the same types of covered entities evaluated under the 2010 Cap-and-Invest Program would continue to be regulated under the Proposed Amendments, and the fundamental types of compliance responses they undertake are expected to largely remain unchanged, although the intensity of those compliance responses is expected to increase. Overall, increased stringency associated with removing allowances from the Cap-and-Invest Program budgets is expected to increase the pace of GHG reductions due to increased investment in energy efficiency, equipment and process upgrades, and clean technology for covered entities as compliance responses.

The 2010 FED and 2016 EA detailed the reasonably foreseeable compliance responses for each covered sector resulting from the Cap-and-Invest Program's allowance budgets. As discussed above, the Proposed Amendments build upon the 2016 regulatory amendments to the Cap-and-Invest Program. Covered entities, evaluated under the 2016 regulatory amendments to the Cap-and-Invest Program, would continue to be regulated under the Proposed Amendments.

The following provides a discussion of the reasonably foreseeable compliance actions that were evaluated in the 2010 FED and 2016 EA, organized by sector. The summary below includes covered actions reviewed in the 2010 FED and 2016 EA, as well as the reasonably foreseeable compliance responses associated with new actions taken under the Proposed Amendments.

The subsections below describe the reasonably foreseeable compliance responses in major specific industry sectors. Overall, the key types of reasonably foreseeable compliance responses expected across sectors may include:

- Process changes, changes in fuels and efficiency improvements. These compliance responses may involve construction of new facilities, or modification of existing facilities. Although it is reasonably foreseeable that activities associated with new or modified facilities could occur, there is uncertainty as to the exact location of any new facilities or modification of existing facilities. However, these changes would generally be similar in character to existing industrial facilities. The Proposed Amendments may also result in the construction of new wind turbines. Some of the reasonably foreseeable compliance responses could be accomplished with minimal ground-disturbing activity. For instance, increased refining of low-carbon fuels could be performed within existing refining facilities that undergo internal retrofitting.

- Increased production and use of low-carbon fuels, such as low-carbon hydrogen and biomethane, at food processors, cement producers, glass producers and other industrial manufacturing facilities, and by electricity generators. Low-carbon hydrogen includes electrolytic hydrogen produced with zero-carbon electricity and

hydrogen produced from gasification or pyrolysis of woody agricultural wastes and material removed for forest stand protection. Biomethane is produced from a variety of waste resources within California including landfills, wastewater treatment plants, and manure. Production of biomethane within California may increase, although other state laws and policies are also driving biomethane production increases, such as state and federal incentives, use as a feedstock for hydrogen, SB 1440 (2018), the Low Carbon Fuel Standard (LFCS) and jurisdictions diverting organic material from landfills to achieve SB 1383 mandates. Biomethane could also be produced by gasification or pyrolysis of woody waste materials. For high-temperature manufacturing processes, use of low-carbon hydrogen and biomethane may be more feasible compliance responses than equipment electrification for some entities. In the 2022 Scoping Plan Update Scenario, approximately 10% of manufacturing thermal energy demand, excluding energy demand met by electricity, is expected to be met by biogas and hydrogen by 2030, increasing to nearly 20% by 2040. Note that multiple state and/or federal programs contribute to this particular compliance response as described above.

- Electrification of equipment and installation of renewable electricity and energy storage systems at oil and gas production facilities, refineries, alternative fuel production facilities, food processors, pulp and paper facilities, and other industrial manufacturing facilities.

- Importers of electricity may reduce their compliance obligation by increasing renewable electricity imports.

Entities in covered sectors that have limited options for reducing GHG emissions may opt to continue purchasing allowances or limited offset credits for Program compliance as a less costly alternative. While the purchase of compliance instruments is a reasonably foreseeable compliance response, it would not result in direct physical effects on the environment.

As noted above, the Proposed Amendments to the annual allowance budgets would affect the same types of covered entities currently included in the Cap-and-Invest Program. The range of covered sectors includes: cement production, cogeneration (combined heat and power), glass production, hydrogen production, iron and steel production, oil & gas production, petroleum refining, pulp and paper manufacturing, electricity generation, stationary combustion, imported electricity, suppliers of natural gas, suppliers of transportation fuels (petroleum products), suppliers of liquified natural gas, and suppliers of carbon dioxide. The reasonably foreseeable compliance responses for sectors are described in more detail in the subsections below.

i. Cement Production

Entities undertaking cement production are currently regulated as covered entities[5] under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from these proposed adjustments for cement production include the installation of energy efficiency measures to reduce fuel consumption, switching to less carbon-intensive fuels, and/or altering the process to make the production process more efficient; and increasing the proportion of supplementary cementitious materials (SCMs) in cement and concrete.

The production of cement is an energy-intensive process. Approximately six million British Thermal Units (BTUs) of energy are consumed to produce one ton of cement. Possible compliance responses to reduce GHG emissions include installation of energy efficiency measures to reduce fuel consumption, switching to a less carbon-intensive fuel, and/or altering a process to make the production process more efficient.

For the purposes of this EIA, installation of energy efficiency measures is suggested to be the least expensive reasonably foreseeable compliance response. Installation of modern combustion facilities and kilns with improved waste heat recovery systems would reduce the amount of fuel required and, therefore reduce GHG emissions from fuel combustion.

Switching to fuels with less carbon content provides an opportunity to reduce GHG emissions from fuel combustion. Coal is the primary fuel used for cement production in California, followed by incidental use of petcoke, biomass and discarded tires. Biomass is a broad category of combustible materials including forest products (wood), municipal sewage, livestock manure, various types of fiber, plant, and similar materials. Depending on the source and type of biomass combusted, emissions could contain a variety of toxic constituents and metals. Tires contain many compounds including natural and synthetic rubber, carbon black, and numerous polymers and compounds to create various tire characteristics, metals, and steel used in belted radials. The incomplete combustion of tires could produce emissions containing dioxins, furans, and metals and is a source of criteria and toxic air pollutants. California's cement plants are currently permitted to burn limited amounts of waste tires for fuel, and four of them currently combust tires. Tires are a small fraction, about 4.5%, of total fuel used and contain limited amounts of biogenic content (approximately 20%). Use of tires as an alternative fuel requires carefully controlled combustion conditions and control technology to minimize potentially significant adverse environmental impacts. These requirements, and the fact that using waste tires as fuel results in limited GHG reduction due to their limited biogenic content, potentially could preclude wider combustion of discarded tires by the cement industry as a compliance response. Consequently, a significant increase in the combustion of tires would not likely occur, but continued use at current levels could be a reasonably foreseeable compliance response. The use of biomass also requires controlled

[5] Covered entities refers to entities that emit GHGs emissions above the inclusion threshold under the Cap-and-Trade Regulation. (See 17 CCR § 95812.)

combustion conditions and control technology to minimize potentially adverse air quality criteria pollutant impacts and depending on the type of biomass, has fewer potential significant adverse environmental impacts. Increased use of biomass is considered a reasonably foreseeable compliance response and will be limited by the supply of biomass materials.

CARB also considered the reduction of emissions through changes to manufacturing processes as a reasonably foreseeable compliance response. However, the cement manufacturing process has limited opportunities for process changes that could effectively reduce GHG emissions. Significant emissions reduction could be realized by incorporation of SCMs in cement and concrete production. Clinker is the most emissions-intensive material in both cement and concrete, and the vast majority of cement produced in the state is ultimately used for concrete. SCMs including natural pozzolans are materials that have cementitious properties when combined with calcium hydroxide, and could be substituted for cement as the binding agent in concrete. Limited amounts of SCMs are currently blended in cement and concrete. The proportion of SCMs that could be used in cement and concrete production depends on the type and application of the material. Increasing the proportion of SCMs is a reasonably foreseeable action that could produce a greater amount of cement and concrete to meet future demands without increasing cement manufacture and associated emissions.

Common SCMs include fly ash, a by-product of coal combustion and natural pozzolans which are primarily geologic materials of volcanic origin, like pumice. Some cement facilities may be able to use fly ash from their own coal combustion or obtain it from out-of-state coal-burning facilities. Natural pozzolans are mined at several locations in California, including in the Lassen region of northern California, but also from isolated formations in southern California and Nevada. The cement facilities in California, currently use SCMs to some extent. Increased use of these materials could increase or directly cause mining operations to expand spatially or increase output beyond their permitted capacities. Ships, rail, and trucking are the most common forms of transport. The increased use of SCMs by cement facilities in California could increase local truck trips but would not be expected to meaningfully affect shipping or rail operations.

ii. Cogeneration (Combined Heat and Power)

Entities undertaking cogeneration are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for cogeneration include increased energy efficiency measures for combustion including improved heat containment in combustion chambers by closing leaks, increasing combustion efficiency and reducing fuel use, switching to lower-carbon fuels, and the installation of microgrids.

Energy efficiency measures for combustion include improving heat containment in the combustion chamber by closing leaks, increasing combustion efficiency and reducing fuel use, and switching to improved fuels. Additional discussion of fuel combustion and GHG emissions is presented under the “Stationary Combustion” covered entity in this section.

Microgrids are systems that effectively manage electrical loads with electrical resources, such as cogeneration units, photovoltaic (PV) electricity generation, and battery storage. These systems are effective technology to potentially increase the utilization of cogeneration systems by better management of electricity sources and demands. Additionally, microgrids could incorporate additional non-combustion resources such as PV arrays, battery systems, and thermal energy storage, which reduces the overall emissions of the facility. Microgrids are considered a reasonably foreseeable compliance response that could occur within the footprint of existing facilities.

iii. Glass Production

Entities undertaking glass production are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for glass production include maximizing cullet use and optimizing the melting operation of glass, the installation of various improvements of existing furnaces and kilns through new control systems, reducing air leaks, adjustable speed fans, use of waste heat, or full replacement of aging furnaces with modern systems, including hybrid electric furnaces.

Combustion emissions represent 90% of the GHG emissions attributed to glass manufacturing. The most likely methods to reduce GHG emissions from glass manufacturing are energy efficiency measures that reduce fuel use. Maximizing cullet use and optimizing the melting operation are the most promising methods to reduce fuel consumption. Manufacturing new glass from existing glass (cullet) requires significantly less energy than production from raw materials and produces fewer direct process emissions. Heating the furnace to melt materials is the primary use of energy in glass manufacturing. Preheating cullet with waste heat from the primary furnace reduces the fuel required to melt the material in the primary furnace. The efficiency of existing furnaces and kilns could be increased through the installation of various improvements including such measures as new control systems, reducing air leaks, adjustable speed fans, the use of waste heat, or full replacement of aging furnaces with modern systems. New technologies such as hybrid electric glass furnaces are currently being deployed in California offering high emissions reductions and increased ability to use recycled content. Hybrid electric furnaces allow facilities flexibility to switch from oxy-combustion to electric melting as a method of reducing natural gas usage and harmful emissions.

iv. Hydrogen Production

Entities undertaking hydrogen production are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for hydrogen production include efficiency improvements, the use of cogeneration technologies and development of new low and zero-carbon hydrogen production.

Plant efficiencies for modern hydrogen production facilities are highly optimized and typically range between 82% and 85%. Small reductions in GHG emissions can be achieved by maximizing the hydrogen to carbon monoxide ratio of the plant feedstock. Efficiency could also be enhanced by recovering waste heat to generate electricity. One merchant hydrogen plant in California incorporates an electricity cogeneration unit that utilizes a portion of the hydrogen plant thermal energy to generate electricity, thus significantly improving the overall energy efficiency and reducing GHG emissions. The development of low and zero carbon hydrogen is also a potential reasonably foreseeable compliance response as some industry and electricity generators may choose to use hydrogen as a low carbon fuel. New demand for zero and low carbon hydrogen could lead to the development of new electrolytic hydrogen facilities produced with zero-carbon electricity and hydrogen produced from gasification or pyrolysis of woody agricultural wastes and material removed for forest stand protection.

v. Iron and Steel Manufacturing

Entities undertaking iron and steel manufacturing are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for iron and steel manufacturing include the use of improved foaming control devices or upgrading of exhaust capture and treatment devices such as scrubbers and well as maximizing the recovery of waste energy and process gases to provide electricity and supplemental heat.

Individual facilities may identify different measures as most effective or appropriate for differing situations and operational requirements. Process emissions are generally regarded as an unavoidable consequence of chemical and heating processes. Significantly reducing the production of these gases would require modification of materials used and/or manufacturing processes and could be more difficult to implement than other control strategies. Using improved foaming control devices in the electric arc furnace process, or upgrading of exhaust capture and treatment devices, such as scrubbers, could be effective strategies for older facilities. Although combustion emissions are not as great as process emissions, energy efficiency improvements to improve the combustion process and reduce the amount of fuel required could contribute to the overall reduction of GHG emissions intensity. Further energy efficiency improvements could include enhancing continuous production processes to reduce heat loss and increasing recovery of waste energy and process gases to provide electricity and supplemental heat, particularly at electric arc furnace facilities.

vi. Oil and Gas Production

Entities undertaking oil and gas production are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for oil and gas production include the replacement of high bleed pneumatic control devices with low-

or no-bleed devices, and green well completions where gas previously vented is captured and utilized; energy efficiency improvements through improved inspection, maintenance, and upgrading aged equipment; the upgrading of technologies or equipment through use of low-emission regulator valves; and potential displacement of oil and gas with biogenic fuels.

There are a variety of potential means to reduce the GHG emissions that result from the extraction of oil and gas. For instance, oil producers in California have installed cogeneration facilities in production fields where steam flood enhanced oil production is practiced. The excess thermal energy from steam generation is used to produce electricity, thus significantly increasing the efficiency of production.

In the gas production and processing sectors, the U.S. EPA has identified GHG reduction strategies as part of its Natural Gas STAR and Methane to Markets programs. Projects such as the replacement of high bleed pneumatic control devices with low or no-bleed devices, and green well completions where gas that was previously vented is captured and utilized, have been demonstrated to significantly reduce GHG emissions of CH_4 and are reasonably foreseeable compliance responses.

CO_2 emissions from steam generators and process boilers could be reduced through the energy efficiency compliance response that would include improved inspection and maintenance and upgrading aged equipment.

CH_4 emissions from oil and natural gas systems are primarily the result of normal operations and system disruptions. These emissions could be cost-effectively reduced by upgrading technologies or equipment and by improving operations, such as low-emission regulator valves that reduce or eliminate equipment venting or fugitive emissions. Improving management practice and operational procedures to reduce venting such as adding a leak detection and measurement program and/or adding emissions reduction technology could further reduce emissions. There could also be a reduction in demand and production if oil and gas are displaced by electrification and use of alternate low-carbon fuels.

vii. Petroleum Refining

Entities undertaking petroleum refining are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for petroleum refining include increased heat recovery and cogeneration of electricity, reduction of combustion emissions through energy efficiency improvements, and the modernization or retrofitting of combustion facilities with more efficient equipment, improving insulation, maintaining and fixing thermal and physical leaks, improving burner efficiency and switching to biogenic fuels. Each refinery is unique and the selected compliance response(s) would vary depending on individual circumstances.

Because petroleum refining requires large inputs of thermal energy, heat recovery and cogeneration of electricity could improve refinery energy efficiency and reduce GHG emissions. Reduction of combustion emissions through energy efficiency improvements is also a reasonably foreseeable compliance response that could reduce GHG emissions from refineries.

Possible measures to reduce CO_2 emissions from combustion includes modernization or retrofitting combustion facilities with more efficient equipment, improving insulation, maintaining and fixing thermal and physical leaks, or improving burner efficiency. Possible strategies to reduce emissions for compressors, blowers, and other movers would be to retrofit boilers and process heaters for improved efficiency. Possible actions to reduce CO_2 emissions from flaring include fixing steam traps, increasing the efficiency of the flare gas recovery, and installing fluid catalyst cracker turbines.

Switching to biogenic fuels is an additional potentially foreseeable compliance response. With the use of biofuels, which are derived from renewable biological sources, refineries can significantly reduce carbon emissions. Biofuels could be refined and blended with traditional fuels or refined independently, through retrofits at existing facilities.

viii. Pulp and Paper Manufacturing

Entities undertaking pulp and paper manufacturing are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for pulp and paper manufacturing include the implementation of energy efficiency improvements at pulp and paper manufacturing facilities through modernization or retrofitting combustion facilities with more efficient equipment, improving insulation, maintaining and fixing thermal and physical leaks, and improving burner efficiency.

Reduction of combustion emissions through energy efficiency improvements is a reasonably foreseeable compliance response that could reduce GHG emissions from pulp and paper plants. Possible measures to reduce CO_2 emissions from combustion includes modernization or retrofitting combustion facilities with more efficient equipment, improving insulation, maintaining and fixing thermal and physical leaks, and improving burner efficiency.

Pulp and paper manufacturing typically does not require high heat loads for operations allowing steam or process heat to be replaced by zero-combustion technologies. Such technologies include solar thermal heat generation, thermal energy storage systems, electric boilers, or heat pumps. Installation of these zero combustion technologies also reduces harmful local air pollution including oxides of nitrogen, particulate matter, and carbon monoxide.

ix. Electricity Generation

Entities undertaking electricity generation are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for electricity generation include increasing the efficiency of electricity generation to require less fuel input per unit of energy output through the use of primary gas turbines that use waste heat from main gas turbines to produce steam, which drives steam turbines to generate additional electricity, the use of low-carbon fuels such as blending of low-carbon hydrogen with natural gas and increases in renewable energy generation.

GHG emissions from electricity-generating facilities may be reduced by increasing the efficiency of electricity generation to require less fuel input per unit of energy output. Highly efficient combined cycle power generation technology includes a primary gas turbine(s), and uses “waste heat” from the main gas turbine(s) to produce steam, which is then used to drive a steam turbine to generate additional electricity. Some natural gas power plants may be retrofitted or repowered to improve efficiency, reducing GHG emissions per MWH.

Energy conservation in the form of reduced demand for electricity stemming from the carbon price signal from the Cap-and-Invest Program could result in less electricity being generated, producing a commensurate reduction in emissions at power plants.

Finally, renewable power generation (and potentially other low-carbon sources) could supplant some fossil fuel generation and emissions. SB 100 (De León, Chapter 312, Statutes of 2018) and the SB 1020 (Laird, Chapter 361, Statutes of 2022) set renewable electricity and zero-carbon energy targets of 60% renewables by 2030, and state policy that renewable energy and zero-carbon supply be 90% of all retail sales of electricity by December 31, 2035, 95% in 2040 and 100% in 2045. It is expected that utilities will generally build and access sufficient renewable generation to achieve these targets and policies. Reasonably foreseeable compliance responses under the Proposed Amendments could lead to an increased demand for electricity due to electrification in other industrial sectors and cause some renewables and production of low-carbon fuels to be built, developed or contracted for earlier than under the state’s Renewable Portfolio Standard requirements and zero-carbon electricity policies.

x. Stationary Combustion

Entities undertaking stationary combustion are already regulated as covered entities under the Cap-and-Invest Program and therefore, the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for other stationary combustion sources covered by the Cap-and-Invest Program include the use of cogeneration by General Stationary Combustion (GSC) facilities wherein waste heat energy is used to develop usable electrical energy, zero combustion technologies, use of biofuels, and energy efficiency improvements.

The majority of GHG emissions from these facilities are from direct fuel combustion. Therefore, continued efforts by facility operators to optimize and reduce their fuel consumption have a direct impact on reducing GHG emissions intensity. The substantial use of cogeneration operations by GSC facilities is an example of fuel use optimization in which waste heat energy is used to develop usable electrical energy. This not only reduces energy costs for the facility, but also offsets some of the need for electricity purchased from large fossil fuel power plants.

Many GSC facilities do not require high heat loads for operations, allowing steam or process heat to be replaced by zero combustion technologies. Such technologies include solar thermal heat generation, thermal energy storage systems, electric boilers, and heat pumps. Installation of these zero combustion technologies also reduces harmful local air pollution including oxides of nitrogen, particulate matter, and carbon monoxide.

For GSC facilities that require higher heat loads, another decarbonization strategy is to switch fuels from natural gas to low carbon fuels, such as biomethane or hydrogen produced from renewable electricity or feedstocks. Biomethane could directly replace fossil gas in its operations with no equipment upgrades. Facilities could also utilize natural gas blended with low levels of hydrogen, typically less than 10-20% by volume, with no changes in equipment. Higher blends of hydrogen may require changes to burners and criteria pollutant reduction systems.

Energy efficiency improvements are likely the first means of reducing emissions from stationary combustion facilities. Energy efficiency improvements are used to generally describe replacing aging equipment, retrofitting facilities, changing operational processes and/or procedures, changing fuels, and other actions that reduce fuel demand through more efficient combustion, increased heat production per fuel consumed, and reducing heat loss. The configuration and specific improvements installed at individual facilities would inevitably vary.

xi. Imported Electricity

Electricity importers are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for electricity imports include the purchase of allowances or offsets to meet the compliance obligations of the Cap-and-Trade Program. Importers of electricity may also reduce their allowance obligation by importing more electricity from renewable electricity sources.

xii. Natural Gas Suppliers

Natural gas suppliers are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses from the Proposed Amendments for natural gas suppliers include displacing all or portions of supplied natural gas with supplied biomethane and supplied low-carbon

hydrogen and the implementation of consumer-focused strategies to encourage faster turnover of existing appliances.

Strategies that could be practically implemented to reduce emission from the natural gas supplier sector include encouraging a faster turnover of existing appliances and increasing the supply of biomethane and low-carbon hydrogen. Surrendering allowances and/or offsets is expected to be a likely compliance response to the Cap-and-Invest Program in this covered entity category.

xiii. Transportation Fuels Suppliers (Petroleum Products)

Transportation fuel suppliers are already regulated as covered entities under the Cap-and-Invest Program, and therefore the proposed adjustments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. The Cap-and-Invest Program regulates transportation fuels suppliers and other regulations also apply to this sector and also drive changes to the sector, including state fuels regulations (e.g., the Low Carbon Fuel Standard[6] and the state's Reformulated Gasoline Regulations[7] and Diesel Fuel Program[8]). Zero-emission-vehicle programs and regulations can affect transportation fuel demand.

The act of supplying transportation fuels, in itself, is not a significant GHG emissions source; rather, the majority of GHG emissions from this covered sector are produced by combustion at the consumer level. Reduction in petroleum transportation fuels is further supported by increased vehicle fuel efficiency at the federal level, improved land use planning, and increased use of mass transit and non-motorized transportation. In terms of likely compliance responses, as an upstream provider, transportation fuel suppliers would likely surrender allowances and/or offsets and transition toward lower-carbon fuels.

xiv. Liquefied Natural Gas Suppliers and Liquefied Petroleum Gas Suppliers

Liquified natural gas suppliers (LNG) and liquified petroleum gas suppliers (LPG) are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect these sectors. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for LNG and LPG suppliers include the surrender of allowances and/or offset credits under the Cap-and-Invest Program and switch to lower-carbon fuels, such as biomethane. GHG emissions associated with LNG and LPG are produced by combustion at the consumer level. Reduced GHG emissions in these sectors are further supported by the electrification of current uses of LNG and LPG.

[6] 17 CCR § 95480 et seq.
[7] 13 CCR § 2250 et seq.
[8] 13 CCR §§ 2281-2285; 2299-2299.5; 17 CCR § 93114 et seq.

xv. Suppliers of Carbon Dioxide

Carbon dioxide suppliers are already regulated as covered entities under the Cap-and-Invest Program, and therefore the Proposed Amendments to the 2027-2030 and post-2030 annual allowance budgets would affect this sector. Reasonably foreseeable compliance responses resulting from the Proposed Amendments for suppliers of CO_2 include the surrender of allowances and/or offset credits under the Cap-and-Invest Program.

2. Allowance Removals for Offset Use

Pursuant to requirements in AB 1207, the Proposed Amendments include a provision to retire allowances equal to the number of compliance offset credits used. Compliance offsets are an optional compliance mechanism that is an important cost-containment element within the broader Cap-and-Invest Program. CARB issues ARB Offset Credits to qualifying projects that reduce or sequester GHG emissions pursuant to six Board-approved Compliance Offset Protocols. Compliance offsets are tradable credits that represent verified GHG emissions reductions or removal enhancements from sources not subject to a compliance obligation in the Cap-and-Invest Program. Covered entities may meet up to 6 percent of their compliance obligation with offset credits from 2026 onward. Previously, allowances were proactively transferred to the Allowance Price Containment Reserve to account for offsets “under the cap” assuming that offset use was maximized. The Proposed Amendments would create a new reserve account and populate the account based on historic offset usage, and would retire allowances from the account following each compliance period based on actual compliance usage by covered entities.

a) Reasonably Foreseeable Compliance Responses

The Proposed Amendments to retire allowances for offset use are aligned with historic proactive removals of allowances to account for offset use in the Cap-and-Invest Program.

The same types of covered entities evaluated under the 2010 Cap-and-Invest Program would continue to be regulated under the Proposed Amendments, and the fundamental types of compliance responses they undertake are expected to largely remain unchanged, although the intensity of those compliance responses is expected to increase. Due to the proposed allowance removals for offset use, allowance supply will be impacted as fewer allowances will be available to entities to purchase for compliance resulting from the implementation of the new statutory requirement. Overall, increased stringency associated with removing allowances from the Cap-and-Invest Program budgets for compliance offset use is expected to increase the pace of GHG reductions due to increased investment in energy efficiency, equipment and process upgrades, and clean technology for covered entities as compliance responses.

The 2010 FED and 2016 EA detailed the reasonably foreseeable compliance responses for each covered sector resulting from changes to allowance supply as summarized in

section C.1(c) above. As discussed above, the Proposed Amendments build upon past approaches to accounting for compliance offset use in the Cap-and-Invest Program and the same reasonably foreseeable compliance responses are expected under the Proposed Amendments.

3. Revise the Cost-Containment Provisions in the Context of Updated Allowance Budgets

The Proposed Amendments include changes to cost containment mechanisms that aim to limit an entity's compliance costs without compromising the environmental goals of the Cap-and-Invest Program. These mechanisms include the APCR with two price tiers that allow covered entities access to allowances at set prices as a hedge against higher costs, and a separate Price Ceiling account that enables covered entities to acquire necessary compliance instruments to meet their compliance needs at a maximum price. The Proposed Amendments include additional allowances in the APCR tier from post-2030 budgets. The Proposed Amendments also make changes to amend the trigger price for offering a Reserve sale and to update the definition and purpose of Price Ceiling Unit. Aligned with its requirements to support affordability, in AB 1207 the Legislature directed all moneys raised from the sale of Price Ceiling Units be deposited in a new fund for future Legislative appropriation.

a) Reasonably Foreseeable Compliance Responses

The 2010 FED and 2016 EA detailed reasonably foreseeable compliance responses for each covered sector resulting from the cost-containment provisions of the APCR. The Proposed Amendments include additional allowances in the APCR tier from post-2030 budgets.

The updated cost containment provisions would not alter the mechanisms covered entities would use to comply with the Cap-and-Invest Program. Staff expects including additional allowances in the APCR will support the ability of the reserve tiers to support cost containment and is not expected to result in additional compliance responses. Setting a new price trigger for Reserve sales is likewise not expected to result in additional compliance responses. Potential additional compliance responses from the changes to the definition and purpose of the Price Ceiling Units is unknown but generally expected to be similar and will depend on future decisions by the Legislature on the use of any moneys from the sale of Price Ceiling Units. Overall, the compliance responses from these activity types (like fuel-switching and electrification) were already assessed in previous EAs and are detailed in section C.1(c) above. Covered entities would continue to decide whether to decrease their GHG emissions, or to purchase compliance instruments, or a combination of these responses.

4. Changes and Updates to Entity Registration Requirements, Market Monitoring and Trading Rules, and Corporate Association Group (CAG) Requirements

Since the beginning of the Cap-and-Invest Program, CARB has allowed for entities not covered, such as traders, brokers, offset project operators, and financial institutions, to participate in the market as voluntarily associated entities (VAE). These VAEs help provide liquidity in the market. VAEs must meet strict registration requirements to participate in the market. The Proposed Amendments will clarify existing Cap-and-Invest Program registration requirements for both covered entities and voluntary entities to enhance market monitoring and to ensure clarity of CARB's enforcement of Cap-and-Invest Program requirements in the event of any violation. The Proposed Amendments also clarify the beneficial holdings provision, which prohibits holding allowances in an account on behalf of a second separate entity, as it relates to security interests in allowances and investment management agreements. The changes in the Proposed Amendments support market monitoring and program oversight activities that maintain a well-functioning market and ensure the market is free of abuse and manipulation.

a) Reasonably Foreseeable Compliance Responses

Clarifications on existing entity registration requirements, updates to triggers for forming a corporate associate group, and clarifications to the beneficial holdings provision are largely administrative in nature.

Covered entities are not expected to take actions that would result in the construction of additional facilities or operations as a result of these potential changes and they would not be expected to affect existing compliance responses for covered sectors.

5. Carbon Capture and Sequestration

Carbon dioxide (CO_2) removal and carbon capture and sequestration (CCS) is expected to play an important role for the State to achieve the AB 1279 2045 carbon neutrality target. The 2022 Scoping Plan Update envisions an important role for CO_2 removal and carbon capture and sequestration to achieve the AB 1279 goals.

SB 905, adopted in 2022, directs CARB to establish a Carbon Capture, Removal, Utilization, and Storage Program. However, SB 905 does not allow for the transport of concentrated CO_2 through pipelines in the State until the project operator demonstrates that the pipeline meets the applicable regulatory standards for CO_2 pipeline safety as defined by SB 614 (Stern, Chapter 529, Statutes of 2025) Until the carbon pipeline safety regulations are adopted, it is likely that only projects that do not need to transport CO_2 by pipeline would be implemented. As such, the proposed amendments simply move a section of the Cap-and-Invest Program regarding CCS to a different, more central location within the Cap-and-Invest Program and clarify that sequestration could in the future apply to both geologic and non-geologic sequestration once applicable protocols are developed and adopted by CARB. No substantive amendments are proposed related to the overall treatment of CCS as it relates to compliance obligations, and therefore the Proposed

Amendments would not change the anticipated compliance responses as compared to the existing Cap-and-Invest Program.

a) Reasonably Foreseeable Compliance Responses

Covered entities are not expected to take actions that would result in the construction of additional facilities or operations as a result of these potential changes, as they do not change any Cap-and-Invest Program compliance requirements.

6. Update Allocation for Electrical Distribution Utilities (EDUs) and Natural Gas Suppliers (NGS)

The Proposed Amendments include updates to EDU allocations from the 2027-2030 allowance budgets to account for the more ambitious 2030 RPS target required by Senate Bill 100 and the most recent information about supply and demand from the California Energy Commission Integrated Energy Policy Report. The Proposed Amendments also apply similar methodologies to establish EDU allocations through the 2035 allowance budget. The Proposed Amendments revise EDU allocations from the 2027-2030 allowance budgets to more appropriately reflect the Program's expected cost burden to EDUs, resulting in a reduction in allocation during this period for most EDUs.

CARB also allocates free allowances to natural gas suppliers (NGS) to benefit their ratepayers, consistent with the goals of AB 32. As required by AB 1207, the Proposed Amendments provide a framework to transition freely allocated allowances provided to investor-owned utility (IOU) natural gas suppliers to EDUs with residential ratepayers starting in 2029. These additional allowances will need to be consigned to auction and returned to residential ratepayers as climate credits. In addition, under the current Regulation, NGS allocation is provided each year with allowances from the subsequent budget year. The Proposed Amendments include a new true-up mechanism to provide allowance allocation to a newly eligible NGS that incurred a compliance obligation for covered emissions in the current and prior data year but did not receive allowance allocation for those years.

The Proposed Amendments include updates to requirements for the use of freely allocated allowance value by all electrical and natural gas utilities to support and better align with the Cap-and-Invest Program goals and requirements of AB 1207.

a) Reasonably Foreseeable Compliance Responses

The updated EDU allocations from the 2027-2030 allowance budgets, the new EDU allocations from the 2031-2035 allowance budgets and changes to NGS allocation are unlikely to cause additional types of compliance responses from the covered electricity or natural gas sector. The most likely compliance response to the reduction in allowance allocation is reduced amounts of auction proceeds for bi-annual climate credits and reduced investment by EDUs in GHG reduction projects, which will in part be offset for the EDUs by the transition of NGS allocation to EDUs. Given the declining amount of free allowance allocation to NGS, the magnitude of compliance activities undertaken by NGS

may increase. Staff anticipates that monetization of allowances by publicly owned utilities for the additional allowances transitioned from NGS is unlikely to cause additional types of compliance responses from the covered electricity sector as previously discussed in Appendix J of the 2010 ISOR (CARB 2010b).

The proposed true-up allocation mechanism for newly covered NGS would be unlikely to cause additional types of compliance responses from the natural gas sector. The amount of true-up allocation provided under this provision would be expected to be minimal and allows the Program to provide allowances to any new natural gas supplier using the same calculation methodology applied to currently eligible NGS. These compliance responses are consistent with the compliance responses previously evaluated in the 2016 EA and are detailed in section C.1(c) above.

7. Ensure Consistent Compliance Obligations and Minimize Emissions Leakage for Imported Electricity

The Cap-and-Invest Program is designed to ensure progress toward the California's GHG emissions reduction targets, to cover emissions associated with the electricity generated and used in the State, and to complement other energy sector policies, including the Renewables Portfolio Standard (RPS), Emissions Performance Standards, energy efficiency standards for buildings and appliances, and the suite of measures adopted pursuant to AB 32.

In 2014, the California Independent System Operator (CAISO) implemented a Western Energy Imbalance Market (WEIM), which allows out-of-state entities to participate in trading "imbalance" energy in CAISO's real-time energy markets. When importing out-of-state electricity to serve California load, the WEIM identifies, or "deems," electricity from an out-of-state source as dispatched to serve California load in part based on its GHG emissions intensity. Building upon the existing design of the real-time energy market, the Extended Day-Ahead Market (EDAM) will be a market where individuals and companies could sell and purchase electricity at financially binding prices for the next day, and it is expected to launch in 2026.

Under AB 32, CARB must account for statewide GHG emissions, including all emissions resulting from the generation of electricity delivered to and consumed in California, whether that electricity is generated in-state or imported to serve California load. CARB and CAISO continue to work to ensure electricity imports to California via CAISO markets are fully accounted for under the Cap-and-Invest Program. In particular, resources may be dispatched, or may change their behavior, as a result of the new EDAM and updated WEIM market operations. The Proposed Amendments include revisions designed to ensure electricity sector emissions leakage from operation of the EDAM and WEIM and other western electricity markets are appropriately addressed by the Cap-and-Invest Program. Electricity generation sources within the CAISO markets may be dispatched, or may change their behavior, as a result of new EDAM and updated WEIM operations. The Proposed Amendments ensure emissions associated with electricity imported to California via the EDAM are included as a compliance obligation for those entities importing the electricity to California and that associated emissions leakage is addressed.

a) Reasonably Foreseeable Compliance Responses

The inclusion of emissions associated with electricity imports that occur through EDAM would ensure all electricity imports continue to be covered by the Cap-and-Invest Program. Continuing complete coverage of imported electricity emissions is not expected to result in the construction of additional facilities or operations, and compliance responses are expected to be consistent with those previously evaluated in the 2016 EA and are detailed in section C.1(c) above. The mechanism to address emissions leakage in the electricity sector due to WEIM and EDAM would also lead to a decrease in EDU allocation for entities whose participation in WEIM and EDAM. No other compliance responses are anticipated.

8. Minimize Industrial Emissions Leakage and Continue Support for Decarbonizing California's Industrial and Fuels Sectors

Pursuant to AB 32, CARB designed the Cap-and-Invest Program to minimize the potential for emissions leakage. Emissions leakage is a decrease in GHG emissions in-state with a corresponding increase in out-of-state GHG emissions. Since the Cap-and-Invest Program adoption in 2011, design elements to minimize leakage risk have included:

- industrial allocation to incentivize maintaining efficient production within California;
- a consistent carbon price signal for all electricity used to serve California load; and
- prohibitions against shuffling imported electricity resources to lower compliance obligations within the Cap-and-Invest Program.

In adopting AB 398 in 2017, the California Legislature prioritized maximizing the Cap-and-Invest Program's industrial leakage protection mechanism. Accordingly, in 2018 CARB set the assistance factors for industrial leakage protection to 100% for the third compliance period and through 2030. In AB 1207, the California Legislature removed the requirement that the cap adjustment factor must be proportional to the overall allowance budgets. This provides CARB flexibility to set cap adjustment factors based on data and changes in economic conditions.

To achieve the State's climate targets, the 2022 Scoping Plan Update indicates that industrial sources will need to rapidly accelerate GHG emissions reductions. The transformation of industrial sectors needed to both achieve decarbonization at facilities and support broader GHG emissions reductions across the economy will likely depend on the production and use of low-carbon fuels, such as sustainable biofuels and low-carbon hydrogen, electrification of industrial processes, and capture and sequestration or use of CO_2 emissions that cannot otherwise be reduced. Allowance allocation to industrial entities is designed to minimize leakage risk by creating an incentive for efficient in-state production. Within the Cap-and-Invest Program, industrial allocation is intended to reward facilities with low GHG emissions intensity and to promote investment in energy efficiency, deployment of low-carbon fuels, and adoption of other GHG emissions reduction activities. Continued and updated allowance allocation to industrial sectors will

help mitigate emissions leakage and incentivize innovation and decarbonization at California facilities.

The Proposed Amendments set new cap adjustment factors from 2031-2035, maintain assistance factors through 2035,revise the existing product-based allocation benchmarks and related definitions for cement manufacturing, crude oil production, transportation fuel production, and other sectors to ensure the Cap-and-Invest Program appropriately incentivizes low-carbon production methods and provides consistent treatment for innovative methods of supplying California with fuels and materials. The Proposed Amendments also include new covered products and new covered product definitions for product-based allocation. It also includes new provisions to provide product-based allowance allocation for manufacturing newly covered products during prior years, to minimize emissions leakage risk and support innovation within industrial sectors.

The Proposed Amendments also update the product and energy-based allocation methods to directly allocate to industrial covered entities to mitigate the leakage risk associated with carbon costs in purchased electricity, transferring the administrative responsibility from CPUC to CARB. Currently, CPUC directs investor-owned EDUs to rebate eligible industrial facilities using calculations that closely mirror CARB's industrial allocation calculations. Under this CPUC-directed framework, covered industrial facilities in publicly owned utility (POU) service territory do not necessarily receive the same type of leakage protection as facilities in investor-owned utility (IOU) service territory. The Proposed Amendments would not change the level of leakage protection for covered industrial customers of investor-owned EDUs but would ensure that covered industrial customers of both IOUs and POUs are provided the same leakage protections.

The Proposed Amendments also include a new mechanism to minimize emissions leakage and provide support to manufacturing sectors to decarbonize production, by providing an opt-in process for additional free allowance allocation to support electrification of processes or use of alternative low-carbon fuels and renewable energy. This mechanism is designed to enable decarbonization of sectors with high heat requirements or with limited cost-effective opportunities for GHG emissions reductions, while maintaining efficient production in California thereby minimizing emissions leakage.

The Proposed Amendments clarify existing CO_2 emissions exemptions for biofuels, revise or add definitions for some biofuels, and include some adjustments to biofuel CO_2 emissions exemptions including enabling consistent exemption of biogenic process CO_2 emissions (for example, emissions associated with producing hydrogen from biomethane), enabling exemption for biofuels derived from already-exempt biomass (for example, producing biochar from fuels that are currently eligible for emissions exemption), clarifying and updating the eligibility requirements for exempt biomass (for example, utilizing biomethane purchased via contract from a biomethane producer), enabling emissions exemptions of certain new biofuels (biogenic gasoline blendstocks aligned with treatment of renewable diesel and other biogenic gases to enable consistent treatment of gaseous biogenic fuels), and removing the exemption for fossil denaturant blended in fuel ethanol. These modifications to biofuel exemptions are aligned with existing exemptions within the Cap-and-Invest Program which already enables

exemptions for biogenic combustion CO_2 emissions, a variety of residual and waste biomass, biomethane derived from organic waste, and renewable diesel, ethanol, and biodiesel. The clarifications, reorganization, and modifications to CO_2 emissions exemptions for biofuels provide a more consistent and certain regulatory environment for the evolving biofuels sector.

a) Reasonably Foreseeable Compliance Responses

Changes in cap adjustment factors, allocation methods and benchmarks could alter the amount of freely allocated allowances received by covered entities, but no changes to types of compliance responses are anticipated from compliance responses detailed in the 2010 FED and 2016 EA and summarized in section C.1(c) above.

However, depending on the amounts of free allowance allocations, the magnitude of compliance activities undertaken by covered entities may vary. Covered entities experiencing a decrease in product-based allowance allocation are expected to respond by acquiring more compliance instruments in other ways and by more aggressively pursuing GHG emissions reductions through reducing fuel use, using low-carbon fuels, electrifying operations, producing renewable electricity onsite, using energy storage, using low-carbon feedstocks or products, upgrading equipment, and other efficiency improvements. Covered entities experiencing an increase in free production-based allowance allocation are likely to respond through similar activities (because freely-allocated allowances have market value and could be sold), but in a less ambitious manner. The new mechanism to provide additional leakage protection and support for the manufacturing sectors to decarbonize production will directly incent covered entities to pursue specified GHG emissions reductions activities.

Revisions of benchmarks and definitions for the cement manufacturing, crude oil production, and transportation fuel production sectors, may result in construction or expansion of certain facilities that were previously ineligible for allocation or that utilize emerging, innovative, or lower carbon production methods. Introduction of new products eligible for allocation and the new product allocation mechanism may result in construction or expansion of certain facilities that produce products that were previously ineligible for allocation.

Clarifications and reorganization of existing CO_2 emissions exemptions for biofuels and addition or revision of biofuel definitions are largely administrative in nature and they would not affect previously evaluated compliance responses for covered sectors. The adjustments to biofuel CO_2 emissions exemptions could alter the compliance obligation of covered entities, but no changes to types of compliance responses would be anticipated from compliance responses detailed in the 2010 FED and 2016 EA and summarized in section C.1(c) above. However, depending on the availability of a biofuel for use by a specific sector or facility, covered entities may respond by acquiring, utilizing, producing, or supplying more biofuels. The adjustments to biofuel CO_2 emissions exemptions, particularly the adjustments to enable exemption of biogenic process CO_2 emissions, exemption of biofuels derived from already exempt biomass, and the clarification and updates on eligibility for exemption for biomass-derived fuels supplied

under contract, may result in construction or expansion of certain facilities that have high amounts of biogenic process CO_2 emissions or can produce biofuels derived from already exempt biomass. For example, facilities engaging in gasification or pyrolysis of woody agricultural wastes and material removed for forest stand protection, may produce biogenic process CO_2 emissions and may produce an array of biofuels such as biochar and biogenic propane.

9. Clarifications on Requirements of the Cap-and-Invest Program

The Proposed Amendments would clarify and streamline implementation of parts of the Compliance Offsets Program, allowance auctions, and the requirements for the verification of the individual personal information submitted pursuant to the Cap-and-Invest Program.

Proposed amendments to the Cap-and-Invest Program's Compliance Offsets Program requirements include clarifications to definitions; clarifications to offset project reporting and verification requirements and deadlines, including those related to post-crediting period monitoring; adding a verification requirement for out-of-state forest projects to renew direct environmental benefits to the state status; new requirements for the transfer of real property containing a forest offset project to a new owner; minor modifications to forest project listing requirements; minor quantification updates; and indicating that forest offset projects on Alaska Native Corporation (ANC) lands are eligible for the public lands risk ratings.

The Proposed Amendments include updates to the individual user registration requirements, clarifications to the auction and reserve sale transfer distribution and financial settlement dates. The Cap-and-Invest Program currently requires verification of the individual Know-Your-Customer (KYC) documentation in the form of notarization. The Proposed Amendment would provide additional clarity on notarization requirements.

a) Reasonably Foreseeable Compliance Responses

These potential changes are largely administrative in nature; and therefore, they would not affect previously evaluated compliance responses for covered sectors as detailed in section C.1(c) above.

10. Adjustments to Limited Emissions Exemptions

Under the Cap-and-Invest Program, some sources of GHG emissions do not incur a compliance obligation to align with State policy, concerns regarding the accuracy of utilized reporting methods, or Cap-and-Invest Program jurisdiction. The Proposed Amendments make some updates to the emissions that are exempt from a Cap-and-Invest Program compliance obligation based on implementation experience and to align with evolving State policy. Staff proposes to remove the existing exemption for fugitive and vented emissions reported by entities that are natural gas suppliers. This exemption was based on concerns of double-counting covered emissions; however, implementation experience and corresponding minor updates in MRR to the methods

for calculating supplied natural gas would eliminate the potential for double-counting covered emissions. Under the Proposed Amendments, the exemptions for fugitive and vented emissions reported across the oil and gas sector would be consistently applied across all covered entities within the production and distribution supply chain. The Proposed Amendments include a new exemption for pipeline dig-ins, which is a unique reported source type to NGS distribution and transmission pipelines. An exemption is provided for reported emissions associated with pipeline-dig-ins as the ability and method to report emissions may not meet MRR's 5% accuracy standard. The Proposed Amendments remove the specific emissions exemption for process emissions from fuel cells powered by biomass-derived fuels. The specific exemption for biogenic process emissions for fuel cells powered by biomass-derived fuels is no longer necessary given modifications that enable the exemption of biogenic process CO_2 emissions from any exempt biomass-derived fuels. The Proposed Amendments includes a limited exemption for GHG emissions from fuel cells consistent with Board Resolution 18-51. It also includes a provision that electricity generating facility emissions as a result of a state of emergency declared by the Governor may be excluded from the facility's annual emissions when comparing to the Cap-and-Invest Program inclusion threshold. Finally, the Proposed Amendments amend the RPS Adjustment effective in 2031. The RPS adjustment is an optional mechanism to reduce an entity's compliance obligation associated with out-of-state RPS- eligible generation that is not directly delivered to California. After 2030, this optional mechanism is limited to Portfolio Category 0 grandfathered resources. The limitation of this optional exemption may increase compliance costs for some entities.

a) Reasonably Foreseeable Compliance Responses

Removing the exemption for vented and fugitive emissions reported by natural gas suppliers may incent compliance responses consistent with other covered entities within the oil and gas sector for which vented and fugitive emissions could incur a compliance obligation. As detailed in the 2010 FED and 2016 EA and in in section C.1(c) above, reasonably foreseeable compliance responses within the oil and gas sector includes upgrading equipment, installing emission control devices, and improving maintenance and operating procedures to reduce emissions. Removal of the exemption for vented and fugitive emission reported by natural gas suppliers is not expected to affect any additional compliance responses not previously considered. The Proposed Amendments include a new exemption for pipeline dig-ins, which is a unique reported source type to NGS distribution and transmission pipelines. Reported emissions from pipeline dig-ins are already exempt under the Cap-and-Invest Program, pursuant to the exemption for vented and fugitive emissions reported by natural gas suppliers, and maintaining this exemption would not impact their compliance responses.

Removing the specific emissions exempt for process emissions from fuel cells powered by biomass-derived fuels would have no impact on compliance responses of covered entities. The specific exemption for biogenic process emissions for fuel cells powered by biomass-derived fuels is maintained by the proposed amendment which enables exemption of biogenic process CO_2 emissions from any exempt biomass-derived fuels.

Excluding electricity generating facility emissions as a result of a state of emergency declared by the Governor from the facility's annual emissions when comparing to the Program inclusion threshold is not expected to lead to any operational changes at relevant facilities, as these facilities would be operating to support the electrical grid under a state of emergency, and staff does not anticipate the Proposed Amendments would change those operational decisions.

Incorporating a limited emissions exemption for some fuel cells consistent with Board Resolution 18-51 may encourage the deployment or expansion of fuel cell use at some covered facilities, a compliance response assessed in the 2010 FED.

Limiting the RPS adjustment may lead to increased compliance costs for some entities and could lead to additional procurement and development of zero-carbon resources that directly serve California load.

D. Summary of Compliance Responses

In summary, reasonably foreseeable compliance responses to the Proposed Amendments include: increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

3.0 ENVIRONMENTAL AND REGULATORY SETTING

CEQA Guidelines require an EIR to include an environmental setting section that discusses the current environmental conditions in the vicinity of the project. This environmental setting normally constitutes the baseline physical conditions against which an impact is compared to determine whether it is significant (14 CCR Section 15125). For this Draft EIA, CARB is using a 2023 baseline as the environmental setting, as that is the year in which the environmental analysis commenced (the Notice of Preparation was posted on September 19, 2023).

As discussed in Chapter 1 of this Draft EIA, CARB has a CEQA certified regulatory program and prepares an EIA in lieu of an EIR. This Draft EIA is a functional equivalent to an EIR under CEQA; therefore, in an effort to comply with the policy objectives of CEQA, an environmental setting and a regulatory setting with environmental laws and regulations relevant to the Proposed Amendments have been included as Attachment A to this Draft EIA.

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4.0 IMPACT ANALYSIS AND MITIGATION MEASURES

A. Approach to the Environmental Impacts Analysis and Significance Determination

This chapter contains an analysis of environmental impacts and mitigation measures associated with the Proposed Amendments. CEQA states the baseline for determining the significance of environmental impacts would normally be the existing conditions at the time the environmental review is initiated (Title 14 California CCR Section 15125(a)). Therefore, significance determinations reflected in this Draft EIA are based on a comparison of the potential environmental consequences of the Proposed Amendments with the physical conditions in 2023 (see Attachment A). For the purpose of determining whether the Proposed Amendments may have a potential effect on the environment, CARB evaluated the potential physical changes to the environment resulting from the reasonably foreseeable compliance responses described in further detail in Chapter 2 of this Draft EIA. A table summarizing all the potential impacts and proposed mitigation for each resource area discussed below is included in Attachment B to this document.

The reasonably foreseeable compliance responses associated with the Proposed Amendments are analyzed in a programmatic manner for several reasons: (1) any individual action or activity would be carried out under the same authorizing regulatory authority; (2) the reasonably foreseeable compliance responses would result in generally similar environmental effects that could be mitigated in similar ways (Title 14 CCR Section 15168(a)(4)); and (3) while the types of foreseeable compliance responses can be reasonably predicted, the specific location, design, and setting of the potential actions cannot feasibly be known at this time. If a later activity would have environmental effects that are not examined within this Draft EIA, the public agency with authority over the later activity may be required to conduct additional environmental review as required by CEQA or other applicable law.

Therefore, when considering the information on impacts to each resource area analyzed below, the reader should bear in mind the limitations of CARB's ability to analyze impacts at this time. Given the programmatic nature of the Proposed Amendments, the specific location, type, and number of construction activities are not known and would be dependent upon a variety of factors that are not within the control or authority of CARB and not within its purview. Thus, CARB cannot analyze site-specific impacts from the Proposed Amendments, as these would be too speculative to provide a meaningful evaluation. Nonetheless, the analysis presented herein provides a good-faith disclosure of the general types of impacts that could occur with implementation of the reasonably foreseeable compliance responses. Further, as noted above, additional environmental review would be conducted as appropriate at the time that an individual project is proposed, and land use or construction approvals are sought.

The analysis is based on reasonably foreseeable compliance responses that are based on a set of reasonable assumptions. While the compliance responses described in this Draft EIA are not the only conceivable ones, they provide a credible basis for impact conclusions that are consistent with available evidence. And, as discussed in this Draft

EIA Chapter 2.0, the evaluation of certain compliance responses would be speculative under CEQA. CEQA does not require evaluation of speculative impacts (Title 14 CCR Section 15145). For that reason, an evaluation of the effects of these responses is not required and is not included in this analysis. The analysis also includes actions that could likely occur under a broad range of potential scenarios. The impact discussions reflect a conservative assessment to describe the type and magnitude of effects that may occur (i.e., the conclusions tend to overstate adverse effects) because the specific location, extent, and design of potential new and/or modified facilities cannot be known at this time.

1. Adverse Environmental Impacts

The potentially significant adverse impacts on the environment discussed in this Draft EIA, and significance determinations for those effects, reflect the programmatic nature of the reasonably foreseeable compliance responses of the regulated entities. These reasonably foreseeable compliance responses are described in more detail in Chapter 2.0 (Project Description) of this Draft EIA. The Draft EIA addresses broadly defined types of impacts or actions that may reasonably foreseeably be taken by others in the future as a result of implementation of the Proposed Amendments.

This Draft EIA takes a conservative approach and considers some environmental impacts as potentially significant because of the inherent uncertainties in the relationship between physical actions that are reasonably foreseeable under the Proposed Amendments and environmentally sensitive resources or conditions that may be affected. This conservative approach tends to overstate environmental impacts in light of these uncertainties and is intended to satisfy the good-faith, full-disclosure intention of CEQA. If and when specific projects are proposed and subjected to project-level environmental review, it is expected that many of the impacts recognized as potentially significant in this Draft EIA can actually be avoided or reduced to a less than significant level.

Where applicable, consistent with CARB's certified regulatory program requirements (Title 17 CCR Section 60004.2), this Draft EIA also acknowledges potential beneficial effects on the environment in each resource area that may result from implementation of the Proposed Amendments. Any beneficial impacts associated with the Proposed Amendments are included in the impact analysis for each resource area listed below.

2. Mitigation Measures

The Draft EIA contains a degree of uncertainty regarding implementation of feasible mitigation for potentially significant impacts. "'Feasible' means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (Cal. Public Resources Code, Section 21061.1) While CARB is responsible for adopting the Proposed Amendments, it does not have general land use authority over all the potential infrastructure and development projects that could be carried out in response to the Proposed Amendments. Other agencies are responsible for the review and approval, including any required project-level environmental analysis, of any facilities and infrastructure that are reasonably foreseeable, including any definition and adoption of

feasible project-specific mitigation measures, and any monitoring of mitigation implementation. For example, local cities or counties must review and decide to approve proposals to construct new facilities; CARB does not have jurisdiction over land use permitting of any potential development associated with the compliance responses, such as new manufacturing or recycling facilities. (Cal. Const., Article XI, section 7 ["A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws."]; *California Building Industry Assn. v. City of San Jose* (2015) 61 Cal.4th 435, 455; *Big Creek Lumber Co. v. County of Santa Cruz* (2006) 38 Cal.4th 1139, 1151-1152; Health and Safety Code, Sections 39000-44474 [CARB's statutory authority provides no authority to regulate local land use permitting].) Additionally, State and/or federal permits may be needed for specific environmental resource impacts, such as take of endangered species, filling of wetlands, and streambed alteration.

Because CARB cannot predict the location, design, or setting of specific projects that may result and does not have authority over implementation of development that may occur, the programmatic analysis in the Draft EIA does not allow for identification of the precise details of project-specific mitigation. As a result, there is inherent uncertainty in the degree of feasible mitigation that would ultimately need to be implemented to reduce any potentially significant impacts identified in the Draft EIA.

Given the foregoing, and due to legal factors discussed above affecting the feasibility of CARB's proposed mitigation for many of the identified potential significant indirect impacts associated with the Proposed Amendments, CARB's implementation of the identified mitigation measures is infeasible, based on the following: 1) the lack of certainty of the scope, siting, and specific design details of compliance-response development projects, which prevents CARB from being able to determine the projects' significant environmental impacts; and 2) even if there was certainty with respect to compliance-response development projects and associated significant environmental impacts, CARB lacks the legal authority and jurisdiction to permit these projects, which inherently prevents CARB from legally imposing enforceable mitigation measures on the projects. Therefore, while the mitigation measures identified in this EIA are considered by CARB to be feasible to implement, CARB itself cannot legally enforce them.

Consequently, this Draft EIA takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate the risk that feasible mitigation may not be sufficient to mitigate an impact to less than significant) and discloses, for CEQA compliance purposes, that potentially significant environmental impacts may be unavoidable, where appropriate, due to the lack of jurisdiction by the lead agency to enforce the mitigation measures. It is also possible that the amount of mitigation necessary to reduce environmental impacts to below a significant level may be far less than disclosed in this Draft EIA on a case-by-case basis. It is expected that many potentially significant impacts of facility and infrastructure projects would be avoidable or mitigatable to a less-than-significant level as an outcome of their project-specific environmental review processes, conducted by the appropriate permitting agency with jurisdiction as the lead agency under CEQA.

B. Resource Area Impacts and Mitigation Measures

The following discussion provides a programmatic analysis of the reasonably foreseeable compliance responses that could result from implementation of the Proposed Amendments, described in Chapter 2 of this Draft EIA. These impacts are discussed under each environmental resource area in accordance with the topics presented in the Environmental Checklist in Appendix G to the CEQA Guidelines (Title 14 CCR Section 15000 et. seq). These impact discussions are followed by the types of mitigation measures that could be required to reduce potentially significant environmental impacts.

1. Aesthetics

Impact 1-1: Short-Term Construction-Related and Long-Term Operational-Related Effects on Aesthetics

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Landscape character can be defined as the visual and cultural image of a geographic area. It consists of the combination of physical, biological, and cultural attributes that make each landscape identifiable or unique. Visual character may range from predominantly natural to heavily influenced by human development. Its value is related, in part, to the importance of a site to those who view it. Viewer groups typically include residents, motorists, and recreation users.

Short-term construction-related activities associated with the reasonably foreseeable compliance responses including the construction of new pipelines, electricity transmission and distribution infrastructure, and on- and off-site battery storage systems would involve typical off-road construction equipment (e.g., backhoes, graders, dozers) and on-road heavy duty vehicles for transport of materials to and from construction sites. Earth moving, paving, or other activities could create temporary mounds or piles of dirt or require staging areas where materials or equipment would be temporarily stored.

Depending on the hours when construction is conducted, sources of glare or lighting could be present. Although there is uncertainty regarding the locations of these activities, the existing visual character, scenic vistas, or views from a State scenic highway could be degraded by the presence of heavy-duty equipment, glare, lighting, or disturbed earth.

Although it is reasonably foreseeable that activities associated with new or modified facilities could occur, there is uncertainty as to the exact location or existing visual character of any new facilities or modifications of existing facilities. The Proposed Amendments could result in process changes and efficiency improvements, which could include the use of on- and off-site renewable energy electricity and storage systems that could change the physical character of an existing facility, however, these changes would be similar in character to existing industrial facilities. Any new biorefining and co-processing facilities that may be constructed in response to the Proposed Amendments would be similarly industrial in physical character. These buildings would be between one and several stories tall, most commonly the structures would have a maximum height of six stories and some facilities may include adjoining smoke stacks reaching over 100 feet tall. The visual character of these structures would not be different than what commonly exists in areas zoned for industrial uses. The Proposed Amendments may also result in the construction of new wind turbines, which can range from a couple of stories tall to over 300 feet tall depending on capacity needs and any existing height requirements applicable to the project site. Some of the reasonably foreseeable compliance responses could be accomplished with minimal ground-disturbing activity or other changes to the existing visual setting. For instance, increased refining of low-intensity fuels could be performed within existing refining facilities that undergo internal retrofitting. The outward appearance of such facilities would not require physical modifications that could degrade the visual character or quality of the surrounding area. Thus, visual impacts would not be substantial in these cases.

Increased use of renewable energy electricity, storage systems and technology could produce additional demand for batteries, such as lithium-ion batteries, resulting in increased demand for lithium and other rare earth metals. Worldwide, the majority (80 to 90%) of raw lithium is currently mined and exported from Australia, Chile, Argentina, and Bolivia. Lithium and other rare earth metals such as graphite, copper, nickel, manganese, cobalt, zinc, gallium, and germanium are typically derived from hard rock mining practices or, for lithium specifically, from brine extraction. Hard rock mining requires the use of heavy-duty equipment (e.g., crushers, rigs, loaders, cutting equipment, cranes) and could result in harmful visual changes to the natural environment such as hillside erosion, contamination of surface waters, artificial drainage patterns, subsidence, night-time lighting, and deforestation. In contrast, brine extract, which occurs in Chile, Argentina, Bolivia, and now in the Salton Sea in California, involves vertical pumping of brine, that evaporates to form brown and white cones of salt minerals. It is reasonably foreseeable that increased demand for rare earth metals could cause these types of adverse visual effects in areas where hard rock mining and brine extraction activities (Chile, Argentina, Bolivia, and California) occur.

The reasonably foreseeable compliance responses could also result in accelerated turnover of lithium-ion and nickel-metal hydride (NiMH) batteries and solar panels, which

could place additional demand such that existing recycling facilities would need to be expanded or modified. The reasonably foreseeable compliance responses could also result in new or modified facilities focused on refining of biofuels or additional facilities to provide onsite production of renewable energy. Modifications to or expansion of existing recycling centers, refining facilities, and on site renewable energy generators could occur within the confines of such facilities or on the same property and, therefore, would not result in additions of off-site equipment that would degrade visual quality; however, development of new facilities, although expected to occur in areas appropriately zoned, could result in or increase the presence of visible human-made elements (e.g., heavy-duty trucks, new structures). Although new facilities would typically be located in areas designated/zoned for these uses, which are not typically areas with high scenic value, it is possible that such facilities could be located in areas of scenic importance. There is uncertainty surrounding the specific locations of new recycling facilities; therefore, adverse effects to scenic vistas or views from a State scenic highway could occur. Further, sources of daytime glare and nighttime lighting associated with these facilities could be introduced.

In general, infrastructure already exists to support increased shipments of feedstock crops and fuels via rail and ocean-going vessels. New production plants for low-carbon biofuels, low-carbon hydrogen, and biomethane could be constructed and operated to meet future demands. New pipelines for renewable natural gas and hydrogen could also be constructed to meet future increased demand for these fuels. Rail and trucking routes could also expand to transport these fuels into and throughout California.

Implementation of the Proposed Amendments would also result in decreased oil and gas extraction, which may have beneficial impacts to scenic vistas. The extraction of oil and gas on land requires the use of large, industrial drills that move in sequence to remove crude oil from the ground, and are distributed throughout California's landscapes in areas of high crude oil potential. A decrease in the oil and gas refining from the implementation of the Proposed Amendments could result in the decommissioning and/or removal of these drills. Removal of these drills, many of which can been seen from state highways, could have a beneficial impact to the overall quality of the state's scenic landscape.

Efforts to improve the energy efficiency of existing or future facilities would occur within the boundaries of the facility and would not alter the physical character of such a facility.

Nevertheless, in consideration of all of the compliance responses associated with the Proposed Amendments, short-term construction-related and long-term operational-related effects to aesthetics associated with implementation of the Proposed Amendments would be potentially significant.

Mitigation Measure 1-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to visual resources. CARB does not have the authority to require implementation

of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices routinely required to avoid and/or minimize impacts on aesthetic resources include:

- Proponents of new development and new facilities and structures constructed will submit applications to State or local land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a project for development.

- Based on the results of the environmental review, proponents will implement all feasible mitigation to reduce or substantially lessen the potentially significant scenic or aesthetic impacts of the project.

- To the extent feasible, the sites selected for use as construction staging and laydown areas shall be areas that are already disturbed and/or are in locations of low visual sensitivity. Where feasible, construction staging and laydown areas for equipment, personal vehicles, and material storage would be sited to take advantage of natural screening opportunities provided by existing structures, topography, and/or vegetation. Temporary visual screens would be used where helpful if existing landscape features did not screen views of the areas.

- All construction and maintenance areas shall be kept clean and tidy, including the re-vegetation of disturbed soil. Storage of construction materials and equipment shall be screened from view and/or generally not visible to the public, where feasible.

- Siting projects and their associated elements next to important scenic landscape features or in a setting for observation from State scenic highways, national historic sites, national trails, and cultural resources shall be avoided to the greatest extent feasible.

- The project proponent shall contact the lead agency to discuss the documentation required in a lighting mitigation plan, submit to the lead agency a plan describing the measures that demonstrate compliance with lighting requirements, and notify the lead agency that the lighting has been completed and is ready for inspection.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 1-1, it is possible that significant impacts on aesthetics could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses that short-term construction-related and long-term operational-related scenic and nighttime lighting effects resulting from the Proposed Amendments would remain **significant and unavoidable**.

2. Agriculture and Forestry Resources

Impact 2-1: Short-Term Construction-Related and Long-Term Operation-Related Effects on Agriculture and Forestry Resources

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas , and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Short-term construction-related and long-term operational impacts on agriculture and forestry resources may occur. New or expanded manufacturing facilities, production facilities, recycling facilities, emission testing facilities, renewable energy production plants, other electricity generation facilities, and infrastructure, as well as increased mining would likely occur in areas currently zoned for industrial or mineral extraction; therefore, these activities would not affect agricultural and forestry resources. However, solar fields and wind turbines are often located in open space areas that could be zoned as agriculture. While it is reasonable to anticipate that land use policies controlling the location of new facilities would generally avoid conversion of important agricultural land,

the potential cannot be entirely dismissed. Thus, there exists the potential that Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Williamson Act conservation contracts, and forest land or timberlands could be converted to land utilized for industrial purposes.

The expansion of renewable energy generation and storage would result in increased demand for lithium-ion and NiMH batteries. This could place additional demand on lithium, graphite, cobalt, nickel, copper, manganese, chromium, zinc, and aluminum ore extraction internationally. Lithium ore derived from brines typically occurs within desert areas, which are generally not considered valuable land for agricultural or forestry practices; however, lithium, graphite, cobalt, nickel, copper, manganese, chromium, zinc, and aluminum ore extracted from hard rock mining could result in the loss of agricultural and forest lands of importance if resources are identified on land used for agriculture or forestry. Similar to lithium-ion batteries, an increase in demand for fuel cells could result in platinum mining and exports from source countries or other states.

Specific to lithium mining that occurs from the extraction of groundwater brines, impacts to agricultural lands could be significant. Brine mining entails the extraction of lithium from groundwater resources, which is then left to harden at the surface where lithium ore can be refined, processed, and used for manufacturing purposes. This groundwater extraction may result in depleted groundwater resources that could be directed to agricultural activities.

Increased production and use of low-carbon fuels, could require distribution infrastructure (i.e., pipelines) that may be in areas with agriculture or forestry resources. New facilities for the production and distribution of alternative fuels would be expected to occur in areas appropriately zoned; however, such facilities could conceivably be introduced in areas with agricultural uses or in forested areas and may require either temporary or permanent conversion of these resources. These types of impacts could result in significant effects on agriculture and forestry resources.

Therefore, short-term construction-related and long-term operational-related effects to agriculture and forestry resources associated with implementation of the Proposed Amendments would be potentially significant.

Mitigation Measure 2-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to agriculture and forestry resources. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a “project” under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California,

other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices routinely required to avoid and/or minimize impacts on agriculture and forestry resources include:

- Proponents of new or modified facilities constructed because of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body would certify that the environmental document was prepared in compliance with applicable regulations and would approve the project for development.

- Based on the results of the environmental review, proponents would implement all mitigation identified in the environmental document to reduce or substantially lessen the environmental impacts of the project. Because CARB has no land use authority, mitigation is not within its purview to reduce potentially significant impacts to less-than-significant levels. Any mitigation specifically required for a new or modified facility would be determined by the local lead agency and future environmental documents by local and State lead agencies should include analysis of the following:

  - Avoid lands designated as Important Farmland (State defined Prime Farmland, Farmland of Statewide Importance, and Unique Farmland) as defined by the Farmland Mapping and Monitoring Program. Before converting Important Farmland to non-agricultural use, analyze the feasibility of using land (potentially including farmland) that is not designated as Important Farmland (e.g., through clustering or design change to avoid Farmland) prior to deciding on the conversion of Important Farmland.

  - Avoid lands designated as forest land or timberland before converting forestland or timberland to non-forest use, analyze the feasibility of using other lands prior to deciding on the conversion of forest land or timberland.

  - Any mitigation for permanent conversion of Important Farmland caused by facility construction or modification shall be completed prior to the issuance of a grading or building permit by providing the permitting agency with written evidence of completion of the mitigation. Mitigation may include but is not limited to:

    - Restoring agricultural land to productive use through removal of equipment or structures or other means, such that the land can be designated as Farmland.

    - If restoration is not feasible, permanently preserve off-site Important Farmland of equal or better agricultural quality, at a ratio of at least

1:1. Preservation may include the purchase of agricultural conservation easement(s); purchase of credits from an established agricultural farmland mitigation bank; contribution of agricultural land or equivalent funding to an organization that provides for the preservation of Important Farmland.

- Participate in any agricultural land mitigation program, including local government maintained or administered, that provides equal or more effective mitigation than the measures listed.

- Any mitigation for permanent conversion of forest land or timberland caused by facility construction or modification shall be completed prior to the issuance of a grading or building permit by providing the permitting agency with written evidence of completion of the mitigation. Mitigation may include but is not limited to permanent preservation of forest land or timberland of equal or better quality at a ratio of 1:1 or 1.5:1 because some lost ecological value may not be replaceable. Preservation may include purchase of easements or contribution of funds to a land trust or other agency.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 2-1, it is possible that significant impacts resulting from conversion of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Williamson Act conservation contracts, and forest land or timberlands could still occur.

Consequently, while impacts could likely be reduced to some degree (although not to a less than significant level if Important Farmland were converted) with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related and long-term operational impacts on agriculture and forestry resources associated with the Proposed Amendments would remain **significant and unavoidable**.

3. Air Quality

Impact 3-1: Short-Term Construction-Related Effects on Air Quality

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency

improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Implementation of the Proposed Amendments could include construction of new infrastructure or modifications to existing fuel refining, renewable energy generating, or energy storage facilities.

At this time, and given the programmatic nature of the Proposed Amendments, the specific location, type, and number of construction activities are not known and would be dependent upon a variety of factors that are not within the control or authority of CARB and not within its purview. Thus, CARB has not quantified the potential construction-related emission impacts as these would be too speculative to provide a meaningful evaluation. Nonetheless, the analysis presented herein provides a good-faith disclosure of the general types of construction emission impacts that could occur with implementation of these reasonably foreseeable compliance responses. Further, additional environmental review would be conducted as appropriate at the time that an individual project is proposed, and land use or construction approvals are sought.

Generally, it is expected that during the construction phase for any facilities, criteria air pollutants and toxic air contaminants (TACs) could be generated from a variety of activities and emission sources. These emissions would be temporary and occur intermittently depending on the intensity of construction on a given day. Site grading and excavation activities would generate fugitive particulate matter (PM) dust emissions, which is the primary pollutant of concern during construction. Fugitive PM dust emissions (e.g., respirable particulate matter [PM_{10}] and fine particulate matter [$PM_{2.5}$]) vary as a function of several parameters, such as soil silt content and moisture, wind speed, acreage of disturbance area, and the intensity of activity performed with construction equipment. Exhaust emissions from off-road construction equipment, material delivery trips, and construction worker-commute trips could also contribute to short-term increases in PM emissions, but to a lesser extent. It is probable that transport of light equipment and personnel for construction activities would take place using light duty trucks, while transport of heavy equipment or bulk materials would be hauled in heavy-duty trucks. Exhaust emissions from construction-related mobile sources also include reactive organic gases (ROG) and oxides of nitrogen (NO_X). These emission types and associated levels fluctuate greatly depending on the type, number, and duration of usage for the varying equipment. CARB implements several regulations with the purpose of reducing NO_X, PM,

and imposing limits on idling from in-use vehicles and equipment, including the Truck and Bus Regulation, the Regulation for In-Use Off-Road Diesel Fueled Fleets, and the Portable Engine Airborne Toxic Control Measure. Much of the equipment used during the construction phase would be subject to these regulations.

The site preparation phase of construction typically generates the most substantial emission levels because of the on-site equipment and ground-disturbing activities associated with grading, compacting, and excavation. Site preparation equipment and activities typically include backhoes, bulldozers, loaders, and excavation equipment (e.g., graders and scrapers). Although detailed construction information is not available at this time, based on the types of activities that could be conducted, it would be expected that the primary sources of construction-related emissions include soil disturbance- and equipment related activities (e.g., use of backhoes, bulldozers, excavators, and other related equipment). Based on typical emission rates and other parameters for above mentioned equipment and activities, construction activities, including the modification or construction of new industrial facilities, could result in hundreds of pounds of daily NO_X and PM emissions (amount generated from two to four pieces of heavy-duty equipment working eight hours per day), which may exceed general mass emissions limits of a local or regional air quality management district depending on the location of the emissions. Thus, implementation of new or amended regulations and/or incentives could generate levels that conflict with applicable air quality plans or expose sensitive receptors to substantial pollutant concentrations.

As a result, short-term construction-related air quality impacts associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 3-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to air quality. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would typically qualify as a “project” under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices routinely required to avoid and/or minimize impacts to air quality include the following:

- Proponents of new or modified facilities or infrastructure constructed in connection with reasonably foreseeable compliance responses would coordinate with State or local land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or

governing body must follow all applicable environmental regulations as part of approval of a project for development.

- Based on the results of the environmental review, proponents shall implement all feasible mitigation to reduce or substantially lessen the potentially significant air quality impacts of the project.

- Project proponents shall apply for, secure, and comply with all appropriate air quality permits and rules for project construction from the local agencies with air quality jurisdiction and from other applicable agencies, if appropriate, prior to construction mobilization.

- Project proponents shall comply with the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) (including New Source Review and Best Available Control Technology criteria), if applicable.

- Project proponents shall comply with local plans, policies, ordinances, rules, and regulations regarding air quality-related emissions and associated exposure (e.g., construction-related fugitive PM dust regulations, indirect source review, and payment into offsite mitigation funds).

- For projects located in PM nonattainment areas, project proponents shall prepare and comply with a dust abatement plan that addresses emissions of fugitive dust during construction and operation of the project.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 3-1, it is possible that significant impacts on air quality resources could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related air quality effects resulting from compliance responses associated with the Proposed Amendments would remain **significant and unavoidable**.

Impact 3-2: Long-Term Operational-Related Effects on Air Quality

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy

storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

The Cap-and-Invest Program and the Proposed Amendments are designed to cost-effectively reduce statewide GHG emissions and were not specifically developed to address the criteria pollutant emissions that cause health impacts. The Cap-and-Invest program results in air emissions decreases as a co-benefit of reducing GHG emissions, as further discussed below in this section. Many other CARB programs also work together to reduce criteria pollutants and TACs across the state. The Cap-and-Invest Program's market mechanism reduces emissions statewide but does not directly limit emissions for any specific facility or sub-region within the state. The authority to address criteria air pollutant emissions from a given individual stationary source largely rests with local air districts, which oversee local permitting and air pollutant regulations in support of meeting State and Federal Clean Air Act standards (discussed in detail in Attachment A to this Draft EIA). The Proposed Amendments do not change or limit the existing authority of local air districts for addressing local permitting and air pollutant regulations. In addition, AB 617 (C. Garcia, Chapter 136, Statutes of 2017) recognized the need for the State to continue to identify and effectively address concerns related to local air quality impacts, especially in the State's most vulnerable communities, and to provide more direct tools to assist the State and air districts in improving air quality. CARB has established the Community Air Protection Program and is taking comprehensive action with air districts, communities, and other interested parties to achieve AB 617 requirements. However, by imparting an economy-wide price on the combustion of fossil fuels, the Cap-and-Invest Program disincentivizes fossil fuel combustion at covered facilities and supports the compliance responses identified above.

The 2010 FED, and 2016 and 2018 Cap-and-Invest EAs considered the possibility that some covered entities might increase operation of specific equipment in response to reduced operations at other facilities, which could increase localized emissions in some areas. Similarly, CARB has considered the possibility that some covered entities might increase operation of specific equipment in response to reduced operations at other facilities in connection with the Proposed Amendments. Notably, two external research studies have examined the question of whether the Program has led to more

concentrated criteria pollutant emissions, and these studies have found that, across facilities and the timeline of implementation, emissions have decreased near facilities regulated by the Program. For example, a 2023 study from Hernandez-Cortes and Meng (Hernandez-Cortes and Meng 2023) examined GHG and air pollution data from 2008 through 2017 and found that, since the Cap-and-Invest Program took effect, air quality in disadvantaged communities improved more than air quality in wealthier, less polluted neighborhoods, although disparities still persist.[9] Additionally, a 2022 report by the Office of Environmental Health and Hazard Assessment (OEHHA) found that, through 2017, the greatest beneficiaries of reduced emissions from facilities subject to the Cap-and-Invest Program have been disadvantaged communities and communities of color in California (OEHHA 2022). The results of both studies reflect the existing geographic distribution of large, covered facilities, which are disproportionately located in or near disadvantaged communities and produce significant amounts of air pollution through the on-site combustion of fossil fuels. The OEHHA report also emphasizes that the relationship between GHGs and co-pollutants was highly variable by year and by sector, and that a wide pollution gap still remains between disadvantaged and non-disadvantaged communities.[10] While CARB cannot entirely dismiss the possibility that localized emissions increases could occur, to date, the available data have not demonstrated that implementation of the Cap-and-Invest Program increases local air pollution. CARB continues to believe that resulting localized air impacts are extremely unlikely and, as described below, the Proposed Amendments' overall air quality impacts would be beneficial. Based on the availability of data and existing studies, the history and purpose of the program, and the reduction of combustion emissions likely necessary for compliance with the Proposed Amendments, CARB expects the Proposed Amendments' long-term operational-related air quality impacts would generally be beneficial.

Nevertheless, the Proposed Amendments would not eliminate all emissions everywhere and would not establish emissions limits at individual facilities. The Proposed Amendments would result in hydrogen combustion at industrial facilities and electricity generators. It is technologically feasible for hydrogen combustion to produce criteria air pollutants similar to natural gas combustion if the combustion equipment is adjusted appropriately (Leicher et al. 2017). The Proposed Amendments may also result in

[9] The study examines the pollution concentration gaps between disadvantaged and other communities. This pollution concentration gap, referred to in the study as an environmental justice gap or "EJ gap", changed following the 2013 introduction of California's cap-and-trade program. Based on 2008 through 2017 emission data, the study shows that the Cap-and-Trade Program lowered GHG, $PM_{2.5}$, PM_{10}, and NOx emissions by 3–9% annually between 2012–2017 for sample facilities regulated by the Cap-and-Trade Program. Using a pollution dispersal model to characterize resulting spatial changes in pollution concentrations, the study demonstrates that the program caused the EJ gaps from these facilities to narrow – not increase – in $PM_{2.5}$, PM_{10}, and NOx by 6–10% annually.

[10] As stated in the executive summary of the report, one of the report's major findings indicates that the greatest beneficiaries of reduced emissions from both heavy-duty vehicles and facilities subject to the Cap-and-Trade Program have been in communities of color and in disadvantaged communities in California, as identified by CalEnviroScreen (CES). This has reduced the emission gap between communities with high and low CES scores, but a wide gap still remains.

additional combustion of biomass and biomass-derived fuels at certain facilities. The combustion of hydrogen, biomass, and biomass derived fuels require carefully controlled combustion conditions and control technology to minimize potentially adverse health impacts. While project design and mitigation requirements can be developed to address these impacts, as mentioned above, the authority to determine project-level impacts and require project-level mitigation lies with the permitting agency or agencies for individual projects.

Increased need for on- and off-site battery storage systems to facilitate the GHG emissions reduction objective of the Proposed Amendments could result in an increase in lithium, graphite, nickel, cobalt, manganese, copper, chromium, zinc, and aluminum mining and exports from countries with raw mineral supplies. Some lithium demand may be met domestically as extraction activities increase within the State, particularly new mining activities within the Salton Sea. Additionally, as discussed under Impact 12-1, "Short-Term Construction-Related and Long-Term Operation-Related Effects to Mineral Resources," some nickel demand could be met domestically; however, the majority of nickel is produced outside of the U.S. Also, the majority of cobalt is mined outside of the U.S.

The Proposed Amendments could result in increased industrial facility electrification. The electricity needed to power an electrified industrial process could be provided by California's electricity grid or on-site renewable electricity. Air pollutant emissions associated with producing electricity for newly electrified industrial processes would vary depending on the relative shares of zero/low-emission sources (e.g., hydro, wind, solar) and higher emission sources (e.g., natural gas-fired power plants) that are used. The relative shares of fuel sources would change over time (and even vary hour-to-hour depending on electricity demand and time of a day).

California's Renewables Portfolio Standard (RPS), which was established by legislation enacted in 2002, with its most recent targets set by SB 100, required California's load-serving entities to procure 60% of their retail electricity from eligible renewable sources by 2030 and 100% of retail sales by 2045. SB 1020 revised the SB 100 zero carbon policies to include interim policies for the State's 100% clean energy goal in 2045 and accelerates the date by which State agencies must achieve 100% clean energy use. Below are the current renewable energy targets:

- 90% of retail sales by December 31, 2035;
- 95% of retail sales by December 31, 2040;
- 100% of retail sales by December 31, 2045.

According to the California Energy Commission, in 2024, approximately 62% of all California consumed electricity was sourced from renewable sources (CEC 2025a). As grid electricity becomes cleaner over time to meet the RPS targets, emission reductions from use of electricity compared to fossil-fuel powered industrial activities (e.g., cement manufacturing, food processing, petroleum and biofuel refining) will deepen accordingly.

As such, a shift to electrified industrial processes would yield increasing operational air quality benefits over time as the State's electrical grid becomes more renewable pursuant to the RPS. Over the time the Proposed Amendments are implemented, emissions would continue to decrease, relative to existing conditions.

Compliance responses that reduce GHG emissions would be expected to provide co-benefits in terms of reductions of criteria air pollutant and TACs. Statewide, GHG, criteria air pollutants, and TAC emissions are expected to decrease as a result of the Cap-and-Invest Program in combination with other complementary policies. This would be a beneficial effect on air quality, as found in prior environmental analyses including the 2016 and 2018 Cap-and-Invest EAs. By imparting an increased price on covered GHG emissions due to increased stringency, staff analysis forecasts that the Cap-and-Invest Program, as modified by the Proposed Amendments, would continue to result in regional and local air quality improvements. This is because facilities and operations in sectors covered by the Cap-and-Invest Program would make additional investments, relative to the Current Regulation, including efficiency improvements or switching to cleaner technologies, as described in the "Compliance Responses" section in Chapter 2.0 above.

The staff analysis to quantify criteria air pollutant emission benefits draws from 2022 Scoping Plan Update modeling data for the Scoping Plan Scenario.[11] The staff analysis applies applicable emissions factors to convert the reduced fuel use to expected reductions in two key criteria air pollutants, $PM_{2.5}$ and NOx.[12] **Figure 2** and **Figure 3** show the potential criteria air pollutant reductions for all covered sectors, both under the Proposed Amendments scenario and under the Current Regulation. These criteria air pollutant reductions are relative to baseline levels.[13] The year 2023 was used to evaluate criteria air pollutant emissions to provide a consistent approach and align with the analysis of GHG emissions benefits, where 2023 is the latest data available for GHG emissions. The figures show that the Cap-and-Invest Program, in combination with other complementary policies, supports an overall decrease in NOx and $PM_{2.5}$ relative to 2023 baseline levels. The Cap-and-Invest Program with implementation of the Proposed Amendments is anticipated to result in additional statewide emissions reductions beginning at an estimated 19 tons per day NOx in 2027 and increasing to 33 tons of NOx reductions per day in 2045; and beginning at approximately 2.1 tons of $PM_{2.5}$ reductions per day in 2027 and increasing to around 5 tons per day in 2045 when compared to the Current Regulation. These air quality benefits are supported by complementary climate

[11] The Proposed Amendments, in combination with other complementary policies, are designed to align with the GHG emissions reduction targets in the 2022 Scoping Plan Update. The sector-level GHG emissions for the Proposed Amendments align with the modeled data for the Scoping Plan Scenario. The Current Regulation's sector-level GHG emissions are scaled from the Scoping Plan Scenario values to meet the current 2030 target of reducing GHG emissions 40% below 1990 levels by 40%, to align with the post-2030 caps in the Current Regulation, and to reflect post-2030 GHG emissions attributed to the GHG Inventory correction. Fuel combustion under the Current Regulation scenario is assumed to be proportional to the GHG emissions at the sector level.

[12] The approach and emission factors are described in Chapter 3 of the 2022 Scoping Plan Update (CARB 2022a).

[13] Baseline levels are projected for 2023 using the same Scoping Plan Scenario modeling data and emissions factors from CARB's 2022 Scoping Plan Update.

policies, and thus the numbers here should be taken as an upper bound of potential reductions attributed to the Proposed Amendments.

Figure 2. NOx emissions reductions for Proposed Amendments and Current Regulation, relative to baseline emissions.

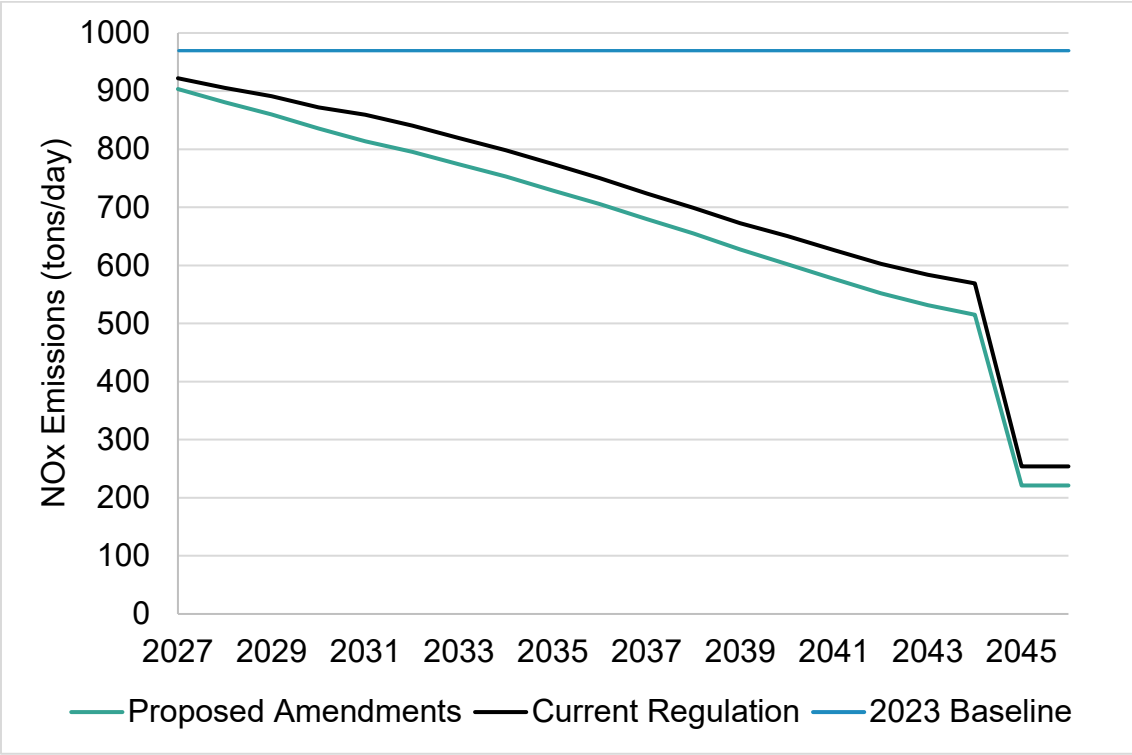
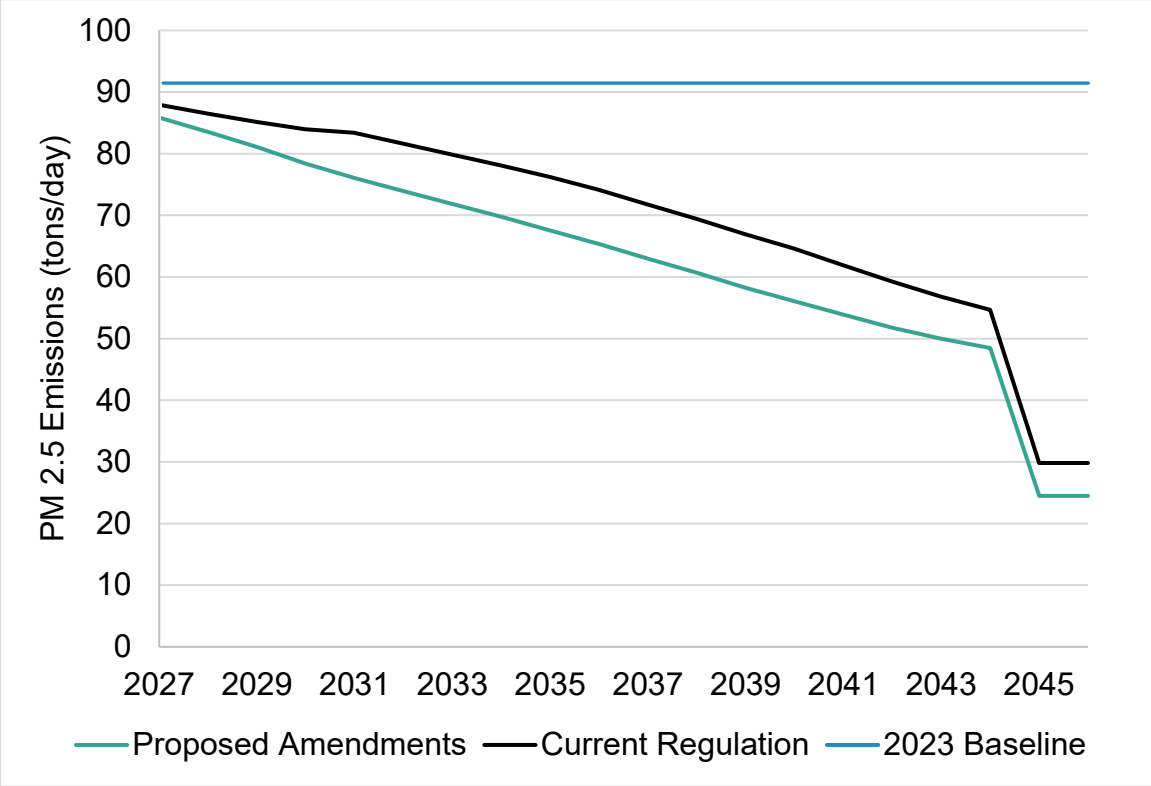


Figure 3. $PM_{2.5}$ emissions reductions for Proposed Amendments and Current Regulation, relative to baseline emissions.



Overall, the staff analysis shows the Proposed Amendments are expected to reduce criteria air pollutant emissions across the state. These emissions reductions are expected to lead to net improved health outcomes across the state, as described in Section IV.C. of the ISOR. And while CARB cannot rule out the potential for some increases in local emissions associated with the compliance responses (as discussed above), on a statewide level, CARB does not believe significant localized increases are likely since any increases would likely be equivalent to or less than emission reductions associated with the Proposed Amendments.

CARB does not believe significant localized increases are likely, and anticipates overall beneficial long-term operational impacts statewide. Nevertheless, as discussed above, and in an abundance of caution and for the purposes of complete public disclosure, CARB concludes that long-term air quality impacts associated with the Proposed Amendments could be potentially significant and unavoidable.

Mitigation Measure 3-2

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to air quality. CARB does not have the authority to require implementation of mitigation related to new or modified facilities; those facilities are subject to the land use and permitting requirements of the applicable local jurisdictions. The ability to require

such measures is under the purview of jurisdictions with local or state land use approval and/or permitting authority. New or modified facilities in California would typically qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation would be identified during the environmental review process as appropriate by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. The following recognized practices are routinely required to avoid or minimize impacts on air quality:

- Proponents of new or modified facilities constructed and operated as a result of reasonably foreseeable compliance responses shall coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local jurisdiction with land use authority must determine that the environmental review process complied with CEQA and other applicable regulations, prior to project approval.

- Based on the results of the environmental review, proponents shall implement all feasible mitigation identified in the environmental document to reduce or substantially lessen the operational-related air quality impacts of the project.

- Project proponents shall apply for, secure, and comply with all appropriate air quality permits for project operation from the local agencies with air quality jurisdiction and from other applicable agencies, if appropriate, prior to commencement of project operation.

- Project proponents shall comply with the federal Clean Air Act and the California Clean Air Act (e.g., New Source Review and Best Available Control Technology criteria, if applicable).

- Project proponents shall comply with local plans, policies, ordinances, rules, and regulations regarding air quality-related emissions and associated exposure (e.g., indirect source review, and payment into offsite mitigation funds).

- For projects located in PM nonattainment areas, project proponents shall prepare and comply with a dust abatement plan that addresses emissions of fugitive dust during operation of the project.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce significant impacts. Although

unlikely after implementation of Mitigation Measure 3-2, it is possible that significant air quality impacts could still occur.

CARB does not believe significant localized increases are likely and anticipates overall beneficial long-term operational impacts. Furthermore, if impacts were to exist, they should be mitigable to a less-than-significant level by land use and/or permitting agency conditions of approval. Nevertheless, this EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that long-term operational-related air quality impacts resulting from increased operation of specific equipment in response to reduced operations at other facilities, associated with the Proposed Amendments, would remain **significant and unavoidable**.

Impact 3-3: Short-Term Construction-Related and Long-Term Operational Impacts from Odors

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Construction of projects in response to the Proposed Amendments may generate short-term odors from the use of diesel-powered construction equipment; however, the duration of these emissions would likely be short-term in nature (e.g., 6 to 12 months per project) and impacts would be localized. The extent of the significance of these impacts would be determined by the proximity of a project to sensitive receptors and the duration of construction schedule. However, there is uncertainty as to the exact location of any new facilities or modification of existing facilities. Typically, such facilities would be located in industrial or rural areas with appropriate zoning to accommodate these specific activities and construction is likely to only last 6 to 12 months per project.

Implementation of projects or modification to facilities developed in response to the Proposed Amendments would likely not result in odorous emissions because the Proposed Amendments do not include the types of land use development that local air districts identify as being major sources of odors. Sources of odor concern include

wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants. While the Proposed Amendments may regulate entities that are within these categories of odor-producing facilities, the reasonably foreseeable compliance responses to the Proposed Amendments would not result in an expansion of the operation of these facilities or new types of odor sources resulting in an increase of odors from existing sources.

Therefore, short-term construction-related and long-term operational-related odor impacts would be **less-than-significant**.

4. Biological Resources

Impact 4-1: Short-Term Construction-Related Effects on Biological Resources

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Short-term construction-related impacts on biological resources may occur. Construction of manufacturing facilities, production facilities, recycling facilities, power plants, solar fields, wind turbines, other electricity generation facilities, and infrastructure, as well as increased brine and hard rock mining, would result in ground disturbance that could adversely affect biological resources. The biological resources affected would depend on the specific location of the compliance responses, which cannot be known at this time. Construction impacts would occur through the modification of existing facilities and the development of new projects as a result of the Proposed Amendments. These impacts would occur from modifications to existing habitat including the removal, degradation, and fragmentation of riparian systems, wetlands, and/or other sensitive natural wildlife habitats and plant communities; interference with wildlife movement or wildlife nursery sites; loss of or disturbance to special-status species; and/or conflicts with local

ordinances or the provisions of adopted habitat conservation plans, natural community conservation plans, or other conservation plans or policies to protect natural resources.

New or expanded manufacturing facilities, production facilities, recycling facilities, power plants, other electricity generation facilities, and infrastructure, as well as increased hard rock mining at existing mining locations would likely occur in areas of compatible zoning (e.g., industrial). Solar fields, wind turbines, and new mining (brine and hard rock) could be sited in areas that support valuable/protected biological resources. While it is reasonable to anticipate that land use policies controlling the location of new development in connection with the Proposed Amendments would generally avoid conversion of wildlife habitat, the potential cannot be dismissed. Additionally, there are some plant and animal species that occur in developed or disturbed areas and impacts on these species would not be entirely avoided through siting project construction in industrial areas. The direct mortality of individual plants and animals could result from destruction of dens, burrows, or nests through ground compaction, ground disturbance, debris, or vegetation removal. Construction noise disturbance could cause nest or den abandonment and loss of reproductive or foraging potential around the site during construction, transportation, or destruction of equipment and existing structures.

Increased brine mining for lithium would include expansion of existing extraction facilities or construction of new facilities. The location of those facilities is not knowable, as lithium is a global commodity that can be sourced from across the globe. California is also exploring local production, including potentially in the Salton Sea area. The Salton Sea provides important feeding grounds for more than 400 species of birds including waterfowl and shorebirds during annual migration and several bird species also use the area for breeding (U.S. Fish and Wildlife Service 2024). Nesting native bird species are protected under the Migratory Bird Treaty Act and California bird protection statutes (Fish and Game Code, sections 3503, 3503.5, 3513). Impacts on nesting or foraging birds in the Salton Sea area would be similar to those described above but the magnitude of these impacts may be greater due to the high concentrations of birds at the Salton Sea.

In summary, implementation and compliance with the Proposed Amendments could result in potentially significant impacts on biological resources. Depending on the regulatory status of the species (e.g., listed as endangered under the federal or state Endangered Species Acts), and the nature of the habitat disturbance, compliance with permitting requirements under the National Environmental Policy Act, the federal or state Endangered Species Act, Migratory Bird Treaty Act, Clean Water Act Section 404, California Fish and Game Code, or related state or local laws would be required. It is expected that potential impacts on special-status species and sensitive habitats would be minimized through compliance with the aforementioned protective regulations; however, the terms of permits obtained under these regulations are unknown, as are the precise locations at which construction work would occur. Moreover, it is beyond the authority of CARB to enforce such compliance.

Short-term construction-related biological resources impacts would be potentially significant.

Mitigation Measure 4-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to biological resources. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices routinely required to avoid and/or minimize impacts on biological resources include, but are not limited to:

- Proponents of construction activities implemented in connection with reasonably foreseeable compliance responses to the Proposed Amendments would coordinate with State or local land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a project for development.

- Based on the results of the environmental review, proponents would implement all feasible mitigation to reduce or substantially lessen the potentially significant impacts on biological resources associated with the project.

- Actions required to mitigate potentially significant biological impacts may include the following; however, any mitigation specifically required for a new or modified facilities or other activities would be determined by the local lead agency:

    - Retain a qualified biologist to prepare a biological inventory of site resources prior to ground disturbance or construction. If protected species or their habitats are present, comply with applicable federal and State endangered species acts and regulations. Construction and operational planning will require that important fish or wildlife movement corridors or nursery sites are not impeded by project activities.

    - Retain a qualified biologist to prepare a delineation of onsite state or federally protected wetlands or other sensitive habitats (e.g., riparian habitat, sensitive natural communities). This survey shall be used to

establish setbacks and prohibit disturbance of riparian habitats, streams, intermittent and ephemeral drainages, and other wetlands. Wetland delineation is required by Section 404 of the Clean Water Act and is administered by the U.S. Army Corps of Engineers.

- Prohibit construction activities during the rainy season with requirements for seasonal weatherization and implementation of erosion prevention practices.
- Prohibit construction activities in the vicinity of raptor nests during nesting season or establish protective buffers and provide monitoring, as needed, to address project activities that could cause an active nest to fail.
- Prepare site design and development plans that avoid or minimize disturbance of habitat and wildlife resources.
- Prevent stormwater discharge that could contribute to sedimentation and degradation of local waterways. Depending on disturbance size and location, a National Pollution Discharge Elimination System (NPDES) construction permit may be required from the California State Water Resources Control Board.
- Prepare spill prevention and emergency response plans, and hazardous waste disposal plans as appropriate to protect against the inadvertent release of potentially toxic materials.
- Plant replacement trees.
- Establish permanent protection of suitable habitat at ratios considered acceptable to comply with “no net loss” requirements.
- Contractor will keep the site and materials organized and store them in a way to prevent attracting wildlife by not creating places for wildlife to hide or nest (e.g., capping pipes, covering trashcans and emptying trash receptacles consistently and promptly when full).

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 4-1, it is possible that significant impacts on biological resources could still occur.

Consequently, while impacts could likely be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks

a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related impacts on biological resources associated with the Proposed Amendments would remain **significant and unavoidable**.

Impact 4-2: Long-Term Operation-Related Effects on Biological Resources

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Anticipated operation-related impacts on biological resources from the reasonably foreseeable compliance responses listed above would likely occur primarily from operation of new facilities, including new sources of light and noise, and increased ground disturbing activity associated with increased mining activities associated with the increase in battery storage and renewable energy infrastructure. Long-term operation of manufacturing facilities, production facilities, recycling facilities, power plants, solar fields, wind turbines, and other electricity generation facilities, would often include the presence of workers; movement of automobiles, trucks, and heavy-duty equipment; and operation of stationary equipment. This environment would generally not be conducive to the presence of biological resources located on-site or nearby. For example, operation of new facilities, which alter the existing environment, could deter wildlife from the surrounding habitat or could impede wildlife movement through the area. Development as a result of the Proposed Amendments could also impede wildlife movement if it interrupts or is located close to existing suitable habitats. As is already the case with existing facilities, this impact would be substantial. Additionally, the operation of wind turbines could also result in an increase in bird strikes, including state or federally listed bird species. Vegetation management may be necessary to comply with fire codes and defensible space requirements, which may require tree trimming and other habitat modification that could, for example, result in species mortality or nest failure. Furthermore, operation of

facilities could result in the accidental introduction of hazardous substances to the environment which could adversely affect biological resources.

Increasing the production and usage of low-carbon fuels and renewable energy as a result of the Proposed Amendments would result in a decrease in the usage and extraction of oil and gas across the state. This reduction of fossil fuels extraction and usage would lower carbon emissions and result in a net beneficial effect to existing biological resources.

While increased mining activity would include methods with relatively small environmental footprints, hard rock and continental brine mining activities could directly alter the character of sensitive habitats that may support special-status species or serve as a wildlife corridor. Impacts could include reduction in habitat, loss of special-status species, water contamination, and conflict with a habitat conservation plan or natural community conservation plan.

Long-term operational impacts on biological resources associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 4-2

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to biological resources. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a “project” under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices routinely required to avoid and/or minimize impacts on biological resources include:

- Proponents of construction activities implemented in connection with reasonably foreseeable compliance responses to the Proposed Amendments would coordinate with State or local land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a project for development.

- Based on the results of the environmental review, proponents would implement all feasible mitigation to reduce or substantially lessen the potentially significant impacts on biological resources associated with the

project. Actions required to mitigate potentially significant biological impacts may include the following; however, any mitigation specifically required for a new or modified facility would be determined by the local lead agency.

- Prohibit vegetation management activities in the vicinity of raptor nests during nesting season or establish protective buffers and provide monitoring as needed to ensure that project activity does not cause an active nest to fail.
- Implement site design features and development plan features, such as landscape buffers, habitat replacement, and avoidance of sensitive areas, that avoid or minimize disturbance of habitat and wildlife resources.
- Prevent stormwater discharge that could contribute to sedimentation and degradation of local waterways during project operation.
- Maintain and protect, as needed, trees and permanently protected suitable habitat identified as mitigation from construction-related aspects of a project.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 4-2, it is possible that significant impacts on biological resources could still occur.

Consequently, while impacts could likely be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for a compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that long-term operational impacts on biological resources associated with the Proposed Amendments would remain **significant and unavoidable**.

5. Cultural Resources

Impact 5-1: Short-Term Construction-Related and Long-Term Operational Effects on Cultural and Paleontological Resources

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy

storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

New or expanded manufacturing facilities, production facilities, recycling facilities, power plants, other electricity generation facilities, and infrastructure, as well as increased hard rock mining at existing mining locations would likely occur in areas of compatible zoning (e.g., industrial). Solar fields, wind turbines, and new mining (brine and hard rock) could be sited in areas that support cultural or paleontological resources of significance. Regardless, there is a possibility that these activities may occur in or adjacent to a region consisting of known significant prehistoric and/or historic-era cultural resources. Additionally, while it is reasonable to anticipate that land use policies controlling the location of new industrial facilities would generally avoid areas that have not been disturbed that are known to contain or known to likely contain significant cultural resources, these areas may not always be feasibly avoided. It is also possible that ground disturbance would damage previously unknown/undocumented cultural resources. As such, it is foreseeable that known and/or undocumented cultural or paleontological resources could be unearthed or otherwise discovered during ground-disturbing and construction activities. Unique archaeological or historical resources might include stone tools, tool-making debris, stone milling tools, shell or bone items, and fire-affected rock or soil darkened by cultural activities. Historic materials might include metal, glass, or ceramic artifacts. Human remains could also be present outside of dedicated cemeteries. Finally, historic structures could be removed or damaged if present within or adjacent to a proposed construction site. Tribal cultural resources are addressed below in Section 18, “Tribal Cultural Resources.”

Additionally, paleontological resources such as fossils are among the findings that could be unearthed during ground-disturbing and construction activities.

Following construction, operation of facilities or infrastructure associated with the compliance responses would not require ground disturbance in addition to that performed during construction and modification because operation activities would occur within the footprint of the constructed or modified facility. Expanded crop production and mining activities to facilitate the production of low-carbon fuels and support on- and off-site renewable resources and battery storage systems may also occur as a result of the compliance responses. It would be expected that these activities would be carried out in areas of compatible zoning if they only involve modification or expansion of existing operations. However, new agricultural and mining activities could be introduced in areas

currently undeveloped. Regardless, there is a possibility that these activities may occur in or adjacent to a region consisting of known significant prehistoric and/or historic-era cultural resources. As discussed above, most operational activities would not have the potential to physically affect archaeological, historical, or paleontological resources. The presence of new structures or infrastructure may, however, change the visual setting of the surrounding area, which could adversely affect historic resources and districts with an important visual component. For example, although it is unlikely such a facility would be sited in a historic district, a new structure or infrastructure may not be consistent with the visual character of a historic district. As a result, operational impacts could be significant.

Therefore, short-term construction-related and long-term operational-related impacts to cultural resources associated with implementation of the Proposed Amendments would be potentially significant.

Mitigation Measure 5-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to cultural resources. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices routinely required to avoid and/or minimize impacts to cultural and paleontological resources include:

- Proponents of construction activities implemented in connection with reasonably foreseeable compliance responses to the Proposed Amendments would coordinate with State or local land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a project for development.

- Based on the results of the environmental review, proponents would implement all feasible mitigation to avoid, reduce or substantially lessen the potentially significant impacts on cultural and paleontological resources associated with the project.

- Actions required to mitigate potentially significant cultural resources impacts may include the following; however, any mitigation specifically required for a modified facility would be determined by the local lead agency.

- Retain the services of cultural resources specialists with training and background that conforms to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61.

- Regulated entities shall conduct initial scoping assessments to determine whether proposed construction activities, if any, could disturb formations that may contain important paleontological resources. Whenever possible, potential impacts to paleontological resources should be avoided by moving the site of construction or removing or reducing the need for surface disturbance. The scoping assessment shall be conducted by the qualified paleontological resources specialist in accordance with applicable agency requirements.

- Regulated entities shall define the area of potential effect (APE) for each project, which is the area where project construction and operation may directly or indirectly cause alterations in the character or use of historic properties. The APE shall include a reasonable construction buffer zone and laydown areas, access roads, and borrow areas, as well as a reasonable assessment of areas subject to effects from visual, auditory, or atmospheric impacts, or impacts from increased access.

- If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity and within a reasonable buffer zone, shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code section 7050.5 and that code enforced for the duration of the project.

- In the event that cultural resources are discovered during project activities, all work in the immediate vicinity of the find shall cease and a qualified cultural resource specialist (e.g., archaeologist, architectural historian, depending on the resource identified) meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period.

    - Coordination with State and federal agencies shall be required for guidance on consultation. Nation-to-Nation consultations with the Native American Tribes shall be required, as appropriate, based on the guidance received from the State and federal agencies.

- If a previously unknown resource is determined to be significant by the qualified archaeologist or architectural historian (i.e., because the find is determined to constitute either an historical resource, cultural resource, or a unique archaeological resource), the archaeologist shall work with the project proponent to avoid disturbance to the resource, and if complete avoidance is not possible, follow accepted professional

standards in recording any find. Preservation in place is the preferred manner of mitigating impacts to archaeological sites. For historically significant structures, if avoidance is infeasible, an appropriate documentation plan (e.g., recordation consistent with Historic American Buildings Survey [HABS] Guidelines) shall be required.

- Regulated entities shall retain the services of a paleontological resources specialist with training and background that conforms with the minimum qualifications for a vertebrate paleontologist as described in Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures, Society of Vertebrate Paleontology (Society of Vertebrate Paleontology 2024).

- Regulated entities shall conduct initial scoping assessments to determine whether proposed construction activities, if any, could disturb formations that may contain important paleontological resources. Whenever possible, potential impacts to paleontological resources should be avoided by moving the site of construction or removing or reducing the need for surface disturbance. The scoping assessment shall be conducted by the qualified paleontological resources specialist in accordance with applicable agency requirements.

- The regulated entity's qualified paleontological resources specialist shall determine whether paleontological resources would likely be disturbed in a project area on the basis of the sedimentary context of the area and a records search for past paleontological finds in the area. The assessment may suggest areas of high known potential for containing resources. If the assessment is inconclusive a surface survey is recommended to determine the fossiliferous potential and extent of the pertinent sedimentary units within the project site. If the site contains areas of high potential for significant paleontological resources and avoidance is not possible, prepare a paleontological resources management and mitigation plan that addresses the following steps:

  - A preliminary survey (if not conducted earlier) and surface salvage prior to construction.

  - Physical and administrative protective measures and protocols such as halting work, to be implemented in the event of fossil discoveries.

  - Monitoring and salvage during excavation.

  - Specimen preparation.

  - Identification, cataloging, curation, and storage.

- A final report of the findings and their significance.
- Choose sites that avoid areas of special scientific value.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 5-1, it is possible that significant impacts on cultural and paleontological resources could still occur.

Consequently, while impacts could likely be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related and long-term operational impacts to cultural resources associated with the Proposed Amendments would remain **significant and unavoidable**.

6. Energy

Impact 6-1: Short-Term Construction-Related Effects on Energy Resources

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Temporary increases in energy demand associated with new facilities and updates to existing facilities would include fuels used during construction, and gas and electricity demands. Typical earth-moving equipment that may be necessary for construction includes: graders, scrapers, backhoes, jackhammers, front-end loaders, generators,

water trucks, and dump trucks. While energy would be required to complete construction for any new or modified facilities or infrastructure projects, it would be temporary and limited in magnitude such that a reasonable amount of energy would be expended.

While all aforementioned compliance responses would require the consumption of energy resources, these actions would enable the transition to zero-emission technologies to comply with the provisions of the Proposed Amendments. Major objectives of the Proposed Amendments are to reduce GHG and air pollution emissions in the long-term and would require some energy to construct the necessary infrastructure and technical components to support this objective. Therefore, while energy demand would increase during the construction of future projects in response to implementation of the Proposed Amendments, these energy expenditures would be necessary to facilitate the actions that would result in environmental benefits such as reduced GHG and air pollution emissions, as well as improved operational energy efficiency. Therefore, short-term energy consumption would not be considered unnecessary. Moreover, energy needed to power necessary equipment would not be anticipated to generate high electrical demand beyond baseline energy load. Short-term construction-related energy impacts associated with the Proposed Amendments would be **less than significant.**

Impact 6-2: Long-Term Operational-Related Effects on Energy Resources

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Utility service providers would provide the electricity to meet the demand generated from various compliance responses to the Proposed Amendments, including those that directly result in the displacement of energy derived from the combustion of fossil fuels to electricity; however, in some cases, on-site and off-site electricity generation would be incentivized by the Proposed Amendments to meet the electricity needs of covered entities. The further electrification of the various sectors affected by the Proposed Amendments would increase local and regional energy use. The level of electricity demand generated from these actions, and the potential for a change in energy demand,

would be site-specific and would depend on the location and scale at which the electrification of these sectors would occur. Where some facilities would involve substantial electrical loads, distributed generation resources or lithium-ion storage batteries could be relied on during periods when the energy grid is experiencing peak levels of demand.

To meet the statewide targets of an 85% reduction from a 1990 statewide inventory and carbon neutrality by 2045 (AB 1279), the state will need to target emissions from several sectors including the energy and mobile source sectors. Statewide regulations such as the Low Carbon Fuel Standard aim to support GHG emissions reductions from the mobile source sector through fuel switching and the deployment of electric and zero and near-zero emission vehicles, which would replace vehicles powered by internal combustion engines. With respect to building energy, CEC continually updates the Title 24 California Building Code every three years with an overarching goal of building decarbonization and energy efficiency. The efficiency of new homes is continually improving through triennial updates to the Parts 6 and 11 of the Title 24 Building Standards Code (California Energy Code and California Green Building Standards Code), which achieve energy reductions through use of mandatory and prescriptive energy efficiency design features and green building practices. The California Energy Code is anticipated to trend towards decarbonization, or the elimination of on-site natural gas combustion to power stoves and water heaters consistent with the findings of the 2021 Integrated Energy Policy Report, which identifies decarbonization of the building sector as a major policy shift that will assist the State in meeting its long-term GHG reduction goals (i.e., reducing GHG emissions by 85% of 1990 levels and achieving carbon neutrality by 2045).

Moreover, as mandated by SB 100 and SB 1020, the State's electrical utilities are legislatively required to procure 90% and 100% of their total energy supply from eligible renewable energy sources (i.e., solar, wind, geothermal, small-scale hydroelectric, and biomass) by 2035 and 2045, respectively. The abovementioned factors combine to expand the State's electricity capacity as compared to previous years. For example, in-state energy capacity rose from 74,738 megawatts (MW) in 2012 to 89,207 MW in 2024, an increase of 19% (CEC 2025b). Additionally, as mentioned above, the California Energy Code is expected to increase the energy efficiency of buildings within the state, which would reduce energy demand generated by the building sector. While the Proposed Amendments do not include building carbonization as a primary objective, it is clear that the State has an overarching goal of electrifying the building sector which is in part driving investments in the State's electrical grid.

Historically, the state's electric grid has expanded and evolved as consumer demand for electricity services has grown. The State's electricity capacity is expected to increase as a result of an array of GHG emissions-reducing regulations and policies and renewable energy regulations and policies. In response to the regulatory mechanisms listed above, which are generally overseen by CARB and CEC, utilities are working in coordination with the California Public Utilities Commission (CPUC) to fund infrastructure expansion projects to meet this future electricity demand. CPUC is also responsible for regulating Electric Power Procurement and Generation and evaluates the necessity for additional

power generation by California utilities in both the short and long term (CPUC 2024). State agencies and electric utilities have begun proactively planning for electrical distribution upgrades and new load via statewide energy system planning processes, including the CEC's Integrated Energy Policy Report forecasting, California Independent System Operator transmission planning, and the CPUC's Integrated Resource Plan proceeding for 10-year grid enhancement strategies. The CPUC has already approved utility investments for upgrading the electric grid along with electricity rate changes to fund those investments. The CPUC opened a new proceeding to modernize and prepare the grid in anticipation of multiple distributed energy sources. With this new proceeding, the CPUC aims to evolve grid capabilities to integrate distributed energy sources.

Additional electricity capacity in the State would be achieved through improved energy efficiency, energy storage, demand response, time-of-use rate structures, the generation of renewable resources, and increased production and use of RNG and hydrogen fuels.

Depending on the facility operation, new or expanded facilities could result in an increase in vehicle mileage of workers and result in an increase in gasoline and diesel fuel consumption (or electricity) associated with worker commute trips. However, this increase in vehicle miles traveled (VMT) would facilitate meeting the goals and objectives of the Proposed Amendments, which in turn would help increase energy efficiency overall (by helping transition inefficient, fossil-fueled processes), and would, therefore, not be considered unnecessary or wasteful.

Implementation of the Proposed Amendments could result in the increased use of low CI-fuel alternatives such as RNG, which could displace natural gas and diesel fuel currently used to power electricity generators, industrial facilities, heavy-duty transportation, and other equipment. Appendix F of the CEQA Guidelines identifies the use of alternative fuels, which can be interpreted as low-carbon fuels for the purposes of this analysis, as a measure to reduce energy demand. Use of low-carbon fuels would divert energy from traditional fossil fuel-powered systems and engines to electrical systems, which, as mandated by the RPS, will become increasingly more renewable in the coming years. Arguably, through the use of alternative fuels and an increasingly more renewable energy grid, implementation of the Proposed Amendments would improve the efficiency of energy usage across the state. Furthermore, additional renewable energy resources and increased battery storage projects resulting from the Proposed Amendments would also increase the reliability of the state-wide electrical grid as it trends to being fully decarbonized.

As such, implementation of the Proposed Amendments would not result in the wasteful, unnecessary, or inefficient use of energy. Thus, long-term operation-related energy impacts would be **less-than-significant**.

7. Geology and Soils

Impact 7-1: Short-Term Construction-Related and Long-Term Operational-Related Effects on Geology and Soils

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Although it is reasonably foreseeable that construction and operational activities could occur, there is uncertainty as to the exact location of any new facilities or modification of existing facilities. Construction activities could require disturbance of undeveloped areas, such as clearing of vegetation, earth movement and grading, trenching for electricity transmission and distribution lines and pipelines, erection of new buildings, and paving of parking lots, delivery areas, and roadways. Additional disturbance could result from the increased mineral ore extraction activities which would provide raw materials to these manufacturing facilities and energy projects. These activities would have the potential to result in adverse physical effects related to geology and soils, including rupture of a known earthquake fault, strong seismic ground shaking, liquefication, landslides, and erosion. (Note that paleontological resources are addressed above under Section 5 “Cultural Resources.”)

New facilities could be in a variety of geologic, soil, and slope conditions with varying amounts of vegetation that would be susceptible to soil compaction, soil erosion, and loss of topsoil during construction. The level of susceptibility varies by location. However, the specific design details, siting locations, and soil compaction and erosion hazards for manufacturing facilities are not known at this time and would be analyzed on a site-specific basis at the project level.

The exact location where new facilities may be constructed is unknown at this level of analysis. New facilities constructed as a result of implementation of the Proposed Amendments could be located in industrial areas that would be serviced by an existing water utility and would have access to a sewer system and would therefore not be

dependent on septic systems, thus not requiring the excavation of new lines that could affect the geological character of an area. However, some locations may not be served by sewer systems and may require installation or upgrading of septic systems. Any of these improvements would need to comply with applicable zoning and building codes. Therefore, it is unlikely that new facilities would be sited on soils incapable of supporting the use of septic systems or alternative wastewater disposal systems, although this possibility cannot be ruled out at this stage.

Solar and wind projects, and newly constructed mining facilities could be built in undisturbed locations which could affect the geology of an area.

Given the inherent uncertainty in where facilities are developed and would operate in response to the Proposed Amendments, short-term construction-related and long-term operational-related effects to geology and soils associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 7-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to geology and soils. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a “project” under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices that are routinely required to avoid and/or minimize impacts to geology and soils include:

- Proponents of new or modified facilities constructed as a compliance response to the Proposed Amendments would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body would certify that the environmental document was prepared in compliance with applicable regulations and would approve the project for development.

- Based on the results of the environmental review, proponents shall implement all mitigation measures identified in the environmental document to reduce or substantially lessen the environmental impacts related to seismic instability, fault rupture, soil erosion, landslides, and loss of topsoil. Actions required to mitigate potentially significant geology and soil impacts may include the following; however, any mitigation specifically required for a new or modified facility will be determined by the local lead agency.

- Prior to the issuance of any development permits, proponents of new or modified facilities or infrastructure shall prepare a geotechnical investigation/study, which would include an evaluation of the depth to the water table, liquefaction potential, physical properties of subsurface soils including shrink-swell potential (expansion), soil resistivity, slope stability, mineral resources, seismic factors, and the presence of hazardous materials.

- Proponents of new or modified facilities or infrastructure shall provide a complete site grading plan, and drainage, erosion, and sediment control plan with applications to applicable lead agencies. Proponents will avoid locating facilities on steep slopes, in alluvial fans, and other areas prone to landslides or flash floods, or with gullies or washes, as much as possible.

- Disturbed areas outside of the permanent construction footprint shall be stabilized or restored using techniques such as soil loosening, topsoil replacement, revegetation, and surface protection (i.e., mulching).

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 7-1, it is possible that significant impacts on geology and soils could still occur.

Consequently, while impacts could likely be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term and long-term operational impacts on geology and soils associated with the Proposed Amendments would remain **significant and unavoidable**.

8. Greenhouse Gas Emissions

Impact 8-1: Short-Term Construction-Related and Long-Term Operational-Related Effects on Greenhouse Gas Emissions

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated

increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Facilities construction would require use of vehicles and equipment that would consume fuel and emit GHGs for construction activities, materials transport, and worker commutes. Construction-related GHG emissions would be temporary and last only for the duration of construction. Local agencies, such as air pollution control districts, are generally charged with determining acceptable thresholds of GHG emissions, generally measured in metric tons of carbon dioxide equivalent per year ($MTCO_2e$/year). Quantification of short-term construction related GHG emissions is generally based on a combination of methods, including the use of exhaust emission rates from emissions models, such as OFFROAD 2007 and EMFAC 2021. These models require consideration of assumptions, including construction timelines and energy demands (e.g., fuel and electricity).

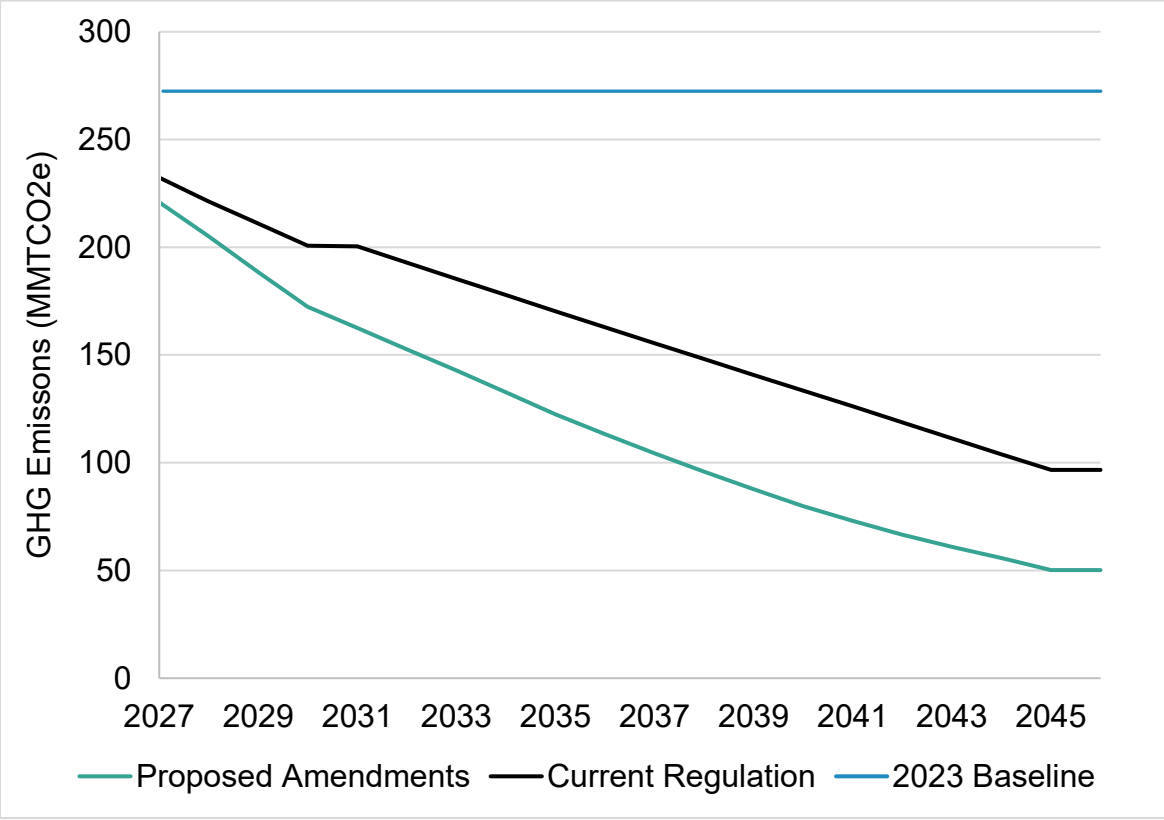
Air districts differ in their treatment of construction emissions. For instance, the Sacramento Metropolitan Air Quality Management District recommends that construction emissions be compared to a bright-line threshold of significance of 1,100 $MTCO_2e$ per year (Sacramento Metropolitan Air Quality Management District 2021). Other air districts, such as the Bay Area Air Quality Management District, do not have a numerical threshold for assessing the significance of construction-generated GHG emissions and acknowledge that construction-generated GHG emissions constitute a small fraction of a project's overall long-term GHG emissions (Bay Area Air Quality Management District 2022). Additionally, other air districts, such as the South Coast Air Quality Management District, recommend amortizing construction emissions over a 30-year period and adding these emissions to total operational emissions (South Coast Air Quality Management District 2008).

As described above and as shown in Figure 3, the Regulation and Proposed Amendments are designed to reduce statewide GHG emissions, in combination with other complementary policies, through a market mechanism that does not directly limit emissions for any specific facility or geography. However, by increasing program stringency through an increased price on covered GHG emissions, staff has designed the Proposed Amendments to result in substantial additional, annual GHG emissions reductions relative to the Current Regulation. These emissions reductions are calculated using modeled emissions from all covered sectors under the Regulation from the Scoping

Plan Scenario in the 2022 Scoping Plan Update.[14] These GHG emissions are relative to baseline levels (CARB 2024).[15] The Cap-and-Invest Program, with implementation of the Proposed Amendments, is anticipated to result in additional statewide GHG emissions reductions beginning at an estimated 11 MMTCO2e in 2027 and increasing to 47 MMTCO2e in 2045 when compared to the Current Regulation.

These GHG emissions reductions are supported by complementary climate policies as described in Appendix C of the Staff Report and thus the numbers here should be taken as an upper bound of potential reductions.

Figure 4. GHG emissions reductions for Proposed Amendments and Current Regulation, relative to baseline emissions.



The comparatively small level of GHG emissions related to construction and operation of facilities associated with the compliance responses, as described above, would be offset by the reductions in GHG emissions from the implementation of the Proposed Amendments. As a result, implementation of the Proposed Amendments would result in a **beneficial** impact related to GHG emissions.

[14] See Section 4.0.B.3. Air Quality for more detail on estimating GHG emissions for the Current Regulation.
[15] Baseline levels are the Regulation's covered emissions as reported and verified in the 2023 GHG Emissions data from the Regulation for the Mandatory Reporting of GHG emissions.

9. Hazards and Hazardous Materials

Impact 9-1: Short-Term Construction-Related Effects Related on Hazards and Hazardous Materials

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

The Proposed Amendments could require the construction of manufacturing facilities, production facilities, recycling facilities, power plants, solar fields, wind turbines, other electricity generation facilities, and infrastructure, as well as increased brine and hard rock mining. Construction activities associated with these facilities and new infrastructure as well as increased mining activities may require the transport, use, and disposal of hazardous materials. Construction activities generally use heavy-duty equipment requiring periodic refueling and lubricating fluids. Large pieces of construction equipment (e.g., backhoes, graders) are typically fueled and maintained at the construction site as they are not designed for use on public roadways. Thus, such maintenance uses a service vehicle that mobilizes to the location of the construction equipment. It is during the transfer of fuel that the potential for an accidental release is most likely. Although precautions would be taken to ensure that any spilled fuel is properly contained and disposed of, and such spills are typically minor and localized to the immediate area of the fueling (or maintenance), the potential remains for a substantial release of hazardous materials into the environment. Therefore, short-term construction-related impacts to hazards and hazardous materials associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 9-1

The Regulatory Setting in Attachment A includes, but is not limited to, applicable laws, regulations, and policies related to hazards and hazardous materials. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such

measures is under the purview of jurisdictions with discretionary local land use and/or permitting authority. New or modified facilities in California could qualify as a "project" under CEQA. The jurisdiction with primary permitting authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation may be identified during the environmental review by agencies with discretionary project approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices that are routinely required to avoid upset and accident-related impacts include:

- Proponents of new or modified facilities constructed as a compliance response to the Proposed Amendments would coordinate with local land use agencies to seek entitlements for development, including the completion of all necessary environmental review requirements (e.g., CEQA). The local land use agency or governing body would certify that the environmental document was prepared in compliance with applicable regulations and would approve the project for development.

- Proponents of new or modified facilities constructed as a compliance response to the Proposed Amendments shall comply with all applicable laws, ordinances, regulations and standards relating to hazardous material handling, fire risk mitigation, or other hazardous conditions that may apply to the facilities.

- Based on the results of the environmental review, proponents would implement all mitigation identified in the environmental document to reduce or substantially lessen the environmental impacts of the project. Actions required to mitigate potentially significant upset- and accident-related hazard impacts may include the following; however, any mitigation specifically required for a new or modified facility would be determined by the local lead agency.

    - Handling of potentially hazardous materials/wastes shall be performed by or under the direction of a licensed professional with the necessary experience and knowledge to oversee the proper identification, characterization, handling, and disposal or recycling of the materials generated as a result of the project. As wastes are generated, they shall be placed, at the direction of the licensed professional, in designated areas that offer secure, secondary containment and/or protection from storm water runoff. Other forms of containment may include placing waste on plastic sheeting (and/or covering with same) or in steel bins or other suitable containers pending profiling and disposal or recycling.

    - The temporary storage and handling of potentially hazardous materials/wastes shall be in areas away from sensitive receptors such as schools or residential areas. These areas shall be secured with chain-link fencing or similar barrier with controlled access to restrict casual

contact from non-Project personnel. All project personnel that may encounter potentially hazardous materials/wastes shall have the appropriate health and safety training commensurate with the anticipated level of exposure.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 9-1, it is possible that significant impacts related to hazards and hazardous materials could still occur.

Consequently, while impacts could likely be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that the potential short-term construction-related impacts regarding hazards and hazardous materials associated with the Proposed Amendments would remain **significant and unavoidable**.

Impact 9-2: Long-Term Operational Effects Related on Hazards and Hazardous Materials

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

There could be an increase in use of facilities that manufacture, recycle, and refurbish batteries due to increased demand. While it is reasonable to anticipate that land use policies controlling the location of new industrial facilities would generally avoid locations which are near to or impact existing or proposed airport land use plans, emergency

response plans, schools or other structures where people would be exposed to significant wildfire risk, the potential cannot be entirely dismissed. Hazardous materials are used during and created by operations of such facilities. For example, smelting is used to recycle batteries and creates hazardous emissions, although those are generally treated. Chemical leaching processes uses chemicals such as hydrochloric acid and sulfuric acid (Jacoby 2019). These activities would be more likely to occur indoors in a contained area and with proper equipment, limiting the potential effects of spills and accidents as activities involving the use of hazardous materials would occur within the confines of facilities. Risk of outdoor release of hazardous materials would be highest during the movement of raw goods to manufacturing facilities or the export of finished goods containing hazardous materials following the manufacturing process. The transport, use, and disposal of hazardous materials would be required to comply with all applicable federal, State, and local laws that would reduce the potential for accidents and require certain actions should a spill or release occur; however, the potential remains for the release of hazardous materials into the environment.

Implementation of the Proposed Amendments could result in an increase in demand for lithium graphite, cobalt, nickel, copper, manganese, chromium, zinc, platinum, and aluminum mining. Mining of these metals is currently sourced from hard rock mining. Lithium ore from rock sources is primarily produced from spodumene, a lithium/aluminum/silicate mineral. Lithium is corrosive and can cause respiratory issues when inhaled as dust leading to fluid build up in the lungs and contact with eyes can cause blindness.

Cobalt is generally obtained from the minerals cobaltite and smaltite (cobalt arsenide); other cobalt-bearing minerals include erythrite, glaucodot, and linnaeite (cobalt sulfide). Cobalt can sometimes contain radioactive uranium and mines using sulfuric acid to process cobalt ore may be subjected to dangerous vapors harmful to miners. Nickel is obtained from two main types of deposits from the mineral garnierite. Exposure to nickel can cause cancer, cardiovascular and kidney disease, lunge fibrosis, and other health problems.

Most of the world’s copper comes from the minerals chalcopyrite and chalcocite. Exposure to copper dust can irritate the eyes, nose, and mouth, as well as cause dizziness, nausea, headaches, and gastrointestinal distress. Manganese is present in many minerals, though generally obtained from the mineral pyrolusite and romanechite. Extraction of manganese can be harmful to the lungs, liver, kidneys and central nervous system. Similar to manganese, chromium is found in several minerals, but most significantly in chromite. Mining of chromium can also result in harmful effects to the eyes, skin, blood, and respiratory system. Zinc sulphide or sphalerite is the most common mineral containing zinc. Inhalation of zinc can cause chills, fever, excessive sweating, headaches, chest tightness, and cough. Platinum is most commonly found in cooperite. The most common aluminum ore is found in bauxite. Exposure to platinum and aluminum dust can cause pulmonary and respiratory illness.

These minerals are typically harvested through the hard rock mining process, which can be hazardous to workers through the release of harmful constituents in addition to desired

materials, such as asbestos, radioactive gases, arsenic, and mercury. Moreover, the refinement of these compounds may expose workers to harmful chemicals.

Lithium is also increasingly extracted through brine mining. Salt brine sources include salt lakes, which are currently the main source of lithium, and geothermal brines and salt brines associated with oil deposits. Lithium is the lightest solid metal. It can be absorbed into the body by inhalation of its aerosol and by ingestion and is corrosive to the eyes, the skin, and the respiratory tract. Lithium reacts violently with strong oxidants, acids, and many compounds (hydrocarbons, halogens, halons, concrete, sand and asbestos) causing a fire and explosion hazard. In addition, lithium reacts with water, forming highly flammable hydrogen gas and corrosive fumes of lithium hydroxide. Lithium hydroxide represents a potentially substantial environmental hazard, particularly to water organisms. Implementation of the Proposed Amendments may also increase demand for platinum mining. Platinum mining can expose workers to excessive dust that can result in respiratory ailments (Sepadi et al. 2020).

Lithium metal batteries contain potentially toxic metals, such as copper and nickel, and organic chemicals, like toxic and flammable electrolytes (Zeng et al. 2015). Improper management of lithium-ion batteries could pose an environmental hazard and be of concern to public safety. There have been some cases with consumer products containing lithium-ion batteries catching fire, as well as instances of large-scale battery installations igniting. Once ignited, the resulting fires can be especially difficult to extinguish as temperatures can rapidly increase to up to 500 degrees Celsius (932 degrees Fahrenheit) as a result of interactions between a battery's cathodes and anodes, and water is an ineffective extinguisher (Battery University 2022). The likelihood to overheat or ignite is increased if the batteries are poorly packaged, damaged or exposed to a fire or a heat source. However, when packaged and handled properly, lithium-ion batteries pose no environmental hazard (79 Fed. Reg. 46011, 46032). For comparison, ICEs do sometimes result in fires and other hazards; therefore, switching to battery power would not likely result in increased fire risk.

Large scale lithium-ion battery installations are also prone to risks of ignition. The potential for ignition can be avoided through various safety protocols. Fire risk assessments for large scale lithium-ion batteries are typically conducted and include measures such as cover handling, storage, use and charging, where appropriate, with consideration of the requirements of the Dangerous Substances and Explosive Atmospheres Regulation (DSEAR) recognizing the potential risk to people from energy-releasing events such as fires, explosions, and thermal runaway. Lithium-ion batteries are also at less risk of ignition in dry and cool conditions.

The design of lithium-ion batteries and compliance with regulations are sufficient to reduce adverse impacts associated with hazards and hazardous materials. An increase in demand for lithium-ion batteries could result in increased recycling, refurbishment, or disposal of lithium-ion batteries. However, any increased rates of disposal of lithium-ion batteries would need to comply with California law, including but not limited to California's Hazardous Waste Control Law and implementing regulations. Compliance with the appropriate federal and state laws governing the handling of potentially hazardous

materials would be sufficient to minimize the risks from lithium-ion batteries because they ensure adequate handling and disposal safeguards to address these risks.

Although some increased risk associated with hazardous materials could result, the risk is not such that a major accidental release or fire would be likely at a scale that could deplete emergency responders or obstruct emergency response. Therefore, increased demand for public services related to emergency responders is not anticipated and there would be no impact on an adopted emergency response or evacuation plan.

The Proposed Amendments could also result in a decrease in oil and gas extraction. During the extraction process, workers are subject to harmful pollutants. Workers who use hazardous chemicals during work processes, especially during hydraulic fracturing, might be exposed to hazardous byproducts of oil and gas drilling. The degree of potential hazard depends on individual chemical properties and toxicity, but possible hazards include chemical burns from caustic substances and inhalation of toxic vapors. All employers with hazardous chemicals in their workplaces are required to have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately. Establishing effective engineering controls and work practices can reduce potential worker overexposures. Nevertheless, works are often exposed to harmful concentrations of diesel particulate matter, hydrogen-sulfide gas, naturally occurring radioactive material, and hydrocarbon gases and vapors. Decreased oil and gas extraction as a result of implementation of the Proposed Amendments would directly result in a decrease in the potential for workers to be exposed to these harmful substances.

Nevertheless, for the reasons described above, overall long-term operational impacts related to hazards and hazardous materials associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 9-2: Implement Mitigation Measure 9-1

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 9-2, it is possible that significant impacts related to hazards and hazardous materials could still occur.

Consequently, while impacts could be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that the potential long-term operation-related impacts regarding hazards and hazardous materials associated with the Proposed Amendments would remain **significant and unavoidable**.

10. Hydrology and Water Quality

Impact 10-1: Short-Term Construction-Related Effects on Hydrology and Water Quality

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

The Proposed Amendments could require the construction of manufacturing facilities, production facilities, recycling facilities, power plants, solar fields, wind turbines, other electricity generation facilities, and infrastructure, as well as increased brine and hard rock mining. Construction activities associated with these facilities and new infrastructure as well as increased ground disturbing activities may require soil disturbing activities, such as clearing of vegetation, earth movement and grading, trenching for utility lines, erection of new buildings, and paving of parking lots, delivery areas, and roadways. Specific construction projects would be required to comply with applicable erosion, water quality standards, and waste discharge requirements (e.g., NPDES, Stormwater Pollution Prevention Plan). Although precautions would be taken to limit the amount of ground disturbing activities, the potential remains for a substantial increase in activities that affect erosion, water quality standards, and waste discharge. Therefore, short-term construction-related effects to hydrologic resources associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 10-1

The Regulatory Setting in Attachment A includes applicable laws and regulations regarding hydrology and water quality. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a “project” under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is

required to review the proposed action for compliance with CEQA. Project -specific impacts and mitigation measures would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices that are routinely required to avoid and/or mitigate hydrology and water quality-related impacts include the following:

- Proponents of new or modified facilities constructed because of reasonably foreseeable compliance responses to the Proposed Amendments would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body would certify that the environmental document was prepared in compliance with applicable regulations and would approve the project for development.

- Based on the results of the environmental review, proponents shall implement all feasible mitigation identified in the environmental document to reduce or substantially lessen the potentially significant impacts of a project. Actions required to mitigate potentially significant hydrology and water quality impacts may include the following; however, any mitigation specifically required for a new or modified facility would be determined by the local lead agency. Project proponents shall implement the following measures as applicable:

  - Implement Best Management Practices to reduce sedimentation and pollution of surface waters, such as installation of silt fencing around the perimeter of active construction areas, sediment traps, revegetation, and rock and gravel cover.

  - Train construction workers for proper response to hazardous materials spills as well as responsibilities for maintaining BMPs on site.

  - Drainage plans for runoff shall be designed to contain adequate capacity for projected flows on site.

  - Avoid filling of waters of the United States and waters of the State to the extent feasible. If activities require a waste discharge requirement or Section 401 Water Quality Certification, comply with all avoidance, reduction, and compensatory measures.

- Under the oversight of the local lead agency, prior to issuance of any construction permits, the proponents for the proposed project shall prepare a stormwater drainage and flood control analysis and management plan. The plans will be prepared by a qualified professional and will summarize existing conditions and the effects of project improvements, and will include all appropriate calculations, a watershed map, changes in downstream

flows and flood elevations, proposed on- and off-site improvements, features to protect downstream uses, and property and drainage easements to accommodate downstream flows from the site. Project drainage features will be designed to protect existing downstream flow conditions that will result in new or increased severity of offsite flooding.

- Project proponents shall establish drainage performance criteria for off-site drainage, in consultation with county engineering staff, such that project-related drainage is consistent with applicable facility designs, discharge rates, erosion protection, and routing to drainage channels, which could be accomplished by, but is not limited to: (a) minimizing directly connected impervious areas; (b) maximizing permeability of the site; and (c) stormwater quality controls such as infiltration, detention/retention, and/or biofilters; and basins, swales, and pipes in the system design.

- The project proponent shall design and construct new facilities to provide appropriate flood protection such that operations are not adversely affected by flooding and inundation. These designs will be approved by the local or State land use agency. The project proponent will also consult with the appropriate flood control authority on the design of offsite stream crossings such that the minimum elevations are above the predicted surface-water elevation at the agency's designated design peak flows. Drainage and flood prevention features shall be inspected and maintained on a routine schedule specified in the facility plans, and as specified by the county authority.

- As part of subsequent project-level planning and environmental review, the project proponent shall coordinate with the local groundwater management authority and prepare a detailed hydrogeological analysis of the potential project-related effects on groundwater resources prior to issuance of any permits. The proponent shall mitigate for identified adverse changes to groundwater by incorporating technically achievable and feasible modifications into the project to avoid offsite groundwater level reductions, use alternative technologies or changes to water supply operations, or otherwise compensate or offset the groundwater reductions.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 10-1, it is possible that significant impacts on hydrology and water quality could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance

purposes, that short-term construction-related effects to hydrology and water quality associated with the Proposed Amendments would remain **significant and unavoidable**.

Impact 10-2: Long-Term Operational-Related Effects on Hydrology and Water Quality

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Implementation of the Proposed Amendments would result in increased demand for lithium-ion and NiMH batteries, which would accelerate the market for mined resources, lithium, cobalt, and nickel for example. Mining of hard rock would require the use of conventional mining practices including the creation of underground mines and open pits, which would result in the removal of organic material (e.g., bedrock, vegetation). Additionally, lithium can be collected from continental brines found in various basins. Salty groundwater is pumped into lagoons where it undergoes evaporation producing salts containing lithium compounds. This process could result in overdrafting of groundwater as well as groundwater contamination from metals such as antimony and arsenic.

Mineral extraction and mining activities within the U.S. would be required to comply with the provisions of the Clean Water Act and the natural resource protection and land reclamation requirements of the appropriate State and federal land managers. For instance, the U.S. Bureau of Land Management and U.S. Forest Service mining permit conditions contain protections for hydrologic resources and require mining reclamation standards. However, the metals necessary for battery technology are commonly obtained from areas outside of the U.S., where State and U.S. laws and regulation are not enforced. Thus, water quality impacts related to mining could occur because of implementation of the reasonably foreseeable compliance responses associated with the Proposed Amendments.

Under the Proposed Amendments, the demand for oil and gas extraction activities could decrease. Oil and gas extraction can produce substantial adverse effects to hydrology.

For instance, fracking requires the use of millions of liters of water and consequently millions of liters of wastewater, which can contaminate groundwater with toxic chemical compounds (European Parliament 2012). As of June 2015, U.S. EPA had identified 1,173 known chemicals used in the fracking industry. Additionally, accidental release of oil or gas and related wastewater (e.g., spills from pipelines or trucks, leakage from wastewater ponds or tanks) can introduce toxicants, radionuclides, and dissolved metals, and affect the salinity of local drinking water supplies (Konkel 2016). Through implementation of the Proposed Amendments, the aforementioned effects to hydrologic resources would be reduced as zero-emission technologies displace use of oil and gas in large sections of the economy.

New facilities constructed as a result of implementation of the Proposed Amendments could have long-term effects on hydrologic conditions and characteristics. Depending on the location of these facilities, the physical alterations caused by these facilities could produce long-term effects to runoff patterns and natural drainage, impede or reroute natural flood patterns. As such, operation of new facilities could have long-term effects related to the permanent introduction of new surfaces that could alter the existing drainage pattern of a project site or area. These impacts would be potentially significant.

As such, long-term operational-related effects to hydrology and water quality would be potentially significant.

Mitigation Measure 10-2: Implement Mitigation Measure 10-1

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 10-2, it is possible that significant impacts on hydrology and water quality could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that long-term operational-related impacts to hydrology and water quality under the Proposed Amendments would remain **significant and unavoidable**.

11. Land Use and Planning

Impact 11-1: Short-Term Construction-Related and Long-Term Operation-Related Effects on Land Use and Planning

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency

improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Short-term construction-related effects on land use and planning associated with implementation of the Proposed Amendments may not be consistent with existing and planned land uses. The environmental consequences of land use changes are considered in their respective sections of the Draft EIA.

Construction and operation of new manufacturing, disposal, and recycling facilities may require the conversion of non-industrial land uses to industrial land uses. Potential environmental effects associated with land use change on agriculture and forestry, biological resources, geology and soils, and hydrology and their related mitigation measures are discussed in further detail in their respective section of this Draft EIA.

New or expanded battery manufacturing facilities would be subject to local zoning ordinances and would generally be located on sites planned for those types of facilities, which are typically placed apart from residential communities and would not typically divide an established community. Also, projects that are more likely to divide an established community tend to be linear (e.g., new highway, railroad). New transmission lines to support electrification and pipelines for low-carbon fuels would also not typically divide an established community because they are generally either undergrounded or strung on lines and therefore do not obstruct travel or lines of sight between areas of the community. Therefore, the Proposed Amendments would not have the potential to divide a community and would have a less than significant effect.

Nevertheless, as discussed in Chapter 4.0, Sections 2, “Agricultural and Forestry Resources,” 4, “Biological Resources,” 7, “Geology and Soils,” and 10, “Hydrology and Water Quality,” potential environmental effects associated with land use change would be potentially significant. As such, land use and planning impacts would be potentially significant.

Mitigation Measure 11-1: Implement Mitigation Measures 2-1, 4-1, 7-1, and 10-1.

Mitigation Measure 2-1 includes recognized practices to reduce impacts to agricultural and forestry resources through the avoidance of siting new facilities on lands designated as Important Farmland (State defined Prime Farmland, Farmland of Statewide

Importance, and Unique Farmland) as defined by the Farmland Mapping and Monitoring Program as well as important forest or timberland.

Mitigation Measure 4-1 includes recognized practices to reduce impacts to biological resources through requirements for future project proponents to conduct biological assessment by a qualified biologist. Once a biological assessment has been performed, appropriate mitigation may be developed and implemented by a project proponent.

Mitigation Measure 7-1 includes recognized practices to reduce impacts to geology and soils by directing future project proponents to perform as assessment of geotechnical investigation/study, which would look at the existing water table, liquification potential, physical properties of subsurface soils, soil resistivity, slope stability, mineral resources, and the presence of hazardous material. Site specific mitigation would be prepared to reduce potentially significant impacts to geology and soils.

Mitigation Measure 10-1 similarly includes recognized practices to reduce impacts to hydrologic resources including the development of Best Management Practices, procural of applicable permits, and avoidance of impacts through formal mitigation.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 11-1, it is possible that significant impacts related to land use conversions could still result in significant effects on various resource areas.

Consequently, while impacts could be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that the potential short-term construction-related and long-term operation-related impacts related to land use conversions associated with the Proposed Amendments would remain **significant and unavoidable**.

12. Mineral Resources

Impact 12-1: Short-Term Construction-Related and Long-Term Operation-Related Effects on Mineral Resources

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy

storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

These compliance responses include some potential for increased mining of various metals and other natural resources that currently are used in manufacturing of equipment, including in on- and off-site renewable energy electricity generating systems and storage systems. Minerals used in renewable energy generators and storage systems can include, but are not limited to, lithium, graphite, cobalt, nickel, copper, manganese, chromium, zinc, and aluminum. Additionally, the production of hydrogen fuel cells commonly requires the use of platinum. Notably, of the aforementioned metals, lithium is typically mined using brine mining, whereas the other metals are harvested using more traditional hard rock mining techniques. Where appropriate throughout this EIA, the environmental impacts associated with brine mining are disclosed, as well as the environmental impacts of hard rock mining, which is intended to capture impacts associated with increased mining of these metals (i.e., graphite, cobalt, nickel, copper, manganese, chromium, zinc, and aluminum). The relative degree to which mining activities may increase from implementing the Proposed Amendments is unknown, given the broad range of potential compliance responses and industry specific needs that may limit the role of new battery-based equipment under the Proposed Amendments, and given the wide range of existing market forces on an international scale that have resulted in the increased extraction of semi-precious metals and materials to facilitate the use of battery production for all types of products independent of the Cap-and-Invest Program (e.g., phones, computers, electric vehicles). This EIA makes a good faith effort to disclose potentially adverse environmental effects of increased mining activity, to the extent those effects are reasonably foreseeable and not speculative.

Implementation of the Proposed Amendments could have an effect on the availability of known materials because it would involve mining lithium. Owing to continued exploration, identified lithium resources have increased substantially worldwide and total about 98 million tons. In 2022, the total amount of lithium ore available in the United States was 12 million tons in the form of continental brines, geothermal brines, hectorite, oilfield brines, and pegmatites. Lithium consumption for batteries has increased substantially in recent years due to increased demand for rechargeable lithium-ion batteries, which use approximately 80% of the world's lithium production (U.S. Geological Survey 2023). As of March 2022, a domestic lithium mine is in operation in Nevada and the developer, Controlled Thermal Resources, has begun extracting lithium in the Salton Sea. Two

companies produced a large array of downstream lithium compounds in the United States from domestic or South American lithium carbonate, lithium chloride, and lithium hydroxide. From 2016 through 2019, the United States imported lithium from Argentina (55%), Chile (36%), China (5%), Russia (2%), and others (2%) (U.S. Geological Survey 2023). However, there are current initiatives at the State and federal level that are likely to influence lithium mining domestically, which includes efforts in California. Table 1 details lithium mine production and reserves by country (U.S. Geological Survey 2023).

Table 1: Lithium Mine Production and Reserves by Country

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
United States	Withheld[1]	Withheld[1]	1,000,000
Argentina	5,970	6,200	2,700,000
Australia	55,300	61,000	6,200,000
Brazil	1,700	2,200	250,000
Canada	—	500	930,000
Chile	28,300	39,000	9,300,000
China	14,000	19,000	2,000,000
Portugal	900	600	60,000
Zimbabwe	710	800	310,000
Other Countries	—	—	3,300,000
Worldwide Total (rounded and	107,000	130,000	26,000,000

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
excluding U.S. production)			

[1] Domestic production data were withheld to avoid disclosing company proprietary data.

The magnitude of reserves, shown above, is necessarily limited by many considerations, including cost of drilling, taxes, price of the mineral commodity being mined and the associated demand. In addition to the reserves described above, deposits of mineral resources are also important to consider in assessing future supplies. Furthermore, owing to continuing exploration, identified lithium resources have increased substantially worldwide. Further, due to steadily increasing demand for lithium, domestic recycling of lithium has also increased (U.S. Geological Survey 2023). As mentioned, there are efforts to increase domestic supply of lithium. Efforts to address supply chains of mineral commodities have gained substantial interest from the State and federal government, both of which have sought to address mineral independence and security. Examples of these efforts include California Assembly Bill 1657 (Garcia), Chapter 271, 2020 (AB 1657), which requires the California Energy Commission (CEC) to convene a Blue-Ribbon Commission on Lithium Extraction in California (Lithium Valley Commission) (CEC 2022). The Lithium Valley Commission is charged with reviewing, investigating, and analyzing issues and potential incentives regarding lithium extraction and use in California. At the federal level, Executive Order 14017 (Biden 2021) directed federal agencies to perform a 100-day review of "supply chain risks" for four classes of products, including high-capacity batteries (including for electric vehicles), critical and strategic minerals (including rare earths). The EO additionally directs agencies to perform year-long reviews of supply chains in six critical sectors, which includes transportation and energy. The reviews will seek to identify supply chain risks that leave the United States vulnerable to reductions in the availability and integrity of critical goods, products, and services, and will include policy recommendations for addressing such risks. The EO indicates that, among other approaches, the current administration will explore how trade policies and agreements can be used to strengthen the resilience of U.S. supply chains.

Substantial research has been done and there is a clear commitment to increasing domestic supply of lithium. As identified in the Lithium Valley Commission report described above, there is extensive potential for lithium extraction in the Salton Sea; however, it is unknown if the lithium found in the Salton Sea in itself could be sufficient to meet market demand. Based on the available evidence, CARB expects that the increase in demand that could be associated with the Proposed Amendments alone could be met by existing extraction facilities rather than requiring development of new extraction facilities (CEC 2022).

The reasonably foreseeable compliance responses associated with the Proposed Amendments could also incrementally increase the mining of graphite ore worldwide. In 2022, natural graphite was not produced in the United States; however, approximately 95 U.S. companies, primarily in the Great Lakes and Northeastern regions and Alabama and Tennessee, consumed 72,000 tons valued at an estimated $140 million. The major uses of natural graphite were batteries, brake linings, lubricants, powdered metals, refractory applications, and steelmaking. During 2022, U.S. natural graphite imports were an estimated 82,000 tons, which were about 77% flake and high-purity, 22% amorphous, and 1% lump and chip graphite. Table 2 summarizes mine production of graphite by country in 2021 and 2022 (U.S. Geological Survey 2023).

Table 2: Graphite Mine Production and Reserves by Country

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
United States	--	--	(included in world total)
Austria	500	500	(included in world total)
Brazil	82,000	87,000	74,000,000
Canada	12,000	15,000	(included in world total)
China	820,000	850,000	52,000,000
Germany	250	250	(included in world total)
India	7,000	8,300	8,000,000
North Korea	8,100	8,100	2,000,000

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
Republic of Korea	10,500	17,000	1,800,000
Madagascar	70,000	110,000	26,000,000
Mexico	2,100	1,900	3,100,000
Mozambique	72,000	170,000	25,000,000
Norway	6,290	10,000	600,000
Russia	15,000	15,000	14,000,000
Sri Lanka	3,000	3,000	1,500,000
Tanzania	--	8,000	18,000,000
Turkey	2,700	2,900	90,000,000
Ukraine	10,000	3,000	(included in world total)
Uzbekistan	110	--	7,600,000
Vietnam	5,000	5,000	(included in world total)
World Total	1,130,000	1,300,000	330,000,000

Cobalt mining may also increase as a result of implementation of the Proposed Amendments as battery production, which requires the use of cobalt, increases to support the renewable energy creation and storage. Identified cobalt resources of the United States are estimated to be about 1 million tons. Most of these resources are in Minnesota, but other important occurrences are in Alaska, California, Idaho, Michigan, Missouri, Montana, Oregon, and Pennsylvania. With the exception of resources in Idaho and Missouri, any future cobalt production from these deposits would be as a byproduct of another metal. Identified world terrestrial cobalt resources are about 25 million tons. The vast majority of these resources are in sediment-hosted stratiform copper deposits in the Democratic Republic of the Congo and Zambia; nickel-bearing laterite deposits in Australia and nearby island countries and Cuba; and magmatic nickel-copper sulfide deposits hosted in mafic and ultramafic rocks in Australia, Canada, Russia, and the United States. More than 120 million tons of cobalt resources have been identified in polymetallic nodules and crusts on the floor of the Atlantic, Indian, and Pacific Oceans. Table 3 summarizes cobalt extraction by country (U.S. Geological Survey 2023).

Table 3: Cobalt Mine Production and Reserves by Country

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
United States	650	800	69,000
Australia	5,295	5,900	1,500,000
Canada	4,361	3,900	220,000
China	2,200	2,200	140,000
Democratic Republic of the Congo	119,000	130,000	4,000,000
Cuba	4,000	3,800	500,000
Indonesia	2,700	10,000	600,000
Madagascar	2,800	3,000	100,000

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
Morocco	2,300	2,300	13,000
Papua New Guinea	2,953	3,000	47,000
Philippines	3,600	3,800	260,000
Russia	8,000	8,900	250,000
Turkey	2,400	2,700	36,000
Other Countries	4,567	5,200	610,000
Worldwide Total (rounded and excluding U.S. production)	165,000	190,000	8,300,000

The Proposed Amendments could also result in an increase in nickel mining to manufacture NiMH batteries. In 2022, the underground Eagle Mine in Michigan produced approximately 18,000 tons of nickel in concentrate, which was exported to smelters in Canada and overseas. A company in Missouri recovered metals, including nickel, from mine tailings as part of the Superfund Redevelopment Initiative. Nickel in crystalline sulfate was produced as a byproduct of smelting and refining platinum-group-metal ores mined in Montana. Table 4 below summarizes mine production of nickel by country in 2021 and 2022 (U.S. Geological Survey 2023).

Table 4: Nickel Mine Production and Reserves by Country

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
United States	18,400	18,000	370,000
Australia	151,000	160,000	21,000,000
Brazil	76,000	83,000	16,000,000
Canada	134,000	130,000	2,200,000
China	109,000	110,000	2,100,000
Indonesia	1,040,000	1,600,000	21,000,000
New Caledonia	186,000	190,000	7,100,000
Philippines	387,000	330,000	4,800,000
Russia	205,000	220,000	7,500,000
Other Countries	429,000	440,000	20,000,000
Worldwide Total (rounded and excluding U.S. production)	2,730,000	3,300,000	>100,000,000

The compliance responses to the Proposed Amendments could also increase demand for copper for the manufacture of battery technology and other electrical infrastructure. In 2022, the recoverable copper content of U.S. mine production was an estimated 1.3

million tons, an increase of 6% from that in 2021, and was valued at an estimated $11 billion, 6% less than $11.7 billion in 2021. Arizona was the leading copper-producing State and accounted for an estimated 70% of domestic output; copper was also mined in Michigan, Missouri, Montana, Nevada, New Mexico, and Utah. Copper was recovered or processed at 25 mines (19 of which accounted for 99% of mine production), 2 smelters, 2 electrolytic refineries, and 14 electrowinning facilities. Copper and copper alloy products were used in building construction, 46%; electrical and electronic products, 21%; transportation equipment, 16%; consumer and general products, 10%; and industrial machinery and equipment, 7%. Table 5 summarizes copper production by country in 2021 and 2022 (U.S. Geological Survey 2023).

Table 5: Copper Mine Production and Reserves by Country

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
United States	1,230	1,300	44,000
Australia	813	830	97,000
Canada	550	530	7,600
Chile	5,620	5,200	190,000
China	1,910	1,900	27,000
Democratic Republic of the Congo	1,740	2,200	31,000
Germany	--	--	--
Indonesia	731	920	24,000

Country	Mine Production in 2021 (Tons)	Mine Production in 2022 (Tons) (estimated)	Reserve Amount (Tons)
Japan	--	--	--
Kazakhstan	510	580	20,000
South Korea	--	--	--
Mexico	734	740	53,000
Peru	2,300	2,200	81,000
Poland	391	390	30,000
Russia	940	1,000	62,000
Zambia	842	770	19,000
Other Countries	2,850	3,400	200,000
World Total	21,200	22,000	890,000

The Proposed Amendments could also result in additional mining of manganese, chromium, zinc, and aluminum. In 2022, worldwide mine production of manganese totaled 20,000 thousand metric tons. Worldwide chromium mine production totaled 41,000 thousand metric tons in 2022. As the 23rd most common element, worldwide zinc resources are estimated to be about 1.9 billion tons (U.S. Geological Survey 2023).

Appendix G of the CEQA Guidelines considers an impact on mineral resources to be the loss of availability of a known mineral resource that would be of value to a local entity, a region, or the State. Local jurisdictions are responsible for identifying appropriate areas to protect and/or allow mining of mineral resources. Facilities developed in response to implementation of the Proposed Amendments are generally expected to be located in

areas within existing footprints or in areas with consistent zoning where original permitting and analyses considered these issues and would not preclude access to a known mineral resource. However, new mining operations could occur in areas currently undeveloped. Mining-related impacts associated with the reasonably foreseeable compliance responses of the Proposed Amendments are discussed throughout this EIA (e.g., see Aesthetics, Agriculture and Forestry Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, and Transportation). As discussed above, increased mining for various metals to facilitate on- and off-site battery storage systems and other renewable energy and electricity infrastructure is a reasonably foreseeable compliance response of the Proposed Amendments. However, the current stores of mineral resources, both domestically and internationally, would not be lost due to the Proposed Amendments alone.

Short-term construction-related and long-term operational-related effects to mineral resource availability associated with the Proposed Amendments would be **less-than-significant**.

13. Noise

Impact 13-1: Short-Term Construction-Related Effects on Noise

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Construction noise levels that could result from the implementation of new manufacturing and related infrastructure would fluctuate depending on the type, number, size, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several stages, each phase requiring a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics

of the equipment change the effect they have on the noise environment of the project site and in the surrounding community for the duration of the construction process.

To assess noise levels associated with the various equipment types and operations, construction equipment can be grouped into two primary categories, mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period to perform continuous or periodic operations. Heavy construction equipment typically involves short periods of full-power operation followed by extended periods of operation at lower power, idling, or powered-off conditions.

Additionally, when construction-related noise levels are being evaluated, activities that occur during the more noise-sensitive evening and nighttime hours are of increased concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as traffic volumes and commercial activities decrease, construction activities performed during these more noise-sensitive periods of the day can result in increased annoyance and potential sleep disruption for occupants of nearby residential uses.

The site preparation phase typically generates the most substantial noise levels because of the on-site equipment associated with grading, compacting, and excavation, which uses the noisiest types of construction equipment. Site preparation equipment and activities include backhoes, bulldozers, loaders, and excavation equipment (e.g., graders and scrapers). Construction of large structural elements and mechanical systems could require the use of a crane for placement and assembly tasks, which may also generate noise levels. Although a detailed construction equipment list is not currently available, based on this project type it is expected that the primary sources of noise would include backhoes, bulldozers, and excavators. Noise emission levels from typical types of construction equipment can range from approximately 74 to 94 A-weighted decibels (dBA) at 50 feet.

Based on this information and accounting for typical usage factors of individual pieces of equipment and activity types, on-site construction could result in hourly average noise levels of 87 dBA equivalent level measurements (L_{eq}) at 50 feet and maximum noise levels of 90 dBA maximum sound level (L_{max}) at 50 feet from the simultaneous operation of heavy-duty equipment and blasting activities, if deemed necessary. Based on these and general attenuation rates, exterior noise levels at noise--sensitive receptors located within thousands of feet from project sites could exceed typical standards (e.g., 50/60 dBA L_{eq}/L_{max} during the daytime hours and 40/50 dBA L_{eq}/L_{max} during the nighttime hours).

Additionally, construction activities may result in varying degrees of temporary ground borne noise and vibration, depending on the specific construction equipment used and activities involved. Ground borne noise and vibration levels caused by various types of construction equipment and activities (e.g., bulldozers, blasting) range from 58 – 109 vibration decibels (VdB) and from 0.003 – 0.089 inch per second (in/sec) peak particle velocity (PPV) at 25 feet. Like the above discussion, although a detailed construction

equipment list is not currently available, based on this project type it is expected that the primary sources of ground borne vibration and noise would include bulldozers and trucks. According to the Federal Transit Administration (FTA), levels associated with the use of a large bulldozer and trucks are 0.089 and 0.076 in/sec PPV (87 and 86 VdB) at 25 feet, respectively. With respect to the prevention of structural damage, construction-related activities would not exceed recommended levels (e.g., 0.2 in/sec PPV). However, based on FTA's recommended procedure for applying a propagation adjustment to these reference levels, bulldozing and truck activities could exceed recommended levels with respect to the prevention of human disturbance (e.g., 80 VdB) within 275 feet.

Thus, implementation of reasonably foreseeable compliance responses could result in the generation of short-term construction noise in excess of applicable standards or that results in a substantial increase in ambient levels at nearby sensitive receptors, and exposure to excessive vibration levels.

Short-term construction-related effects on noise associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 13-1

The Regulatory Setting in Attachment A includes, but is not limited to, applicable laws and regulations that pertain to noise. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that could be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation measures would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices that are routinely required to avoid and/or minimize noise include:

- Proponents of new or modified facilities constructed under the reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body would certify that the environmental document was prepared in compliance with applicable regulations and would approve the project for development.

- Based on the results of the environmental review, proponents would implement all mitigation identified in the environmental document to reduce or substantially lessen the environmental impacts of the project. Actions required to mitigate potentially significant noise impacts may include the

following; however, any mitigation specifically required for a new or modified facility would be determined by the local lead agency.

- Ensure noise-generating construction activities (including truck deliveries, off-road heavy duty construction equipment, pile driving, and blasting) are limited to the least noise-sensitive times of day (e.g., weekdays during the daytime hours) for projects near sensitive receptors.

- Use noise barriers, such as berms, as needed (where feasible) to limit ambient noise at property lines, especially where sensitive receptors may be present.

- Ensure all project equipment has sound-control devices no less effective than those provided on the original equipment.

- All construction equipment used would be adequately muffled and maintained.

- Use battery-powered forklifts and other facility vehicles, as needed to remain within acceptable noise levels.

- Ensure all stationary construction equipment (i.e., compressors and generators) is located as far as practicable from nearby sensitive receptors or shielded.

- Properly maintain mufflers, brakes, and all loose items on construction and operation-related vehicles to minimize noise and address operational safety issues. Keep truck operations to the quietest operating speeds. Advise about downshifting and vehicle operations in sensitive communities to keep truck noise to a minimum.

- Use noise controls on standard construction equipment; shield impact tools.

- Use flashing lights instead of audible back-up alarms on mobile equipment, if necessary to maintain acceptable noise levels.

- Install mufflers on air coolers and exhaust stacks of all diesel- and gas-driven engines.

- Equip all emergency pressure relief valves and steam blow-down lines with silencers to limit noise levels.

- Contain facilities within buildings or other types of effective noise enclosures.

- Employ engineering controls, including sound-insulated equipment and control rooms, to reduce the average noise level in normal work areas.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 13-1, it is possible that significant impacts on noise and vibration could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that the short-term construction-related effect regarding noise and vibration resulting from the construction of new facilities or reconstruction of existing facilities associated with the Proposed Amendments would remain **significant and unavoidable**.

Impact 13-2*: *Long-Term Operational-Related Effects on Noise

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Operational-related activities associated with mining for materials used in the compliance responses could produce substantial stationary sources of noise. Mechanical equipment (e.g., dozers) required to excavate bedrock and vegetation would generate noise that could be considered adverse to sensitive receptors; however, it would be expected that expansion of existing mines would not involve sensitive receptors given that mines typically are in areas zoned industrial. Also, it would be anticipated that expanded hard rock and brine mines constructed as a compliance response to the Proposed Amendments would be in areas of consistent zoning and therefore not in close proximity

to sensitive receptors. New mines introduced in previously undisturbed areas may generate operational noise exceeding local thresholds resulting in exposure of receptors to high volumes of noise.

Other sources of noise associated with implementation of the Proposed Amendments could include operation of manufacturing plants and biorefining facilities. Manufacturing activity could include on-site noise sources, including fuel-delivery and other hauling-related activities (e.g., truck unloading), fuel-handling and processing activities (e.g., conveyor system, wheeled loader, dozer), and mechanical equipment (e.g., boiler, turbine, fans, pumps). Depending on the proximity to existing noise-sensitive receptors, stationary source noise levels could exceed applicable noise standards and result in a substantial increase in ambient noise levels.

Additional electrical infrastructure may introduce new sources of noise. Transformers, which are needed to change the voltage of an input voltage to different output voltage, either increasing or decreasing voltages. Typically, transformers generate noise of between 60 to 80 dB; however, the noise level can vary depending on the transformers size. These levels of noise could cumulatively combine with other existing and future sources of noise resulting in a long-term noise impact.

Long-term operational noise effects associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 13-2: Implement Mitigation Measure 13-1

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 13-2, it is possible that significant impacts on noise and vibration could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that long-term operational noise effects associated with the Proposed Amendments would remain **significant and unavoidable**.

14. Population and Housing

Impact 14-1: Short-Term Construction-Related and Long-Term Operation-Related Effects on Population and Housing

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated

infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Construction and maintenance activities associated with new or modified manufacturing facilities, production facilities, recycling facilities, power plants, solar fields, wind turbines, other electricity generation facilities, and infrastructure, as well as increased hard rock and brine mining activities could result in additional employment; however, there is uncertainty as to the exact location or character of any new facilities. Construction activities would be anticipated to require relatively small crews, and demand for these crews would be temporary (e.g., 6 to 12 months per project). Therefore, it is anticipated that there would not be a need for substantial numbers of construction workers to relocate and that a sufficient construction employment base would likely be available.

Operation of new or modified facilities would generate varying levels of employment opportunities. The number of jobs produced would be directly related to the maintenance needs of these facilities. There is inherent uncertainty surrounding the exact locations of the new facilities. For the mining of lithium, graphite, cobalt, nickel, copper, manganese, chromium, zinc, and aluminum, the numbers of jobs produced would be directly related to the size, capacity, and, in some cases, commodity manufactured. This range could be between twenty (e.g., small feedstock processing facility) to several thousand (e.g., a potential major battery manufacturing facility); however, it would be expected that locations of these facilities would be selected such that an appropriate employment base existed to support operation or where local jurisdictions have planned for increased population and employment growth. As such, no additional housing would be required to implement the reasonably foreseeable compliance response to the Proposed Amendments.

Additionally, it is unlikely that any new facilities would be constructed in areas with existing housing because of the nature of the facilities. That is, industrial facilities would be sited in areas zoned for them. Therefore, it is unlikely the Proposed Amendment would displace existing housing.

Any additional employment needed to support the compliance response to the Proposed Amendments, including a rise in employment opportunities, would not induce a substantial increase in a community’s population beyond what was planned for in the

community's planning documents (i.e., general plan, community plan, specific plan). The project would also not likely result in removal of existing housing and would therefore not result in displacement of people or housing. As a result, short-term construction-related and long-term operational-related effects, associated with the Proposed Amendments on population and housing would be **less-than-significant**.

15. Public Services

Impact 15-1: Short-Term Construction-Related and Long-Term Operation-Related Effects on Public Services

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

An increased need for public services is generally associated with growth in population, such as increased need for fire and police protection, schools, parks, etc. (See CEQA Guidelines, Appendix G.) As discussed under Impact 14-1, the Proposed Amendments are not expected to result in a rise in employment opportunities that is great enough to substantially increase a community's population. As a result, short-term construction-related and long-term operational-related effects, associated with the Proposed Amendments on response time for fire protection, police protection, schools, parks, and other facilities would be **less-than-significant**.

16. Recreation

Impact 16-1: Short-Term Construction-Related and Long-Term Operation-Related Effects on Recreation

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency

improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Construction and operation activities as well as new or modified facilities would likely occur within footprints of existing facilities, or in areas with appropriate zoning that permit such uses and activities. Therefore, compliance responses would not displace any recreational facilities. An increased need for recreational facilities and the accelerated degradation of existing recreational facilities is associated with growth in population. As discussed under Impact 14-1, the Proposed Amendments are not expected to result in a rise in employment opportunities that is great enough to substantially increase a community's population. Therefore, new or expanded recreational facilities would not be needed, and existing facilities would not experience accelerated degradation. As a result, short-term construction-related and long-term operational-related effects associated with the Proposed Amendments on recreational facilities would be **less-than-significant**.

17. Transportation

Impact 17-1: Short-Term Construction-Related Effects on Transportation

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

State CEQA Guidelines Section 15064.3(b) identifies criteria for analyzing the transportation impacts of a project, including land use projects (Section 15064.3[b][1]) and transportation projects (Section 15064.3[b][2]). As discussed under Impact 14-1, construction activities would be anticipated to require relatively small crews, and demand for these crews would be temporary (e.g., 6 to 12 months per project) and is not expected to result in construction worker migration. Therefore, while implementation of the Proposed Amendments includes development and operation of new facilities, short-term construction would not drive development of urban areas, residential development, major employment generation, or transportation projects. As discussed throughout this EIA, including in Impact 3-1 above, predicting the precise location, timing, duration and intensity of individual projects undertaken as compliance responses to the Proposed Amendments is not possible, given the performance standard-based nature of the requirements and given that the responses depend on individual business decisions. Therefore, modeling changes to VMT during construction of the various projects undertaken in response to the Proposed Amendments is not possible at this high-level regulatory planning stage.

Although detailed information about potential specific construction activities is not currently available, it would be anticipated to result in short-term construction traffic (primarily motorized) from worker commute- and material delivery-related trips. Construction would result in some increase in localized VMT; however, this level would not be substantial and would be short-term in nature. The amount of construction activity would vary depending on the type, number, and duration of usage for the varying equipment, and the phase of construction. These variations would affect the amount of project-generated traffic for both worker commute trips and material deliveries. Depending on the amount of trip generation and the location of new facilities, implementation could conflict with applicable programs, plans, ordinances, or policies (e.g., performance standards, congestion management); and/or result in hazardous design features and emergency access issues from road closures, detours, and obstruction of emergency vehicle movement, especially due to project-generated heavy-duty truck trips. Therefore, short-term construction-related effects to transportation would be potentially significant.

Mitigation Measure 17-1

The Regulatory Setting in Attachment A includes applicable laws and regulations regarding transportation. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a “project” under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation measures would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to

reduce impacts. Recognized practices that are routinely required to avoid and/or minimize construction traffic impacts include:

- Proponents of new or modified facilities constructed will coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body will certify that the environmental document was prepared in compliance with applicable regulations and will approve the project for development.

- Based on the results of the environmental review, proponents will implement all mitigation identified in the environmental document to reduce or substantially lessen potentially significant impacts on traffic and transportation. Actions required to mitigate potentially significant traffic impacts may include the following; however, any mitigation specifically required for a new or modified facility will be determined by the local lead agency.

  - Minimize the number and length of access, internal, service, and maintenance roads and use existing roads when feasible.

  - Provide for safe ingress and egress to/from a proposed project site. Identify road design requirements for any proposed roads, and related road improvements.

  - If new roads are necessary, prepare a road siting plan and consult standards contained in federal, State, or local requirements. The plans should include design and construction protocols to meet the appropriate roadway standards and be no larger than necessary to accommodate their intended functions (e.g., traffic volume and weight of vehicles). Access roads should be located to avoid or minimize impacts to washes and stream crossings, follow natural contours and minimize side-hill cuts. Roads internal to a project site should be designed to minimize ground disturbance. Excessive grades on roads, road embankments, ditches, and drainages should be avoided, especially in areas with erodible soils.

  - Prepare a Construction Traffic Control Plan and a Traffic Management Plan.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts.

Although unlikely after implementation of Mitigation Measure 17-1, it is possible that significant impacts on transportation could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related effects to transportation associated with the Proposed Amendments would remain **significant and unavoidable**.

Impact 17-2: Long-Term Operational-Related Effects on Transportation

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Implementation of the Proposed Amendments could require the operation of new infrastructure to distribute alternate fuels (such as electricity and hydrogen) and in the operation of new and expanded facilities. Additionally, increased demand for lithium-ion storage batteries could result in an increase in lithium, graphite, cobalt, nickel, copper, manganese, chromium, zinc, platinum, and aluminum mining. As discussed in Impact 14-1, it is not anticipated that a substantial amount of new personnel would be needed to operate new facilities because such facilities would occur in unknown locations across the state rather than concentrated in one particular location. Therefore, CARB expects that a sufficient employment base would be available, indicating that VMT associated with employees may not substantially increase depending on their location. Pursuant to SB 375, CARB established GHG emissions reduction targets for metropolitan planning organizations that range from 13 to 19% by 2035. These are based on land use patterns and transportation systems specified in Regional Transportation Plans and Sustainable Community Strategies. Locations of facilities that would install new infrastructure to distribute and dispense alternative fuels cannot currently be known; therefore, the total change in VMT cannot be assessed. Many activities, such as lithium-ion and NiMH battery manufacturing, recycling, and refurbishing, would take place at existing facilities; however, long-term operations related activities associated with deliveries and

distribution of goods (e.g., low-carbon fuels) could result in the addition of new trips, which could increase regional VMT to a potentially significant level. Increased manufacturing of low-carbon fuels and RNG would introduce new trucks trips to regions that support these facilities as pipelines would likely not be available to transport low-carbon and RNG to end points wherein these fuels would be combusted.

Long-term operational-related effects to transportation would be potentially significant.

Mitigation Measure 17-2

The Regulatory Setting in Attachment A includes applicable laws and regulations regarding transportation. CARB does not have the authority to require implementation of mitigation related to increases in VMT; these must be addressed by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices that are routinely required to avoid and/or minimize transportation impacts include:

- Identify and implement road and intersection design requirements or improvements for any project that would significantly impact the safety of roads and intersections.

- Consult with and implement recommendations from local fire protection services regarding emergency access requirements.

- Prepare transportation demand management (TDM) plans that prioritize and promote use of non-automobile forms of transportation to minimize significant increases in VMT.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 17-1, it is possible that significant impacts on transportation and traffic resources could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that long-term operational-related effects to transportation associated with the Proposed Amendments would remain **significant and unavoidable**.

18. Tribal Cultural Resources

Impact 18-1: Short-Term Construction-Related and Long-Term Operational Effects on Tribal Cultural Resources

Consistent with the requirements of AB 52, on September 19, 2023, CARB issued letters to tribes that requested formal notice. Specifically, CARB issued letters to the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, the Ohlone Costanoan-Esselen Nation, the Gabrieleno/Tongva San Gabriel Band of Mission Indians, the Viejas Band of Kumeyaay Indians, the Yuhaaviatam of San Manuel Nation, and the Mechoopda Indian Tribe of Chico Rancheria. No requests for consultation were received.

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. The Proposed Amendments could result in construction of manufacturing facilities, production facilities, recycling facilities, power plants, solar fields, wind turbines, other electricity generation facilities, and infrastructure, as well as increased mining, which would require ground disturbance. New or expanded manufacturing facilities, production facilities, recycling facilities, power plants, other electricity generation facilities, and infrastructure, as well as increased hard rock mining at existing mining locations would likely occur in areas of compatible zoning (e.g., industrial). Solar fields, wind turbines, and new mining (brine and hard rock) could be sited in areas that support valuable tribal cultural resources. For this reason, there is a possibility that these activities may occur in or adjacent to a region consisting of known significant tribal cultural resources. As such, it is foreseeable that known or undocumented tribal cultural resources could be unearthed or otherwise discovered during ground-disturbing and construction activities.

Operation of facilities and infrastructure would not result in additional ground disturbance beyond that which occurred during construction and modification because operation

activities would occur within the footprint of the constructed or modified facility. Therefore, most operational activities would not have the potential to affect tribal cultural resources. Presence of new facilities and infrastructure may, however, change the visual setting of the surrounding area, which could adversely affect trial cultural resources, as determined by a California Native American Tribe. As a result, operation impacts would be potentially significant.

Therefore, short-term construction-related and long-term operational-related impacts on tribal cultural resources associated with implementation of the Proposed Amendments would be potentially significant.

Mitigation Measure 18-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to tribal cultural resources. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project specific impacts and mitigation would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices routinely required to avoid and/or minimize impacts to tribal cultural resources include:

- Proponents of construction activities implemented in connection with reasonably foreseeable compliance responses to the Proposed Amendments would coordinate with State or local land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body must follow all applicable environmental regulations as part of approval of a project for development.

- Based on the results of the environmental review, proponents would implement all feasible mitigation to reduce or substantially lessen the potentially significant impacts on tribal cultural resources associated with the project.

- Actions required to mitigate potentially significant tribal cultural resources impacts may include the following; however, any mitigation specifically required for a modified facility would be determined by the local lead agency.

    - Retain the services of tribal cultural resources specialists with training and background that conforms to the U.S. Secretary of Interior's

Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61.

- Seek guidance from the State and federal lead agencies, as appropriate, for coordination of Nation-to-Nation consultations with the Native American Tribes.

- Follow notification procedures and conduct consultation as required with California Native American Tribes under Assembly Bill (AB) 52 (including Public Resources Code Section 21080.3.1 and 21080.3.2.). Provide notice to Native American Tribes of project details to identify potential tribal cultural resources. In the case that a TCR is identified, consistent with Public Resources Code Section 21084.3(b), prepare mitigation measures that:

  - Avoid and preserve the resource in place.

  - Treat the resource with culturally appropriate dignity.

  - Employ permanent conservation easements.

  - Protect the resource.

- Regulated entities shall consult with lead agencies early in the planning process to identify the potential presence of cultural properties. The agencies shall provide the project developers with specific instruction on policies for compliance with the various laws and regulations governing cultural resources management, including coordination with regulatory agencies and Native American Tribes.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 18-1, it is possible that significant impacts on tribal cultural resources could still occur.

Consequently, while impacts could likely be reduced to a less than significant level with mitigation measures imposed by the land use and/or permitting agencies acting as lead agencies for these individual projects under CEQA, if and when a project proponent seeks a permit for compliance-response related project, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related and long-term operational impacts to tribal cultural resources associated with the Proposed Amendments would remain **significant and unavoidable**.

19. Utilities and Service Systems

Impact 19-1: Long-Term Operational-Related Effects on Utilities and Service Systems

Impacts on utilities and service systems occur over the lifetime of a project and are generally not considered to be short-term impacts.

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

Reasonably foreseeable compliance responses to the Proposed Amendments could result in increased demand for lead acid and lithium-ion and NiMH batteries for the electrification and installation of on- and off-site renewable energy electricity and storage systems. Lithium-ion and NiMH batteries may be recycled, and due to increasing demand for zero- and near-zero emission technologies, rates of lithium-ion and NiMH battery recycling have increased. In the U.S. overall, there are limited regulations for the disposal of lithium-ion and NiMH batteries; however, due to value of recovered metals (e.g., cobalt, nickel, lithium), there is incentive to collect and recycle batteries. According to current practice, typical recycling procedures (i.e., hydrometallurgical recovery, high-temperature or pyrometallurgical, and direct recycling) recover an average of approximately 97% of the materials, redirecting about 3% of waste to landfills.

Reasonably foreseeable compliance responses associated with the Proposed Amendments could result in new demand for water, wastewater, electricity, and gas services for new or modified facilities. Generally, facilities would be cited in areas with existing utility infrastructure—or areas where existing utility infrastructure is easily assessable. Nevertheless, there exists the potential that existing electrical infrastructure (e.g., transmission and distribution lines) will not be sufficient to meet the needs of expanded or new facilities requiring the construction of additional electrical infrastructure. Additionally, new pipelines would be required to facilitate the distribution of low-carbon fuels and RNG as a result of the Proposed Amendments. New or modified utility

installation, connections, and expansion would be subject to the requirements of the applicable utility providers.

Thus, long-term operational-related effects to utilities and services systems, associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 19-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to utilities and service systems. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation measures would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices that are routinely required to avoid and/or minimize utility and service-related impacts include:

- Proponents of new or modified facilities constructed because of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body would certify that the environmental document was prepared in compliance with applicable regulations and would approve the project for development.

- Based on the results of the environmental review, proponents would implement all mitigation identified in the environmental document to reduce or substantially lessen potentially significant impacts on utilities and service systems. Actions required to mitigate potentially significant utility or service-related impacts may include the following; however, any mitigation specifically required for a new or modified facility would be determined by the local lead agency.

    - Comply with local plans, policies, and permitting requirements regarding the provision of water supply, wastewater treatment, electrical systems, storm water drainage utilities, and solid waste services.

    - Where an on-site wastewater system is proposed, submit a permit application to the appropriate local jurisdiction.

    - Where appropriate, prepare a Water Supply Assessment (WSA) consistent with the requirements of Section 21151.9 of the Public

Resources Code and Section 10910 et seq. of the Water Code. The WSA would be approved by the local water agency/purveyor prior to construction of the project.

- Comply with local plans, policies, and permitting requirements regarding the provision of wastewater treatment services.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 19-1, it is possible that significant impacts on utilities and service systems could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that long-term operational-related impacts to utilities and service systems associated with the Proposed Amendments would remain **significant and unavoidable**.

20. Wildfire

Impact 20-1: Short-Term Construction-Related and Long-Term Operational-Related Effects on Wildfire

The reasonably foreseeable compliance responses to the Proposed Amendments include increased production and use of low-carbon fuels and feedstocks such as low-carbon hydrogen, renewable natural gas, and other low-carbon fuels, plus associated infrastructure; updating and electrifying on-site equipment and other efficiency improvements including process changes; increased deployment of thermal energy storage and battery storage, and manufacturing of storage systems and associated increases in mining and exports; the construction of new or expansion of existing biorefining and co-processing operations; additional combustion of biomass and biomass-derived fuels at certain facilities; the decrease in oil and gas extraction, refining, and distribution; reduced fuel use; increased recycling, refurbishment or disposal of batteries and phased-out equipment; increased use of low-carbon products and expansion and potential new development of associated facility operations; the construction and operation of new manufacturing facilities to support zero-emission technologies; and the construction and operation of new power plants, solar fields, wind turbines, and other electricity generation facilities and electricity transmission and distribution infrastructure to accommodate increased electrical demand associated with the deployment of zero-emission technologies.

In the event of an emergency, such as a wildfire, various levels of government handle evacuation coordination at the State, federal, or local agency level as appropriate. The

California Department of Forestry and Fire Protection (CAL FIRE) is responsible for coordinating wildfire response and protection within State Responsibility Areas. CAL FIRE does not have responsibility for fire response in Local Responsibility Areas or Federal Responsibility Areas, which are defined based on land ownership, population density, and land use. These areas include densely populated areas, such as cities and towns; agricultural lands; and lands administered by the federal government. In densely populated areas, local fire departments respond to fires and emergencies. Fire response on federal lands is coordinated by the appropriate federal agency. For example, on National Forest System lands, the U.S. Forest Service coordinates fire response; on lands administered by the federal BLM, the BLM coordinates fire response.

Facilities and associated infrastructure, such as facilities for the use of low-carbon fuels, would be constructed and operated within response areas for various jurisdictions and would be managed in the same manner as existing infrastructure. New or expanded manufacturing facilities, production facilities, recycling facilities, power plants, other electricity generation facilities, and infrastructure, as well as increased hard rock mining at existing mining locations, would likely occur in areas of compatible zoning (e.g., industrial). Solar fields, wind turbines, and new mining (brine and hard rock) could be sited in areas of high vulnerability to wildfire. Likewise, the increase in use at battery or fuel cell manufacturing, refurbishing, and recycling facilities would occur at existing facilities that are already under an assigned jurisdiction for fire safety. As discussed under Impact 9-1 and 9-2, compliance responses implemented under the Proposed Amendments would not create growth substantial enough to impede emergency response or affect evacuation route capacity.

Overhead powerlines associated with new infrastructure, including those lines built to support increased energy demand to accommodate increased reliance on the electrical grid, could increase the risk of wildfire ignition; however, new safety initiatives, development standards, and regulatory oversight for electric utilities have been implemented in response to numerous devastating wildfires in California in recent years. While many utilities have considered the undergrounding of existing or newly proposed electrical lines, undergrounding of electrical infrastructure presents challenges in the form of potentially adverse impacts to other resources areas (e.g., air quality, cultural and paleontological resources, biological resources, hydrologic resources, geology and soils, and hazards and hazardous resources) from trenching activities. Moreover, the undergrounding of electrical lines is inherently more costly to utilities, affecting the decision to pursue undergrounding actions.

These efforts aim to reduce the risk of wildfire ignition associated with such facilities and include implementation of wildfire mitigation plans, collaboration between utilities and CAL FIRE, and retention by CPUC of independent evaluators that can assess the safety of electrical infrastructure. Many utilities, such as Pacific Gas & Electric (PG&E) and the Sacramento Metropolitan Utility District (SMUD) have invested substantially to improve their electrical infrastructure in recent years in response to catastrophic fires that have occurred within their service areas. These include updating outdated and dangerous electrical infrastructure and trimming trees that make contact with electrical lines. It is also

commonplace for utilities to engage in planned service power shutoffs (PSPSs) during periods of high heat and wind to reduce potential ignition from electrical infrastructure.

Additionally, new facilities would be subject to the applicable chapters of the California Fire Code and any additional local provisions identified in local fire safety codes. These factors—adherence to local plans, policies, codes, and ordinances; adherence to the California Fire Code and the provisions of wildfire prevention plans; and oversight by CPUC—would substantially reduce the risk of wildfire ignitions caused by infrastructure development.

Nevertheless, given the State's recent history of wildfire and the uncertainty of the adequacy of existing electrical infrastructure, there exists the potential for significant wildfire risk from implementation of the Proposed Amendments.

Therefore, short-term and long-term operational-related effects to wildfire risk associated with the Proposed Amendments would be potentially significant.

Mitigation Measure 20-1

The Regulatory Setting in Attachment A includes applicable laws and regulations that relate to utilities and service systems. CARB does not have the authority to require implementation of mitigation related to new or modified facilities that would be approved by local jurisdictions. The ability to require such measures is under the purview of jurisdictions with local or State land use approval and/or permitting authority. New or modified facilities in California would qualify as a "project" under CEQA. The jurisdiction with primary approval authority over a proposed action is the Lead Agency, which is required to review the proposed action for compliance with CEQA. Project-specific impacts and mitigation measures would be identified during the environmental review by agencies with project-approval authority. For projects occurring in other states beyond California, other local permitting rules and environmental review requirements may apply and may also work to reduce impacts. Recognized practices that are routinely required to avoid and/or minimize utility and service-related impacts include:

- Proponents of new or modified facilities constructed because of reasonably foreseeable compliance responses would coordinate with local or State land use agencies to seek entitlements for development including the completion of all necessary environmental review requirements (e.g., CEQA). The local or State land use agency or governing body would certify that the environmental document was prepared in compliance with applicable regulations and would approve the project for development.

- Based on the results of the environmental review, proponents would implement all mitigation identified in the environmental document to reduce or substantially lessen potentially significant impacts on utilities and service systems. Actions required to mitigate potentially significant utility or service-related impacts may include the following; however, any mitigation

specifically required for a new or modified facility would be determined by the local lead agency.

- Actions required to mitigate potentially significant tribal cultural resources impacts may include the following; however, any mitigation specifically required for a modified facility would be determined by the local lead agency. These measures are derived from CAL FIRE's California Vegetation Treatment Program (CalVTP) standard project requirements (SPRs) and are not exhaustive, but may be applied at the project level.

  - **SPR AD-3: Consistency with Local Plans, Policies, and Ordinances**: The project proponent will design and implement the treatment in a manner that is consistent with applicable local plans (e.g., general plans, Community Wildfire Protection Plans, CAL FIRE Unit Fire Plans), policies, and ordinances to the extent the project is subject to them. This SPR applies to all treatment activities and treatment types, including treatment maintenance.

  - **SPR AQ-3: Create Burn Plan**: The project proponent will create a burn plan using the CAL FIRE burn plan template for all prescribed burns. The burn plan will include a fire behavior model output of First Order Fire Effects Model and BEHAVE or other fire behavior modeling simulation and that is performed by a qualified fire behavior technical specialist that predicts fire behavior and calculates consumption of fuels, tree mortality, predicted emissions, greenhouse gas emissions, and soil heating. The project proponent will minimize soil burn severity from broadcast burning to reduce the potential for runoff and soil erosion. The burn plan will be created with input from a qualified technician or certified State burn boss. This SPR applies only to prescribed burning treatment activities and all treatment types, including treatment maintenance.

  - **SPR HAZ-2: Require Spark Arrestors**: The project proponent will require mechanized hand tools to have federal- or state-approved spark arrestors. This SPR applies only to manual treatment activities and all treatment types, including treatment maintenance.

  - **SPR HAZ-3: Require Fire Extinguishers:** The project proponent will require tree cutting crews to carry one fire extinguisher per chainsaw. Each vehicle would be equipped with one long-handled shovel and one axe or Pulaski consistent with PRC Section 4428. This SPR applies only to manual treatment activities and all treatment types, including treatment maintenance.

  - **SPR HAZ-4: Prohibit Smoking in Vegetated Areas:** The project proponent will require that smoking is only permitted in designated smoking areas barren or cleared to mineral soil at least 3 feet in diameter

(PRC Section 4423.4). This SPR applies to all treatment activities and treatment types, including treatment maintenance.

- **SPR GEO-3: Stabilize Disturbed Soil Areas:** The project proponent will stabilize soil disturbed during mechanical, prescribed herbivory treatments, and prescribed burns that result in exposure of bare soil over 50% or more of the treatment area with mulch or equivalent immediately after treatment activities, to the maximum extent practicable, to minimize the potential for substantial sediment discharge. If mechanical, prescribed herbivory, or prescribed burn treatment activities could result in substantial sediment discharge from soil disturbed by machinery, animal hooves, or being bare, organic material from mastication or mulch will be incorporated onto at least 75% of the disturbed soil surface where the soil erosion hazard is moderate or high, and 50% of the disturbed soil surface where soil erosion hazard is low to help prevent erosion. Where slash mulch is used, it will be packed into the ground surface with heavy equipment so that it is sufficiently in contact with the soil surface. This SPR only applies to mechanical, prescribed herbivory, and prescribed burns that result in exposure of bare soil over 50% of the project area treatment activities and all treatment types, including treatment maintenance.

- **SPR GEO-4: Erosion Monitoring:** The project proponent will inspect treatment areas for the proper implementation of erosion control SPRs and mitigations prior to the rainy season. If erosion control measures are not properly implemented, they will be remediated prior to the first rainfall event per SPR GEO-3 and GEO-8. Additionally, the project proponent will inspect for evidence of erosion after the first large storm or rainfall event (i.e., ≥ 1.5 inches in 24 hours) as soon as is feasible after the event. Any area of erosion that will result in substantial sediment discharge will be remediated within 48 hours per the methods stated in SPRs GEO-3 and GEO-8. This SPR applies only to mechanical, prescribed herbivory, and prescribed burning treatment activities and all treatment types, including treatment maintenance.

- **SPR GEO-5: Drain Stormwater via Water Breaks:** The project proponent will drain compacted and/or bare linear treatment areas capable of generating storm runoff via water breaks using the spacing and erosion control guidelines contained in Sections 914.6, 934.6, and 954.6(c) of the California Forest Practice Rules (February 2019 version). Where waterbreaks cannot effectively disperse surface runoff, including where waterbreaks cause surface run-off to be concentrated on downslopes, other erosion controls will be installed as needed to maintain site productivity by minimizing soil loss. This SPR applies only to mechanical, manual, and prescribed burn treatment activities and all treatment types, including treatment maintenance.

- **SPR GEO-8: Steep Slopes**: The project proponent will require a Registered Professional Forester (RPF) or licensed geologist to evaluate treatment areas with slopes greater than 50% for unstable areas (areas with potential for landslide) and unstable soils (soil with moderate to high erosion hazard). If unstable areas or soils are identified within the treatment area, are unavoidable, and will be potentially directly or indirectly affected by the treatment, a licensed geologist (P.G. or C.E.G.) will determine the potential for landslide, erosion, of other issue related to unstable soils and identity measures (e.g., those in SPR GEO-7) that will be implemented by the project proponent such that substantial erosion or loss of topsoil would not occur. This SPR applies only to mechanical treatment activities and WUI fuel reduction, non-shaded fuel breaks, and ecological restoration treatment types, including treatment maintenance.

Because the authority to determine project-level impacts and require project-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts. Although unlikely after implementation of Mitigation Measure 20-1, it is possible that significant impacts on utilities and service systems could still occur.

Consequently, while impacts could be reduced to a less than significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related and long-term operational-related impacts to wildfire risk associated with the Proposed Amendments would remain **significant and unavoidable**.

5.0 CUMULATIVE AND GROWTH-INDUCING IMPACTS

A. Approach to Cumulative Analysis

This chapter satisfies CEQA's requirement to discuss how the project being analyzed would contribute to cumulative impacts. CARB's certified regulatory program (Title 17 CCR Sections 60000–60008) does not provide specific direction on a cumulative impacts analysis, and while CARB is exempt from Chapters 3 and 4 of CEQA and corresponding sections of the CEQA Guidelines by virtue of its certified program, the Guidelines nevertheless contain useful guidance for preparation of a thorough and meaningful cumulative analysis. The CEQA Guidelines require a lead agency to discuss a cumulative impact if the project's incremental effect combined with the effects of other projects is "cumulatively considerable" (Title 14 CCR Section 15130[a]). The discussion of cumulative impacts need not provide as much detail as the discussion of effects attributable to the project alone (Title 14 CCR Section 15130). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant but must briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

As noted in Chapter 4.0, above, the Proposed Amendments would result in significant and unavoidable impacts with respect to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, land use and planning, noise, transportation, tribal cultural resources, utilities and service systems, and wildfire risk. These impacts are primarily attributed to the potential increase in construction and operation of facilities and infrastructure to support increased production and utilization of renewable energy, low-carbon-intensity (CI) fuels and RNG production, new electrical and pipeline infrastructure, modifications to existing facilities and processes, and addition of on- and off-site battery storage systems.

In considering cumulative impacts, an agency may choose from two approaches: It can prepare a list of past, present, and probable future projects that produce or would produce related or cumulative impacts, or it can rely on a summary of projections contained in an adopted planning document or an adopted or certified environmental document for the planning document (Title 14 CCR Section 15130[b]). Further, the CEQA Guidelines state that the pertinent discussion of cumulative impacts contained in one or more previously certified environmental impact reports (EIRs) may be incorporated by reference pursuant to provisions for tiering and program EIRs, and that no future cumulative analysis is required when the lead agency determines the regional and areawide impacts have already been addressed in the prior certified EIR for that plan (Title 14 CCR Section 15130).

This cumulative impact analysis uses the "summary of projections" approach set forth in Title 14 CCR Section 15130(b)(1)(B), using the 2022 Scoping Plan Update lists of actions, which consist of an update to the Cap-and-Invest Program (which is included within the

Proposed Amendments) as well as other similar statewide air quality and GHG reduction measures. The 2022 Scoping Plan Update's objectives and reasonably foreseeable compliance responses align with those brought forward in this EIA.

Because of the statewide reach of the Proposed Amendments and the longer-term future horizon for achievement of emission reductions, the impact analyses for the resource topics in Chapter 4.0 are programmatic, rather than site or project specific, to address the statewide context. The document contains a description and analysis of a series of actions that are part of one large program. Recommended mitigation measures in Chapter 4.0 provide a series of generally recognized methods to reduce significant impacts but cannot offer details related to specific project locations. As a result, the impact conclusions and mitigation measures in the resource-oriented sections of Chapter 4.0 are cumulative by nature, because they describe the potential impacts associated collectively with the full range of reasonably foreseeable compliance responses.

Like the analysis presented in Chapter 4.0 of this Draft EIA, the cumulative impacts analysis is described at a necessarily general level of detail, because information related to specific actions is not known at this time. This approach to a cumulative impacts analysis is "guided by the standards of practicality and reasonableness" (14 CCR Section 15130[b]) and serves the purpose of providing "a context for considering whether the incremental effects of the project at issue are considerable" when judged "against the backdrop of the environmental effects of other projects" (Communities for a Better Environment [CBE] v. the California Resources Agency [2002] 103 Cal.App.4th 98, 119).

B. Projects Resulting in Related Impacts

The CEQA Guidelines state that a previously approved plan for the reduction of criteria and other air pollutant emissions (i.e., GHGs) may be used in cumulative impacts analysis, and that the pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference (Title 14 CCR Section 15130[d]). Additionally, no further cumulative impacts analysis is required when a project is consistent with a general, specific, master, or comparable programmatic plan where the lead agency determines that the regional or areawide cumulative impacts of a proposed project have already been adequately addressed, as defined in Section 15152(f), in a certified EIR for that plan (14 CCR Section 15130[d]). CEQA further directs that a tiered EIR focus on significant environmental effects that were not already analyzed in the previous environmental analysis. (PRC Sections 21068.5, 21093; see also Section 21094[c].)

Additional strategies to reduce emissions and exposure, beyond the existing efforts, focus on amending current state measures and implementing new state measures. For purposes of disclosure and broad consideration of the potential actions that address air quality, CARB has identified relevant projects that would result in related impacts. The most relevant project is the 2022 Scoping Plan Update (CARB 2022a), which contains a range of measures that reduce air pollutant and GHG emissions and exposure within communities across the state, including the specific actions contained in the Proposed Amendments. The Final Environmental Analysis for the 2022 Scoping Plan Update

analyzes a series of statewide GHG emissions reducing measures similar to the Proposed Amendments (i.e., the measures included in the 2022 Scoping Plan Update), as well as projections regarding those measures.

As noted above, the CEQA Guidelines allow for incorporating by reference all or portions of other documents. Incorporation by reference is useful for including long, descriptive, or technical materials that provide general background but do not contribute directly to the pertinent analysis (14 CCR Section 15150). Therefore, the following document is incorporated by reference:

- Final Environmental Analysis (EA) for the 2022 Scoping Plan Update (2022 Scoping Plan EA) (CARB 2022b)

The portions of the document relevant to this discussion are summarized below and within the respective resource area analyses. The document is available upon request from CARB and online here:

- https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp-appendix-b-final-environmental-analysis.pdf

1. 2022 Scoping Plan Update

In April 2015, Governor Brown issued EO B-30-15 to establish a California GHG emissions reduction target of 40% below 1990 levels by 2030. In doing so, the Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. This target was later codified in SB 32; however, this target was expanded in 2022 with the passage of AB 1279, which established new long-term GHG emissions reduction targets of reducing statewide emissions by 85% from 1990 levels and achieving carbon neutrality by no later than 2045. In December 2022, CARB adopted the 2022 Scoping Plan Update, which provides the framework for achieving the ambitious target of achieving statewide carbon neutral by 2045.

Implementation of the measures to achieve the 2022 target in the Scoping Plan would result in two main types of reasonably foreseeable compliance responses: (1) construction of, or modifications to buildings, infrastructure, and industrial facilities and (2) new operations or changes to existing operational processes. These compliance responses are discussed in more detail below.

a) Construction of, or Modifications to, Buildings, Infrastructure, and Industrial Facilities

Implementation of the 2022 Scoping Plan Update would result in various types of construction projects across the state. These projects would include infrastructure projects, such as natural gas and hydrogen refueling stations; collection, processing, and distribution of biomethane; wind, solar thermal, solar photovoltaic, geothermal, solid-fuel

biomass, biogas, and small hydroelectric to generate electricity (i.e., renewable energy projects); collection of natural gas from landfills, dairies, and wastewater treatment plants; modifications to crude production facilities (on-site solar, wind, heat, and/or steam generation electricity); organic material composting and/or digesting facilities that would convert organic wastes diverted from landfills (e.g., yard waste, green wastes, food); new pipelines for RNG and low-carbon fuels; and upgraded and new transmission and distribution lines. Modifications may also be necessary at industrial sources in compliance with the Cap-and-Invest Program and reasonably foreseeable CCS-related compliance responses; roadways and urban areas to reduce overall vehicle miles traveled (VMT); and oil and gas facilities (which may include modifications to existing facilities, pipeline replacement or reconstruction activities, inspection and monitoring, and disposal of methane vapors). In addition, manufacturing facilities may be necessary to produce lithium-ion batteries. Large-scale energy storage systems would also be installed throughout California, which would reduce energy production demands.

Construction activities could require disturbance of undeveloped areas, such as clearing of vegetation, earth movement and grading, trenching for utility lines, erection of new buildings, and paving of parking lots, delivery areas, and roadways. Demolition of existing structures may also occur before the construction of new buildings and structures. Construction activities could be short-term and long-term.

b) New Operations and Changes to Existing Operational Processes

Under the 2022 Scoping Plan Update, there would be various methods to reduce GHG emissions that would result in new operations or changes to existing operational processes. New operations could include increased mining for lithium and increased recycling or refurbishment of batteries for on-road light-duty vehicles and heavy-duty vehicles. New operations would also include changes to methods of manure management at dairies, alterations to crop cultivation to meet feedstock demands related to fuels regulations, and improvements to transportation systems to reduce reliance on personal vehicles. Some of these operational process changes may, in turn, require some level of construction activity to effectuate the process change.

Potential environmental impacts associated with the 2022 Scoping Plan EA are summarized below in Table 6(CARB 2022b).

Table 6: Summary of Environmental Impacts for the 2022 Scoping Plan Update

Resource Areas and Impact Categories	Significance Determination
Aesthetics	
Impact 1.a: Short-Term Construction-Related Impacts	PSU
Impact 1.b: Long-Term Operational-Related Impacts	PSU
Agriculture and Forest Resources	
Impact 2.a: Short-Term Construction-Related Impacts	PSU
Impact 2.b: Long-Term Operational-Related Impacts	PSU
Air Quality	
Impact 3.a: Short-Term Construction-Related Impacts	PSU
Impact 3.b: Long-Term Operational-Related Impacts	B
Biological Resources	
Impact 4.a: Short-Term Construction-Related Impacts	PSU
Impact 4.b: Long-Term Operational-Related Impacts	PSU
Cultural Resources	

Resource Areas and Impact Categories	Significance Determination
Impact 5.a: Short-Term Construction-Related and Long-Term Operational-Related Impacts	PSU
Energy Demand	
Impact 6.a: Short-Term Construction-Related Impacts	LTS
Impact 6.b: Long-Term Operational-Related Impacts	LTS
Geology and Soils	
Impact 7.a: Short-Term Construction-Related Impacts	PSU
Impact 7.b: Long-Term Operational-Related Impacts	PSU
Greenhouse Gas	
Impact 8.a: Short-Term Construction-Related and Long-Term Operational-Related Impacts	B
Hazards and Hazardous Materials	
Impact 9.a: Short-Term Construction-Related Impacts	PSU
Impact 9.b: Long-Term Operational-Related Impacts	PSU
Hydrology and Water Quality	

Resource Areas and Impact Categories	Significance Determination
Impact 10.a: Short-Term Construction-Related Impacts	PSU
Impact 10.b: Long-Term Operational-Related Impacts	PSU
Land Use and Planning	
Impact 11.a: Short-Term Construction-Related Impacts	PSU
Impact 11.b: Long-Term Operational-Related Impacts	PSU
Mineral Resources	
Impact 12.a: Short-Term Construction-Related and Long-Term Operational-Related Impacts	LTS
Noise	
Impact 13.a: Short-Term Construction-Related Impacts	PSU
Impact 13.b: Long-Term Operational-Related Impacts	PSU
Population and Housing	
Impact 14.a: Short-Term Construction-Related and Long-Term Operational-Related Impacts	LTS
Public Services	

Resource Areas and Impact Categories	Significance Determination
Impact 15.a: Short-Term Construction-Related and Long-Term Operational-Related Impacts	LTS
Recreation	
Impact 16.a: Short-Term Construction-Related Impacts	LTS
Impact 16.b: Long-Term Operational-Related Impacts	PSU
Transportation/Traffic	
Impact 17.a: Short-Term Construction-Related Impacts	PSU
Impact 17.b: Long-Term Operational-Related Impacts	PSU
Tribal Cultural Resources	
Impact 18.a: Short-Term Construction-Related and Long-Term Operational-Related Impacts	PSU
Utilities and Service Systems	
Impact 19.a: Long-Term Operational-Related Impacts	PSU
Wildfire	
Impact 20.a: Short-Term Construction-Related Impacts	PSU

Resource Areas and Impact Categories	Significance Determination
Impact 20.b: Long-Term Operational-Related Impacts	PSU

B = Beneficial; LTS = Less Than Significant; NA = Not Applicable; PSU = Potentially Significant and Unavoidable

C. Significance Determinations and Mitigation

The impact discussion includes, where relevant, construction-related effects, operational effects of new or modified facilities, and influences of the recommended actions on GHG and air pollutant emissions. The 2022 Scoping Plan EA considers cumulative impacts of a full range of reasonably foreseeable compliance responses to all the recommendations and considered the cumulative effect of other "closely related" past, present, and future reasonably foreseeable activities undertaken to address air quality at the state level, as well as other activities with "related impacts" (Title 14 CCR Sections 15355[b] and 15130[a][1]).

The analysis of the 2022 Scoping Plan Final EA is hereby incorporated by reference. Portions of the Final EA relevant to this discussion are also summarized below. The analysis of cumulative impacts includes:

- a summary of the cumulative impacts found for each resource area in the 2022 Scoping Plan EA;
- a discussion of the types of compliance responses associated with the Proposed Project, pertinent to each resource area; and
- a significance conclusion that determines if the Proposed Project could result in a significant cumulative effect or a considerable contribution to an existing significant cumulative impact.

This approach to cumulative impacts analysis is "guided by the standards of practicality and reasonableness" (Title 14 CCR Section 15130[b]) and serves the purpose of providing "a context for considering whether the incremental effects of the project at issue are considerable" when judged "against the backdrop of the environmental effects of other projects" (*CBE v. Cal. Res. Agency* [2002] 103 Cal.App.4th 98, 119).

Implementation of the Proposed Amendments would potentially result in cumulatively considerable contributions to significant cumulative impacts related to certain resource areas, as discussed below. While standard practice mitigation is provided for each potential cumulatively considerable contribution to a significant impact in Section 4.0 of this Draft EIA, other agencies would be responsible for implementing the mitigation measures. Consequently, it is uncertain whether those other agencies would implement the mitigation measures, which precludes assurance that significant impacts would be

avoided or reduced to a less-than-significant level. Where impacts cannot feasibly be mitigated or where there is uncertainty about implementation of mitigation, this Draft EIA recognizes the impact as significant and unavoidable. The Board will need to adopt Findings and a Statement of Overriding Considerations for any significant and unavoidable environmental effects of the Proposed Amendments as part of the approval process.

D. Cumulative Impacts by Resource Area

1. Aesthetics

The 2022 Scoping Plan EA found that implementation of the recommended actions within the various sectors, which included the recommendation for the Proposed Amendments, could result in a significant cumulative impact to aesthetic resources from construction and operational activities associated with new or modified facilities or infrastructure. As discussed in the 2022 Scoping Plan EA, there is uncertainty as to the exact location of these new facilities or the modification of existing facilities. Construction and operation of these facilities (although likely to occur in areas zoned or used for manufacturing or industrial purposes), could conceivably introduce or increase the presence of artificial elements (e.g., heavy-duty equipment, removal of existing vegetation, buildings) in areas of scenic importance, such as visibility from state scenic highways. The visual impact of such development would depend on several variables, including the type and size of facilities, distance and angle of view, visual absorption and placement in the landscape. In addition, facility operation may introduce substantial sources of glare, exhaust plumes, and nighttime glare from lighting for safety and security purposes. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, implementation of the recommended actions in the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in a significant cumulative aesthetics-related impact.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the Proposed Amendments may themselves result in a significant adverse impact on aesthetic resources, consistent with the findings of the 2022 Scoping Plan EA. Implementation of the identified project-level mitigation could effectively reduce the incremental contribution from the Proposed Amendments to a less-than-considerable level, but authority to require that mitigation would rest with other agencies that would be authorizing site-specific projects, and not with CARB. Thus, the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on aesthetic resources.

2. Agriculture and Forestry Resources

The 2022 Scoping Plan EA found that implementation of the recommended measures within the various sectors, which included the recommendation for the Proposed

Amendments, could result in a significant cumulative impact to agricultural and forest resources. As discussed in the 2022 Scoping Plan EA, there is uncertainty as to the exact location of these new facilities or the modification of existing facilities. Construction of new facilities could result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, Williamson Act conservation contracts, or forest land or timberland, resulting in the loss of these resources. Additionally, increased demand for feedstock for fuels could result in indirect land use changes where food-based agriculture could shift to other areas and increase pressure to convert rangeland, grassland, forests, and other uses to agriculture. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in a significant cumulative impact to agricultural and forest resources.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the Proposed Amendments may themselves result in a significant adverse impact on agricultural and forest resources as concluded in the 2022 Scoping Plan Update. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on agricultural and forest resources.

3. Air Quality

The 2022 Scoping Plan EA found that implementation of the recommended measures within the various sectors, which included the recommendation for the Proposed Amendments, could result in a significant cumulative impact to short-term construction-related air quality. As discussed in the 2022 Scoping Plan EA, reasonably foreseeable compliance responses associated with the Proposed Amendments could result in short-term construction-related increases in criteria air pollutants and toxic air contaminants (TACs) in proximity to where fuel production or handling facilities are constructed or modified, as well as generate unpleasant odors that could affect sensitive receptors. These would be generated from using heavy-duty construction equipment on a short-term basis. Therefore, the Proposed Amendments could generate emission levels that conflict with applicable air quality plans, result in a cumulatively considerable net increase in non-attainment areas or expose sensitive receptors to substantial pollutant concentrations or odors. However, all projects, no matter their size or type would be required to seek local or state land use approvals prior to their implementation. Part of the land use entitlement process in California requires that each of these projects undergo environmental review consistent with California environmental review requirements (e.g., CEQA) and other

applicable local requirements (e.g., local air district rules and regulations). This environmental review process would assess whether project implementation would result in short-term construction-related air quality impacts. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes Proposed Amendments, could result in a short-term, construction-related cumulatively considerable impact to air quality.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the Proposed Amendments may themselves result in a significant adverse impact on short-term construction-related impacts on air quality as concluded in the 2022 Scoping Plan Update. Implementation of the identified project-level mitigation could effectively reduce the incremental contribution from the Proposed Amendments to a less-than-considerable level, but authority to require that mitigation would rest with other agencies that would be authorizing site-specific projects, and not with CARB. Thus, the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative short-term construction related impact** on air quality.

The 2022 Scoping Plan EA found that implementation of the recommended measures within the various sectors, which included the recommendation for the Proposed Amendments, would not result in a significant cumulative impact to long-term operational-related air quality. The 2022 Scoping Plan was developed to achieve carbon neutrality by 2045 through a substantial reduction in fossil fuel dependence, while at the same time increasing deployment of efficient non-combustion technologies and distribution of clean energy which also has criteria air pollutant and precursor benefits alongside reducing the exposure of sensitive receptors to TAC emissions. In addition, implementation of natural and working lands management strategies to mitigate and adapt to climate change will result in air quality and health benefits. The 2022 Scoping Plan achieves significant air pollutant emission reductions due to the measures impacting technologies, fuels, and energy demands within AB 32 GHG Inventory Sectors. For these reasons, long-term operational-related air quality impacts would be beneficial.

As discussed above in chapter 4.0, CARB does not believe significant localized increases are likely and anticipates overall beneficial long-term operational impacts statewide. Nevertheless, in an abundance of caution and for the purposes of complete public disclosure, CARB concludes that long-term local air quality impacts associated with the Proposed Amendments could be potentially significant and unavoidable. Thus, implementation of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative long-term operational-related impact** on air quality.

The 2022 Scoping Plan EA found that implementing the manure management actions; forest, shrubland, and grassland management actions; and organic waste diversion and

composting actions under the 2022 Scoping Plan would result in significant long-term operational impacts on odors.

Implementation of the Proposed Amendments would likely not result in odorous emissions. Sources of odor concerns include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants. While the Proposed Amendments may regulate entities that are within these categories of odor-producing facilities, the reasonably foreseeable compliances responses to the Proposed Amendments would not result in an expansion of the operation of these facilities or new types of odor sources resulting in an increase of odors from existing sources. Operational odor impacts would be less than significant.

Thus, implementation of the Proposed Amendments **would not result in a cumulatively considerable contribution to a significant cumulative odor impact**.

4. Biological Resources

Implementation of reasonably foreseeable compliance responses associated with recommended measures in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operational activities associated with new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. Construction could require disturbance of undeveloped areas, such as clearing of vegetation, earth movement and grading, trenching for utility lines, erection of new buildings, and paving of parking lots, delivery areas, and roadways. These activities would have the potential to adversely affect biological resources (e.g., species, habitat) that may reside or be present in those areas. Because there are biological species that occur, or even thrive, in developed settings, resources could also be adversely affected by construction and operations within disturbed areas at existing manufacturing facilities or at other sites in areas with zoning that would permit the development of manufacturing or industrial uses under the Proposed Amendments. In addition, new regulations could affect biological resources depending on the type of crop, location, and need to convert lands, habitat destruction could occur, resulting in the loss of biodiversity. The location of new crop lands may affect conservation plans or disrupt important migratory routes. Indirect effects could occur as well, such as increased pesticide and nutrient use, the runoff of which could be detrimental to individual species.

The biological resources that could be affected by construction and operation associated with implementation of new regulations and/or incentive measures under the 2022 Scoping Plan Update would depend on the specific location of any necessary construction and its environmental setting. Harmful impacts could include modifications to existing habitat; including removal, degradation, and fragmentation of riparian systems, wetlands, or other sensitive natural wildlife habitat and plan communities; interference with wildlife movement or wildlife nursery sites; loss of special-status species; and/or conflicts with the provisions of adopted habitat conservation plans, natural community conservation plans, or other conservation plans or policies to protect natural resources. Mitigation measures

were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in a significant cumulative impact on biological resources.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact on biological resources. Implementation of mitigation measures would reduce these environmental effects. However, because the authority to determine activity-level impacts and require activity-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address site-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce significant impacts.

Consequently, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that construction-related and long-term operational-related impacts on biological resources could be significant and unavoidable. Thus, the short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on biological resources.

5. Cultural Resources

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction activities associated with new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. Construction activities could require disturbance of undeveloped area, such as clearing of vegetation, earth movement and grading, trenching for utility lines, erection of new buildings, and paving of parking lots, delivery areas, and roadways. Demolition of existing structures may also occur before the construction of new buildings and structures. The cultural resources that could potentially be affected by ground disturbance activities could include, but are not limited to, prehistoric and historical archaeological sites, paleontological resources, historic buildings, structures, or archaeological sites associated with agriculture and mining, and heritage landscapes. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also may exist. Historic buildings and structures may also be adversely affected by demolition-related activities. Such resources may occur individually, in groupings of modest size, or in districts. Because culturally sensitive resources can also be located in developed settings, historic, archeological, and paleontological resources, and places important to Native American communities, could

also be adversely affected by construction of new facilities. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in a significant cumulative impact on cultural resources.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact on cultural resources. Because the authority to determine project-level impacts and require project-level mitigation lies with the land use approval and/or permitting agency for individual projects, and that the programmatic analysis does not allow project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation ultimately implemented to reduce the significant impacts.

Consequently, while impacts could be reduced to a less-than-significant level by land use and/or permitting agency conditions of approval, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that the impact on cultural resources **could result in a cumulatively considerable contribution to a significant cumulative impact** on cultural resources.

6. Energy

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operational activities associated with new or modified facilities or infrastructure. Temporary increases in energy demand associated with new facilities would include fuels used during construction, and gas and electric operational demands. Typical earth-moving equipment that may be necessary for construction includes graders, scrapers, backhoes, jackhammers, front-end loaders, generators, water trucks, and dump trucks. While energy would be required to complete construction for any new or modified facilities or infrastructure projects, it would be temporary and limited in magnitude and would not result in sustained increases in demand that would adversely affect energy supplies. Therefore, the Scoping Plan would not result in a cumulative short-term construction-related or; long-term operational-related impact on energy demand.

Implementation of reasonably foreseeable compliance responses associated with the Proposed Amendments could also require construction and operational activities associated with new or modified facilities or infrastructure as well as fuel production. While the Proposed Amendments could result in an increase in energy demand the energy use would not be wasteful, inefficient, or unnecessary and would not conflict with the 2022 Scoping Plan Update. Thus, short-term construction-related and long-term operation-

related impacts of the Proposed Amendments **would not result in a cumulatively considerable contribution to a significant cumulative impact** on energy demand.

7. Geology and Soils

Implementation of the reasonably foreseeable compliance responses associated with the recommended measures in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operational activities associated with new or modified facilities or infrastructure. In addition, implementation of new fuels regulations could increase or change agricultural practice. The detrimental effects of agricultural practices on soil quality include erosion, desertification, salinization, compaction, and pollution. Loss of topsoil can increase erosion rates and affect water quality, which may be exacerbated through increased use of nutrients and pesticides.

There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. Construction and operation could be located in a variety of relatively high-risk geologic and soil conditions that are considered to be potentially hazardous. For instance, the seismic conditions at the site of a new facility may have high to extremely high seismic-related fault rupture and ground shaking potential associated with earthquake activity. New facilities could also be subject to seismic-related ground failure, including liquefaction and landslides. Construction and operational activities could be located in a variety of geologic, soil, and slope conditions with varying amounts of vegetation that would be susceptible to soil erosion. Strong ground shaking could also trigger landslides in areas where the natural slope is naturally unstable or is over-steepened by the construction of access roads and structures. Construction and operation could also occur in locations that would expose facilities and structures to expansive soil conditions. Development of new facilities could be susceptible to the presence of expansive soils particularly in areas of fine-grained sediment accumulation typically associated with playas, valley bottoms, and local low-lying areas.

The specific design details, siting locations, seismic hazards, and geologic, slope, and soil conditions for any particular facilities that could occur as a result of reasonably foreseeable compliance responses are not known at this time and would be analyzed on a site-specific basis at the project level. Therefore, for purposes of this analysis, development of these facilities could expose people and structures to relatively high levels of risk associated with strong seismic ground shaking, including liquefaction and landslides, and instability. These geologic, seismic, and soil-related conditions could result in damage to structures, related utility lines, and access roads, blocking access and posing safety hazards to people. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in a significant cumulative impact on geology and soils.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact on geology and soils. Because the authority to determine project-level impacts and require project-level mitigation lies with the land use approval and/or permitting agency for individual projects, and since the programmatic analysis does not allow project-specific details of mitigation, there is inherent uncertainty in the degree of mitigation ultimately implemented to reduce the significant impacts. Thus, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact on geology and soils.**

8. Greenhouse Gas Emissions

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction activities associated with new or modified facilities or infrastructure. Specific, project-related construction activities could result in increased generation of short-term GHG emissions in limited amounts associated with the use of heavy-duty off-road equipment, materials transport, and worker commutes. As described in Scoping Plan EA, a majority of local agencies (e.g., air pollution control districts) do not recommend or require the quantification of short-term construction-generated GHGs for typical construction projects because these only occur for a finite period of time (e.g., during periods of construction) that is typically much shorter than the operational phase, and agencies generally recommended that GHG analyses focus on operational phase emissions, unless the project is of a unique nature requiring atypical (e.g., large scale, long-term) activity levels (e.g., construction of a new dam or levee) for which quantification and consideration (e.g., amortization of construction emissions over the lifetime of the project) may be recommended. Thus, short-term construction related GHG emissions impacts associated with reasonably foreseeable compliance responses for the recommended actions in the 2022 Scoping Plan Update would be less than significant when considered in comparison to the overall GHG emissions reduction associated with implementation of the 2022 Scoping Plan Update. Additionally, the long-term operational impacts to GHG emissions from the recommended actions are primarily beneficial, as they are consistent with the goals and objectives of the 2022 Scoping Plan Update to reduce emissions to achieve carbon neutrality and 2045 emission reduction goals. Thus, the 2022 Scoping Plan Update, including the Proposed Amendments, would not result in a cumulatively considerable contribution to a significant cumulative impact on GHG emissions.

Implementation of reasonably foreseeable compliance responses associated with the Proposed Amendments could require construction activities associated with new or modified facilities or infrastructure. Specific, project-related construction activities could result in increased generation of short-term GHG emissions in limited amounts associated with the use of heavy-duty off-road equipment, materials transport, and worker commutes. As described in Chapter 4.0, a majority of local agencies (e.g., air pollution control districts) do not recommend or require the quantification of short-term

construction-generated GHG emissions for typical construction projects because these only occur for a finite period of time (e.g., during periods of construction) that is typically much shorter than the operational phase, and agencies generally recommended that GHG analyses focus on operational phase emissions, unless the project is of a unique nature requiring atypical (e.g., large-scale, long-term) activity levels (e.g., construction of a new dam or levee) for which quantification and consideration (e.g., amortization of construction emissions over the lifetime of the project) may be recommended. Thus, short-term construction related GHG emissions impacts associated with reasonably foreseeable compliance responses to the Proposed Amendments would be less than significant when considered in comparison to the overall GHG emissions reduction associated with implementation of the Proposed Amendments.

As detailed in Chapter 4.0, implementation of the reasonably foreseeable compliance responses is anticipated to result in environmentally beneficial impacts. This is because of the declining cap on covered emissions, investments in renewable energy resources including solar and wind facilities, scaling up the production of RNG and low CI-fuels, and on- and off-site battery storage systems to facilitate the electrification of industrial facilities.

Additionally, the comparatively small level of GHG emissions related to construction and operation of facilities associated with the compliance responses, as described above, would be offset by the reductions in GHG emissions from the implementation of the Proposed Amendments. Thus, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **would not result in a cumulatively considerable contribution to a significant cumulative impact** on GHG emissions.

9. Hazards and Hazardous Materials

Reasonably foreseeable compliance responses to the recommended measures in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could include construction and operation of new or modified facilities or infrastructure. There is uncertainty as to the exact locations where construction and operations of new facilities or the modification of existing facilities would occur.

Construction activities may require the transport, use, and disposal of hazardous materials. Construction activities generally use heavy-duty equipment requiring periodic refueling and lubricating fluids. Large pieces of construction equipment (e.g., backhoes, graders) are typically fueled and maintained at the construction site as they are not designed for use on public roadways. Thus, such maintenance uses a service vehicle that mobilizes to the location of the construction equipment. It is during the transfer of fuel that the potential for an accidental release is most likely. Although precautions would be taken to ensure that any spilled fuel is properly contained and disposed, and such spills are typically minor and localized to the immediate area of the fueling (or maintenance), the potential remains for a significant release of hazardous materials into the environment. Consequently, construction activities could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Mitigation

measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in significant short-term construction-related and long-term operational-related impacts on hazards and hazardous materials.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact from hazards and hazardous materials. Implementation of mitigation measures would reduce these environmental effects. However, because the authority to determine activity-level impacts and require activity-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address site-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately by implemented to reduce significant impacts.

Consequently, this EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that both construction- and operational-related impacts from hazards and hazardous materials could be significant and unavoidable. Thus, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on hazards and hazardous materials.

10. Hydrology and Water Quality

Construction activities and long-term operations associated with reasonably foreseeable compliance responses to the recommended measures in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could be in a variety of conditions with regards to altering drainage patterns, flooding, and inundation by seiche, tsunami, or mudflow. The level of susceptibility varies by location. In addition, fuels regulation could alter agricultural practices, resulting in discharges to waterways of sediment, nutrients, pathogens, pesticides, metals, and salts. The specific design details, siting locations, and associated hydrology and water quality issues are not known at this time and would be analyzed on a site-specific basis at the project level. Therefore, for purposes of CEQA disclosure, these potential hydrology and water quality-related impacts could be significant. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in a significant cumulative impact to hydrology and water quality.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact on hydrology and water quality. Implementation of mitigation measures would reduce these environmental effects. However, because the authority to determine activity-level impacts and require activity-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this EIA does not attempt to address site-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately by implemented to reduce significant impacts.

Consequently, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that short-term construction-related impacts to hydrology and water quality could be significant and unavoidable. Thus, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on hydrology and water quality.

11. Land Use and Planning

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require both construction and long-term operation of new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. However, facilities would likely occur within the footprints of existing manufacturing facilities, or in areas with zoning that would permit the development of these facilities. As summarized in Table 7, the 2022 Scoping Plan Update EA identified potentially significant and unavoidable impacts related to land use and planning due to construction of individual projects and significant and unavoidable impacts due to operation of individual projects. Thus, implementation of the 2022 Scoping Plan Update could result in a significant cumulative impact.

Because the Proposed Amendments on their own would result in a significant and unavoidable impact, and because this impact would combine with other land use and planning impacts across the state, the project's contribution to the significant cumulative impact would also be cumulatively considerable. Implementation of the project-level mitigation identified in Chapter 4.0 could likely effectively reduce the incremental contribution from the Proposed Amendments to a less-than-significant level, but authority to require that mitigation would rest with other agencies that would be authorizing site-specific projects, and not with CARB. Thus, as noted in Chapter 4.0, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce significant impacts. Therefore, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** related to land use and planning.

12. Mineral Resources

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require both the construction and operation of new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new or modified facilities and infrastructure. New facilities and infrastructure would likely occur within existing footprints or in areas with consistent zoning, where original permitting and analyses considered mineral resources issues. Although construction of new facilities and infrastructure could occur in areas outside the footprints of existing facilities, short-term construction impacts would only temporarily affect the availability of known mineral resources of local regional, or state value. Thus, the 2022 Scoping Plan Update would not result in a considerable contribution to a cumulative short-term construction-related impact on mineral resources.

Some of the recommended actions and associated compliance responses could require the extraction of minerals (e.g., lithium or platinum) used to manufacture fuel cell and battery technologies. However, implementation of these measures would not substantially deplete the supply of lithium or platinum, and both are currently used in auto manufacturing processes. Therefore, the 2022 Scoping Plan Update, which includes Proposed Amendments, would not result in a considerable contribution to a cumulative long-term operational impact on mineral resources.

The Proposed Amendments would result in less-than significant effects on availability of mineral resources during construction and operational activities, as described in Chapter 4.0. Facilities developed in response to implementation of the Proposed Amendments are generally expected to be located in areas within existing footprints or in areas with consistent zoning where original permitting and analyses considered these issues and would not preclude access to a known mineral resource. However, new mining operations could occur in areas currently undeveloped. Though increased mining for various metals to facilitate on- and off-site battery storage systems, the current stores of mineral resources, both domestically and internationally, would not be lost due to the reasonably foreseeable compliance responses of the Proposed Amendments alone. Therefore, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **would not result in a cumulatively considerable contribution to a significant cumulative impact** related to mineral resources.

13. Noise

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operation of new or modified facilities or infrastructure. These activities could result in the generation of short-term construction noise in excess of applicable standards or that result in a substantial increase in ambient levels at nearby sensitive receptors, and exposure to excessive vibration levels, which would be significant. Operational noise impacts would not typically be expected due to the fact that typical compliance response

activities would likely occur within footprints of existing facilities, or in areas with zoning that would permit the development of these facilities. However, operational noise related to new facilities, mining operations, and renewable energy projects could emit excessive levels of noise near sensitive receptors. Thus, operational effects of equipment constructed as a result of implementation of recommended actions associated with 2022 Scoping Plan Update could result in significant impacts. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in significant cumulative construction-related and operational noise impacts.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact on noise. Implementation of mitigation measures would reduce these environmental effects. However, because the authority to determine activity-level impacts and require activity-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address site-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce significant impacts.

Consequently, this EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that construction-related and long-term operational impacts on noise could be significant and unavoidable. Thus, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on noise.

14. Population and Housing

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operation of new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. These would likely occur within footprints of existing facilities, or in areas with zoning that would permit the development of such facilities. Construction of these facilities activities would require relatively small crews, and demand for these crews would be temporary (e.g., 6–12 months per project). Therefore, a substantial amount of construction worker migration would not be likely to occur, and a sufficient construction employment base would likely be available. Construction activities would not require new additional housing or generate changes in land use. Therefore, the 2022 Scoping Plan Update, which includes the

Proposed Amendments, would not result in a significant cumulative impact related to population and housing growth.

Implementation of reasonably foreseeable compliance responses associated with the Proposed Amendments could require construction and operation of new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. These would likely occur within footprints of existing facilities, or in areas with zoning that would permit the development of such facilities. Construction of these facilities would require relatively small crews, and demand for these crews would be temporary. Therefore, a substantial amount of construction worker migration would not be likely to occur, and a sufficient construction employment base would likely be available. Construction activities would not require new additional housing or generate changes in land use. The implementation of the Proposed Amendments would not be expected to lead to job losses or large-scale worker displacement. As cleaner, alternative fuels displace some petroleum-based fuels, jobs may shift from the petroleum industry to other sectors of California's economy, such as agriculture. The shift in consumer dollars from gasoline and diesel toward cleaner, more domestically produced fuels would spur growth in well-paying jobs in the clean fuels industry.

Therefore, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **would not result in a cumulatively considerable contribution to a significant cumulative impact** related to population and housing growth.

15. Public Services

Reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could include construction and operation of new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. These would likely occur within footprints of existing facilities, or in areas with zoning that would permit the development of these facilities. Construction activities would be anticipated to require relatively small crews, and demand for these crews would be temporary. Therefore, it would be anticipated that the need for a substantial amount of construction worker migration would not occur and that a sufficient construction employment base would likely be available. Construction activities would not require new additional housing to accommodate or generate changes in land use and, therefore, would not affect the provision of public services. Therefore, the 2022 Scoping Plan Update, which includes the Proposed Amendments, would not result in a significant cumulative impact related to public services.

Reasonably foreseeable compliance responses associated with the Proposed Amendments could include construction and operation of new or modified facilities or infrastructure. There is uncertainty as to the exact location of these new facilities or the modification of existing facilities. These would likely occur within footprints of existing facilities, or in areas with zoning that would permit the development of these facilities. Construction activities would be anticipated to require relatively small crews, and demand

for these crews would be temporary. Therefore, it would be anticipated that the need for a substantial amount of construction worker migration would not occur and that a sufficient construction employment base would likely be available. Construction activities would not require new additional housing to accommodate or generate changes in land use and, therefore, would not affect the provision of public services. Therefore, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **would not result in a cumulatively considerable contribution to a significant cumulative impact** related to public services.

16. Recreation

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which includes the Proposed Amendments, could require construction and operations of new or modified facilities or infrastructure. There is uncertainty as to the exact locations of potential new or modified facilities. These activities would likely occur within footprints of existing facilities, or in areas with zoning that would permit their development. In addition, demand for construction crews at these sites would be temporary (e.g., 6–12 months per project). Therefore, it would be anticipated that the need for a substantial amount of construction worker migration would not occur and that a sufficient construction employment base would likely be available. Thus, construction activities associated with reasonably foreseeable compliance responses would not be anticipated to increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur. In addition, the demand for new (or expansion of) recreational-related facilities would not occur as a result of construction activities. However, new renewable energy projects could be located on recreational land or close to recreation resources. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Therefore, the 2022 Scoping Plan Update, which includes the Proposed Amendments, would result in a long-term operational impact related to recreational facilities.

As described in Chapter 4.0, implementation of reasonably foreseeable compliance responses associated with the Proposed Amendments could require construction and operations of new or modified facilities or infrastructure. There is uncertainty as to the exact locations of potential new or modified facilities. These activities would likely occur within footprints of existing facilities, or in areas with zoning that would permit their development. In addition, demand for construction crews at these sites would be temporary (e.g., 6–12 months per project). Therefore, it would be anticipated that the need for a substantial amount of construction worker migration would not occur and that a sufficient construction employment base would likely be available. Thus, construction activities associated with reasonably foreseeable compliance responses would not be anticipated to increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur. In addition,

the demand for new (or expansion of) recreation-related facilities would not occur as a result of construction activities. Nevertheless, in consideration of a cumulative scenario (i.e., multiple past, present, and future project occurring within the same geographic area), the Proposed Amendments' less than significant impact to recreational resources could cumulatively combine with projects proposed in the 2022 Scoping Plan Update resulting in a potentially significant cumulative impact. Thus, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **would not result in a cumulatively considerable contribution to a significant cumulative impact could result in a cumulatively considerable contribution to a significant cumulative impact** on recreational resources.

17. Transportation

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operations of new or modified facilities or infrastructure. In addition, new fuels standards could result in changes to imports and statewide shipments of feedstock and distribution of fuels. Although detailed information about potential specific construction activities is not currently available, some of the potential compliance responses could result in short-term construction traffic (primarily motorized) from worker commute- and material delivery-related trips. The amount of construction activity would vary depending on the particular type, number, and duration of usage for the varying equipment, and the phase of construction. These variations would affect the amount of project-generated traffic for both worker commute trips and material deliveries. Depending on the amount of trip generation and the location of new facilities, implementation could conflict with applicable programs, plans, ordinances, or policies (e.g., performance standards, congestion management); and/or result in hazardous design features and emergency access issues from road closures, detours, and obstruction of emergency vehicle movement, especially due to project-generated heavy-duty truck trips. Implementation of the reasonably foreseeable compliance responses under the 2022 Scoping Plan Update could also result in impacts associated with long-term operational changes in traffic patterns or vehicle trips, or conflict with existing circulation plans. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update could result in a cumulative short-term construction-related and long-term operational-related transportation and traffic-related impact.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact to transportation. Implementation of mitigation measures would reduce these environmental effects. However, because the authority to determine activity-level impacts and require activity-level mitigation lies with land use

and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address site-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately by implemented to reduce potentially significant impacts.

Consequently, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that construction-related and long-term operational impacts on transportation could be potentially significant and unavoidable. Thus, short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on transportation.

18. Tribal Cultural Resources

Implementation of the reasonably foreseeable compliance responses associated with the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operational activities associated with new or modified facilities or infrastructure and increased mining activities. The exact location of these new facilities or the modification of existing facilities is uncertain. Construction activities could require disturbance of undeveloped areas, such as clearing of vegetation, earth movement and grading, trenching for utility lines, erection of new buildings, and paving of parking lots, delivery areas, and roadways. Demolition of existing structures may also occur before the construction of new buildings and structures. The cultural resources that could potentially be affected by ground disturbance activities could include tribal cultural resources. Properties important to Native American communities, including tangible properties possessing intangible traditional cultural values, also may exist. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, implementation of the 2022 Scoping Plan Update could result in a significant impact related to TCRs.

The Proposed Amendments' impacts to TCRs would be significant and unavoidable on their own, as concluded in Chapter 4.0. These impacts would be significant because of the potential to damage and destroy TCRs. Because the Proposed Amendments on their own would result in a significant and unavoidable impact, the project's contribution to the significant cumulative impact would also be cumulatively considerable. Implementation of the project-level mitigation identified in Chapter 4.0 could likely effectively reduce the incremental contribution from the Proposed Amendments to a less-than-significant level, but authority to require that mitigation would rest with other agencies that would be authorizing site-specific projects, and not with CARB. Thus, as noted in Chapter 4.0 CARB's implementation and enforcement of project-level mitigation is legally infeasible. Therefore, the short-term construction-related and long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on TCRs.

19. Utilities and Service Systems

Implementation of reasonably foreseeable compliance responses associated with the recommended actions in the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operations of new or modified facilities or infrastructure. Newly constructed or modified facilities could generate substantial increases in the demand for water supply, wastewater treatment, storm water drainage, and solid waste services in their local areas. The specific location and type of construction needs are unknown and would depend on a variety of market factors that are not within the control of CARB, including economic costs, product demands, environmental constraints, and other market constraints. However, individual compliance responses could potentially result in significant environmental impacts.

Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in a significant impact with respect to utilities and service systems.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact to utility and service systems. Implementation of mitigation measures would reduce these environmental effects. However, because the authority to determine activity-level impacts and require activity-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address site-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately by implemented to reduce potentially significant impacts.

Consequently, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that long-term operational impacts on utility service systems could be potentially significant and unavoidable. Thus, long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** on utility and service systems.

20. Wildfire

Implementation of the 2022 Scoping Plan Update, which included the recommendation for the Proposed Amendments, could require construction and operational activities associated with new or modified facilities or infrastructure and increased mining activities. The 2022 Scoping Plan Update and the associated compliance responses indicated that these activities would result in a significant impact to wildfire because there is uncertainty as to the exact locations of potential new or modified facilities that could increase fire

hazards. Mitigation measures were identified that could and should be implemented to reduce these impacts through the development review process. However, because CARB does not have the authority to require project-level mitigation, since this authority lies with land use and/or permitting agencies for individual projects, and because of the programmatic nature of the EA, impacts were determined to be significant and unavoidable. Thus, the 2022 Scoping Plan Update, which includes the Proposed Amendments, could result in significant long-term operational-related wildfire impacts.

The Proposed Amendments' contribution to this significant impact would be cumulatively considerable, given the conclusion in Chapter 4.0 that the reasonably foreseeable compliance responses associated with the Proposed Amendments may themselves result in a significant adverse impact to wildfire risk. Anthropogenic climate change has exacerbated the State's susceptibility to wildfire. This, in conjunction with the potential for newly constructed electrical transmission and distribution lines as a compliance response to the Proposed Amendments would impose increased risk of wildfire throughout the State's wildfire prone areas. Implementation of mitigation measures would reduce these environmental effects. However, because the authority to determine activity-level impacts and require activity-level mitigation lies with land use and/or permitting agencies for individual projects, and the programmatic level of analysis associated with this Draft EIA does not attempt to address site-specific details of mitigation, there is inherent uncertainty in the degree of mitigation that may ultimately be implemented to reduce potentially significant impacts.

Consequently, this Draft EIA takes the conservative approach in its post-mitigation significance conclusion and discloses, for CEQA compliance purposes, that construction-related and long-term operational impacts on wildfire risk could be potentially significant and unavoidable. Thus, the long-term operation-related impacts of the Proposed Amendments **could result in a cumulatively considerable contribution to a significant cumulative impact** to wildfire risk.

E. Growth-Inducing Impacts

As described above, a project would be considered growth-inducing if it removes an obstacle to growth, includes construction of new housing, or establishes major new employment opportunities. The reasonably foreseeable compliance responses associated with the Proposed Amendments would not result in new utility or services systems and would not include construction of new housing.

The Proposed Amendments are intended to, among other things, achieve the long-term GHG reduction goals set forth in the 2022 Scoping Plan Update AB 1279 and AB 1207 and continue the objectives of the Cap-and Trade Program by decreasing the cap on emissions of the Cap-and-Invest program. Consequently, the Proposed Amendments are intended to encourage investments in technologies and infrastructure that would reduce GHG emissions. This includes the transition to low-carbon materials, such as clean low-carbon hydrogen, low-carbon fuels, and RNG; the electrification and installation of on- and off-site renewable energy electricity and storage systems; the increase in solar thermal technologies; the construction of new or expansion of existing biorefining and co-

processing operations; and the decrease in oil and gas extraction. This also includes, the production of low-carbon fuels such as clean hydrogen and RNG.

As described in Section 4.14, the reasonably foreseeable compliance responses to the proposed amendments are not expected to induce growth associated with increased new employment opportunities as it is expected that demand for new jobs would be met by local communities. Additionally, it is not expected that the reasonably foreseeable compliance responses would result in a steep increase in job opportunities that could require new housing or alter the growth projections assumed by local jurisdictions. The Proposed Amendments could result in growth associated with the economic opportunity associated with technologies such as low-carbon fuels, and renewable energy.

Thus, the proposed regulations would encourage economic activity associated with emerging technologies and research and development related to reducing GHG emissions through low-carbon fuels, and renewable energy. Given that several existing regulations are aimed toward goals that would reduce the environmental effects associated with renewable energy and low-carbon fuels, such as reduced energy use and air emissions, the Proposed Amendments would contribute to these trends rather than acting as the sole driving force.

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6.0 MANDATORY FINDINGS OF SIGNIFICANCE

Consistent with the requirements of the California Environmental Quality Act (CEQA) Guidelines Section 15065 and Section 18 of the Environmental Checklist, this Draft Environmental Impact Analysis (Draft EIA) addresses the mandatory findings of significance for the Proposed Amendments.

A. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat for a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

A finding of significance is required if a project "has the potential to substantially degrade the quality of the environment (14 CCR Section 15065(a))." In practice, this is the same standard as a significant effect on the environment, which is defined as "a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (14 CCR Section 15382.)." As with all of the environmental effects and issue areas, the precise nature and magnitude of impacts would depend on the types of projects authorized, their locations, their geographic extent, and a variety of site-specific factors that are not known at this time but that would be addressed by environmental reviews at the project-specific level, as appropriate. For projects within California, these issues would be considered and addressed as appropriate through project-specific environmental reviews that would be conducted by local land use agencies or other regulatory bodies at such time the projects are proposed for implementation. Outside of California, other state and local agencies would consider the proposed projects in accordance with their laws and regulations. CARB would not be the agency responsible for conducting the project-specific environmental or approval reviews because it is not the agency with authority for making land use or project implementation decisions.

This Draft EIA addresses and discloses potential environmental effects associated with implementation of the Proposed Amendments, including direct, indirect, and cumulative impacts. As described in Chapter 4.0, this Draft EIA discloses potential environmental impacts, the level of significance prior to mitigation, mitigation measures, and the level of significance after the incorporation of mitigation measures. The project's impacts include impacts to biological resources, as described in Chapter 4.0.

B. Does the project have impacts that are individually limited, but cumulatively considerable?

A lead agency must find that a project may have a significant effect on the environment where there is substantial evidence that the project has potential environmental effects that are individually limited, but cumulatively considerable (14 CCR Section 15065). Cumulatively considerable means "that the incremental effects of an individual project are

significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (14 CCR Section 15065(a)(3)).” Cumulative impacts are discussed in Chapter 5.0 in the Draft EIA.

C. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

A lead agency must find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to cause substantial adverse effects on human beings, either directly or indirectly (14 CCR Section 15065(a)(4)). Under this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people would be significantly affected. This factor relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals. While changes to the environment that could indirectly affect human beings would be represented by all of the designated CEQA issue areas, particular areas that could directly affect human beings include air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, population and housing, public services, transportation/traffic, and utilities, which are all addressed in Chapter 4.0, “Impact Analysis” of this Draft EIA.

7.0 ALTERNATIVES ANALYSIS

This chapter of the Draft EIA provides an overview of: the regulatory requirements and guidance for alternatives analyses under CEQA; a description of each of the alternatives to the Proposed Amendments; a discussion of whether and how each alternative meets the objectives of the Proposed Amendments; and an analysis of each alternative's environmental impacts.

A. Approach to Alternatives Analysis

CARB's certified regulatory program (Title 17 CCR Sections 60000 – 60008) requires that, where a contemplated action may have a significant effect on the environment, an environmental analysis shall be prepared in a manner consistent with the environmental protection purposes of CARB's regulatory program and the goals and policies of CEQA. Among other things, the environmental analysis must address feasible alternatives to the proposed action that would substantially reduce any significant adverse impact identified.

CARB's certified regulatory program provides general guidance that any action or proposal for which significant adverse environmental impacts have been identified during the review process shall not be approved or adopted as proposed if there are feasible mitigation measures or feasible alternatives available which would substantially reduce such an adverse impact. For purposes of this section, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors, and consistent with the Board's legislatively mandated responsibilities and duties (Title 14 CCR Section 15364).

While CARB, by virtue of its certified program, is exempt from Chapters 3 and 4 of CEQA and corresponding sections of the CEQA Guidelines, the CEQA Guidelines nevertheless contain useful information for preparation of a thorough and meaningful alternatives analysis. CEQA Guidelines section 15126.6(a) speaks to evaluation of "a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects and evaluate the comparative merits of the alternatives." The purpose of the alternatives analysis is to determine whether different approaches to, or variations of, the project would reduce or eliminate significant project impacts, within the basic framework of the objectives, a principle that is consistent with CARB's regulatory requirements.

Alternatives considered in an environmental document should be potentially feasible and should attain most of the basic project objectives. It is critical that the alternatives analysis define the project's objectives. The project objectives are listed below in section C of this chapter.

The range of alternatives is governed by the "rule of reason," which requires evaluation of only those alternatives "necessary to permit a reasoned choice" (Title 14 CCR Section 15126.6(f)). Further, an agency "need not consider an alternative whose effect cannot be

reasonably ascertained and whose implementation is remote and speculative" (Title 14 CCR Section 15126.6(f)(3)). The analysis should focus on alternatives that are feasible and that take economic, environmental, social, and technological factors into account. Alternatives that are remote or speculative need not be discussed. Furthermore, the alternatives analyzed for a project should focus on reducing or avoiding significant environmental impacts associated with the project as proposed.

B. Selection of Range of Alternatives

This chapter evaluates a range of potentially feasible alternatives to the Proposed Amendments that could reduce or eliminate significant effects on the environment, while still meeting basic project objectives (14 CCR Section 15126.6(a)). Pursuant to CARB's certified regulatory program, this chapter also contains an analysis of each alternative's feasibility and the likelihood that it would substantially reduce any significant adverse environmental impacts identified in the impact analysis contained in Chapter 4.0 of this Draft EIA (17 CCR Section 60004.2(a)(5)). CARB has identified three alternatives that allow the public and the Board to consider different approaches toward meeting the project objectives. CARB has made a good faith effort to identify potentially feasible project alternatives that could meet these objectives. For the purposes of this analysis, three alternatives are considered:

- Alternative 1: No Project Alternative
- Alternative 2: Facility-Specific Requirements
- Alternative 3: Update Allowance Budgets to 40% below 1990 levels in 2030 through reductions in Cost Containment

C. Project Objectives

The primary objectives of the Proposed Amendments are described below. These objectives are derived from (1) AB 32, which limits GHG emissions in California, with reductions in emissions maintained and continued beyond 2020; (2) SB 32, which establishes a GHG emissions reduction target of at least 40% below 1990 levels by 2030; (3) AB 1279, which establishes a target to reduce anthropogenic GHG emissions to 85% below 1990 levels by 2045 and a goal to achieve carbon neutrality no later than 2045; and (4) AB 1207, which extends the Program to 2045 and directs CARB to ensure that Program wide aggregate emissions from covered sources, at a minimum, decline with State climate targets; and (5) the 2022 Scoping Plan Update, which recommends measures to achieve the mid-century climate targets.

The major administrative and Program implementation objectives of the Proposed Amendments include the following:

1. Continue the objectives of the Cap-and-Invest Program.

The "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms" (2010 FED) contains the primary objectives of the Cap-and-Invest Program when it was initially adopted in 2011. These objectives are:

a. achieve technologically feasible and cost-effective aggregate reductions;
b. distribute allowances equitably;
c. avoid disproportionate impacts on low-income communities;
d. credit early action;
e. complement existing air standards;
f. consider cost-effectiveness ;
g. consider a broad range of public benefits;
h. minimize administrative burden;
i. minimize leakage;
j. weigh relative emissions;
k. achieve real emission reductions;
l. achieve reductions over current regulation;
m. complement direct measures;
n. consider emissions impacts;
o. prevent increases in other emissions;
p. maximize co-benefits;
q. avoid duplication;
r. establish declining cap;
s. reduce fossil fuel use;
t. link with partners;
u. design an enforceable, amendable program; and
v. ensure emissions reductions.

As the Cap-and-Invest Program has been implemented and changed over time, the objectives have been adjusted to reflect the changes. The Proposed Amendments seek to uphold these existing objectives in the continuation of the Cap-and-Invest Program, except with respect to 2010 FED Objective 4 and 18. Objective 4 is to credit early action. Early action offset credits are no longer being issued. The final early action offset credits were issued in 2016.

2010 FED Objective 18 is to establish a declining cap covering 85% of the State's GHG emissions in furtherance of California's mandate to reduce GHG emissions to 1990 levels by 2020. The 2018 amendments to the Program were made following AB 398 to support achievement of the SB 32 reduction target. The Proposed Amendments contain caps that adjust 2027-2030 annual allowance budgets and post-2030 annual allowance budgets pursuant to AB 32, SB 32, AB 398, AB 1279, and AB 1207.

2. Maintain and continue reductions in GHG emissions aligned with the requirements of AB 32, and support achievement of the 2030 GHG reduction target established by SB 32 (AB 1207)

3. Support achievement of the state's long-term climate objectives, including reducing anthropogenic GHG to 85% below 1990 levels and achieving GHG neutrality by 2045 (AB 1279; Executive Order B-55-18) consistent with the 2022 Scoping Plan Update (AB 398 and AB 1207).

4. Support flexible compliance: Limit program costs, and ensure cost-effective GHG emissions reductions (AB 32, AB 398, and AB 1207).

5. Ensure liquidity and integrity for the Cap-and-Invest market (AB 32, AB 398, and AB 1207).

6. Ensure that allowance allocation to Electrical Distribution Utilities protects ratepayers and supports affordability (AB 32, AB 398, AB 1207).

7. Ensure consistent compliance obligations and minimize emissions leakage from imported electricity (AB 32, AB 398, and AB 1207).

8. Minimize emission leakage, consider affordability and support decarbonization of the industrial and fuels sectors (AB 32, AB 398, AB 1207).

9. Ensure the continued supply of approved offset credits as a cost-containment mechanism (AB 32, AB 398, and AB 1207).

10. Clarify and streamline implementation of the Cap-and-Invest Program (AB 32, AB 398, and AB 1207).

D. Alternatives Analysis

Detailed descriptions and analyses of each alternative are presented below. The analysis of each alternative includes a discussion of the degree to which the alternative meets the basic project objectives, the degree to which the alternative avoids a potentially significant impact identified in Chapter 4.0, and any environmental impacts that may result from the alternative.

The Cap-and-Invest Program must be developed and implemented in a manner consistent with multiple legal mandates specifically relating to CARB's climate programs (including the legislation described in Chapter 1.0, above). Despite these constraints in developing the Cap-and-Invest Program, staff is including the alternatives listed below, while noting the limitations of each potential alternative.

1. Alternative 1: No Project

a) Alternative 1 Description

As noted in the CEQA Guidelines, "the purpose of describing and analyzing a no-project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" (Title 14 CCR Section 15126.6(e)(1)). The No-Project Alternative also provides an important point of comparison to understand the potential environmental benefits and impacts of the other alternatives.

Under the No-Project Alternative, the current Cap-and-Invest Program would continue in its current state. Other CARB programs intended to reduce GHG emissions would also continue in accordance with their statutory authorities and adopted regulations, including the Low Carbon Fuel Standard (LCFS) and various mobile source-focused GHG, criteria pollutant, and air toxics reduction regulatory programs. However, the further refinements and stringency increases in the Proposed Amendments would not be implemented.

b) Alternative 1 Discussion

i) Objectives

Under the No-Project Alternative, the existing Cap-and-Invest Program would continue in its current state. This alternative would be similar to the Proposed Amendments in terms of types of compliance responses, but it would generally have a lesser degree of certain potential environmental impacts due to lower stringency of the Program and a lower level of ensuing compliance responses. As a continuation of the existing Cap-and-Invest Program, the No Project Alternative would meet some of the project objectives, but it would not meet all the project objectives.

The No-Project Alternative would not effectively meet Project Objective 2, maintain and continue reductions in GHG emissions, because it would not be designed to address the emissions reductions needed to meet the SB 32 2030 target of at least 40% below 1990 levels. This is because recent updates to the emissions inventory require amendments to the existing caps in order to ensure the Program is designed to meet the 2030 target. The No-Project Alternative would also not meet Project Objective 3, meet long-term climate objectives (including those established by AB 1279 and required by AB 1207), because it would not support the necessary and ambitious climate action needed to meet the state's long-term climate targets (especially those beyond 2030). The 2022 Scoping Plan Update identified a need to increase ambition to be on track to meet the AB 1279 2045 targets. The No-Project Alternative does not put the Program on the path to meet those statutory goals. The No-Project Alternative would also not meet the Project Objectives 4 through 10 as it would not make the changes necessary to accomplish those objectives. That includes needed revisions to allowance removals for offset usage, allowance allocation, market rules, and imported electricity provisions to support affordability, cost-effectiveness GHG reductions, minimize emissions leakage, ensure market integrity, ensure supply of compliance offsets and appropriate Program coverage including

Program design changes required by AB 1207. Therefore, the No-Project Alternative would not meet most of the basic project objectives.

ii) Environmental Impacts

The No-Project Alternative would be similar to the Proposed Amendments in terms of types of compliance responses, because the current Cap-and-Invest Program would remain in place. However, the No-Project Alternative would generally have less potential to result in certain environmental impacts due to lower stringency of the Program and a lower level of ensuing compliance responses.

The No-Project Alternative would result in somewhat reduced intensity of the compliance responses for the Proposed Amendments, set forth in Chapter 2.0 of this EIA. However, the similar compliance responses (which were analyzed in the 2018 Cap-and-Trade EA) would remain, as they are part of existing conditions. In other words, the core existing Cap-and-Invest Program (and associated significant impacts) would be present even if CARB does not adopt the Proposed Amendments. Therefore, while this alternative could reduce the severity of the significant environmental impacts, it would not be expected to avoid any of the existing significant environmental impacts already identified for the Cap-and-Invest Program. Furthermore, the No-Project Alternative would forgo the increased air quality and climate change related benefits provided by the Proposed Amendments.

2. Alternative 2: Facility-Specific Requirements

a) Alternative 2 Description

Under Alternative 2, the Cap-and-Invest Program as it exists today would be modified to place select facilities under facility-specific emission reduction requirements. Specifically, a subset of covered entities (for example, stationary sources in disadvantaged communities (DAC)), would be required to achieve onsite emissions reductions from a historical baseline level to 40% below that level by 2030 and 85% reduction through 2045, with potential interim targets. There would be no trading allowed for this subset of covered entities and this subset of covered entities would not be allowed to use compliance offset credits. In addition, free allowance allocation would not be provided to these facilities. While some flexibility would remain for each entity to decide how best to reduce GHG emissions, Alternative 2 would eliminate trading for over one-third of covered entities and would force emission reductions to be achieved by this subset of facilities on a facility-by-facility basis at a consistent rate over potential interim compliance periods. For some sectors, onsite emissions reductions could potentially be achieved through fuel switching and electrification of boilers but would likely be achieved at a higher cost. Another potential compliance path may include production decreases at certain facilities or facilities exiting the state. Facility-specific limits could also bring the potential for shifts or increases in total in-state emissions across facilities within a sector. This could result from decreasing production to meet prescriptive emission limits at facilities located in DACs, with that needed production replaced by less efficient facilities in that same sector that are not located in DACs, thus increasing emissions at the non-DAC facilities. Facilities

not located in DACs may, or may not, be as efficient as the facilities in DACs which would determine total state-level emissions impacts.

A facility-specific cap program design would require CARB to identify the specific facilities that would be covered by the program, conduct an appropriate analysis to support a specific cap for each facility, and consider whether the reduction requirements established to implement the declining cap for the facility would be cost-effective. A change in the size of the compliance market due to trade restriction also has potential adverse effects on price transparency and allowance price volatility.

Replacing a trading program with a different policy with no trading for a subset of the approximately 250 covered facilities would likely have economic impacts where some facilities in the same industry would not be allowed to trade or receive free allowance allocation. It may also disadvantage facilities that have already significantly invested in GHG emissions reductions and new facilities with innovative low-GHG processes, where there may be fewer opportunities to further reduce emissions from a starting benchmark. If there is no free allocation and no trading, the potential for emissions leakage could also increase relative to the Proposed Amendments for most industrial sectors. The Program also would need to incorporate both a new mechanism to mitigate any increased leakage risk and a new method to ensure non-trading facilities take action to reduce emissions. Options for alternate mechanisms to mitigate emissions leakage are limited but could potentially include a border-carbon adjustment mechanism. Additionally, a number of compliance pathways require long lead-times and permitting timeframes, and significant investment and retrofits, and thus it is unlikely that emissions reductions would occur at each facility at a consistent, declining rate.

b) Alternative 2 Discussion

i) Objectives

This alternative represents an approach to reducing GHG emissions that is not consistent with the current market-based design of the Cap-and-Invest Program or statutory requirements under AB 32, AB 398 and AB 1207; that is, trading of allowances would not be available, nor would free allowances or compliance offsets. While this alternative could potentially meet Objective 2 (maintain and continue reductions in GHG emissions) by requiring facility-by-facility reductions, it is not consistent with Objective 1 (continue the objectives of the Cap-and-Invest Program). This approach of facility-level mandates is substantially different than the overall objective of the Cap-and-Invest Program, consistent with the mandates of AB 32, to incentivize the marketplace to reduce GHG emissions with price signals and an overall, aggregate declining cap. Because it does not take advantage of market mechanisms, the approach is also likely to be less effective in achieving certain AB 32, AB 398 and AB 1207 objectives, such as cost-effectiveness, affordability, cost-containment and minimizing leakage (Objectives 4, 8, and 9). Because this alternative would add significant complexity to the Program it would also not be consistent with the objective of streamlining the Program (Objective 10). In addition, removing the trade component would make the Regulation inconsistent with legislation regarding offset credits and facilitation of linkage with other WCI markets

(Objective 1). Moreover, having far fewer entities participating in trading in the Program may impact market liquidity and allowance price volatility (Objective 5). Consequently, Alternative 2 may achieve some, but not most, of the basic objectives of the Proposed Amendments. Alternative 2 therefore fails to achieve most of the project objectives. However, the inclusion of this alternative addresses recommendations made by some interested parties.

ii) Environmental Impacts

The types of impacts that would occur under Alternative 2 are similar to those described in Chapter 4.0, because the reasonably foreseeable compliance responses that could be implemented by covered entities under the existing Cap-and-Invest Program and the Proposed Amendments could also be implemented to achieve facility-specific GHG reduction targets. However, the compliance responses could occur at a different rate and likely at a higher cost. There would be less (or no) environmental impacts related to offset projects, because the opportunity to purchase offset credits as a mechanism for meeting the cap would be limited. Thus, potential impacts resulting from the implementation of offset projects, including agricultural and forestry resources, biological resources, cultural resources, land use and planning, noise, and transportation and traffic, would be reduced. While very unlikely to occur, as described in Chapter 4.0 above, CARB is unable to conclude with absolute certainty that localized emissions increases would not occur under the Proposed Amendments. This alternative could help reduce or avoid the very unlikely, but potential, localized emissions impacts near regulated facilities that are within the subset of facilities that may not engage in the market-based trading approach to compliance under the Proposed Amendments, especially if some facilities shift production to other facilities or out-of-state.

As discussed above, this alternative may result in some in-state facilities choosing to decrease output. The environmental impacts of decreased output would contribute to those products and corresponding environmental impacts occurring at facilities outside of the subset with facility-specific requirements, which could be less efficient and/or outside of California. Depending on the available options for minimizing emissions leakage (as discussed above), this type of emissions leakage could result in higher total GHG emissions and greater total environmental impacts.

3. Alternative 3: Update Allowance Budgets to 40% below 1990 levels in 2030 through reductions in Cost Containment

a) Alternative 3 Description

Alternative 3 is a less stringent alternative that would be largely similar to the Proposed Amendments, but the Cap-and-Invest Program budgets would be amended to remove the minimum number of allowances required to meet the SB 32 target of 40% below 1990 levels. Recent updates in the GHG Emission Inventory require updates to the existing Program allowance budgets to align with the 2030 GHG target, and in this alternative these allowance reductions would be taken from the Program's cost containment mechanisms: the allowance price containment reserve and price ceiling

account. This approach would effectively maintain the current proportion of the California state-owned allowances available for allocations and auctions through 2030. The number of allowances available for auction and allocation would remain relatively stable despite the adjustments of the overall allowance budgets. This alternative represents a less stringent approach to amending the Cap-and-Invest Program and may decrease the adoption of emissions-reducing technologies, delaying or preventing some GHG emissions reductions from occurring when compared to the Proposed Amendments and long-term could impact the cost-containment capability of the Program. This would most likely result in failing to achieve the GHG reductions necessary to meet the 2045 climate targets established by AB 1279.

b) Alternative 3 Discussions

i. Objectives

Under Alternative 3, the existing Cap-and-Invest Program would continue, and therefore it would meet some of the project objectives. However, the annual allowances budgets in this alternative would not support the long-term price signal that is required to encourage capital investments for new GHG reductions technologies (Objective 2). This alternative also would not support California's ability to meet the State's 2045 reduction target and long-term climate objectives (Objective 3). Because the adjustments of allowance budgets in this alternative would be achieved through removal of allowances in the APCR and price ceiling account, this alternative may also compromise the cost containment capability of the Program (Objective 4).

ii) Environmental Impacts

Alternative 3 would also be similar to the Proposed Amendments, in terms of compliance responses and potential environmental impacts. This alternative may avoid some environmental impacts identified in this Draft EIA, because it would adopt an approach that is less stringent than the Proposed Amendments. However, the less stringent allowance budgets under this alternative would be expected to result in lower market prices for allowances than under the Proposed Amendments, which may be insufficient to support achievement of the State's long-term GHG emission reduction targets. Furthermore, under this alternative, the proposed adjustments to allowance budgets would be addressed by removal of allowances in the APCR and price ceiling account, and so entities would be unlikely to experience an immediate impact in the available allowances despite the adjustment. This may further reduce and delay the market price signal associated with the alternative. Lower market prices for allowances could in turn reduce the incentives for activities that would result in direct emissions reductions. This could delay or slow construction activity and process changes directed at reducing GHG emissions from regulated facilities, which could avoid or reduce construction- and operation-related impacts from such new or modified facilities. The alternative could render some GHG reduction technologies not cost-effective until some future time when fewer allowances are available in the market and the allowance costs increase. Due to the higher GHG emissions target and removals from the APCR, this alternative is expected to achieve fewer GHG emissions reductions and reduce GHG

emissions at a slower pace than the Proposed Amendments. This alternative may help reduce or avoid some of the identified significant effects of the Proposed Amendments on the environment, as it would lessen the degree of the compliance responses to some extent. However, given that this alternative ultimately involves similar compliance responses as the Proposed Amendments (at a somewhat reduced intensity), it remains unclear to what extent this alternative would avoid or substantially reduce significant effects of the Proposed Amendments on the environment.

4. Alternatives Considered but Rejected

Additional alternatives were considered during development of the alternatives to the Proposed Amendments. CEQA Guidelines Section 15126.6(c) includes three factors that may be used to eliminate alternatives from detailed consideration in an EIR: "i. failure to meet most of the basic project objectives; ii. Infeasibility, or iii. Inability to avoid significant environmental impact."

The primary element of the Proposed Amendments is removing allowances from future Program allowance budgets to reflect the GHG emissions reductions needed to meet State targets for 2030 and 2045 and align with the latest AB 32 GHG Emissions Inventory. While the statutory targets for 2030 and 2045 are to reduce State GHG emissions by at least 40% and 85% relative to 1990 levels, the Proposed Amendments put forth future allowance budgets that increase stringency post-2030, in accordance with 2022 Scoping Plan Update modeling showing the need to accelerate the pace of reductions to meet 2045 targets. However, a range of future Cap-and-Invest Program allowance budgets and approaches were considered for meeting the statutory GHG emissions reduction targets. Staff specifically considered another possible alternative for revised allowance budgets, which was informed by public input and prior analysis from the 2022 Scoping Plan Update: a scenario removing allowances from annual budgets that support a 55% GHG emissions reduction target for 2030. This alternative considered includes post-2030 allowance budgets that support achieving an 85% GHG emissions reduction target by 2045.

The 55% alternative would remove approximately 390 million allowances from current 2027-2030 Program budgets to support meeting a 55% reduction in GHG emissions relative to 1990 levels by 2030. While this alternative could result in greater GHG emissions reductions, it was rejected because the pace of pre-2030 GHG emissions reductions may produce negative economic consequences that may be avoided under the Proposed Amendments while still meeting the State's climate targets. In adopting climate regulations, AB 32 requires CARB to minimize emissions leakage to ensure reduction of GHG emissions and support retention of production within the state (Objective 8), limit program costs, and ensure cost-effective reductions (Objective 4). The 55% alternative failed to meet these basic project objectives and was therefore rejected.

E. Environmentally Superior Alternative

If the No Project Alternative is the environmentally superior alternative, CEQA provides that the EIR "…shall also identify an environmentally superior alternative among the other alternatives." (CCR Section 15126.6[e][2]). The No Project Alternative (Alternative 1)

would be environmentally superior for all environmental resource areas other than GHGs and air quality. Because an environmental objective of the Proposed Amendments is to ultimately reduce GHG emissions and because the No Project Alternative does not deliver that substantial environmental benefit as well as the Proposed Amendments, Alternative 1 is not considered the environmentally superior alternative.

Alternative 2 would alter the requirements of the Cap-and-Invest Program and remove the opportunity for covered entities to trade emissions for facilities in certain areas. Covered entities would control their own GHG emissions reductions, with the exception of entities located in DACs. Alternative 2 would not meet many of the objectives of the Proposed Amendments; however, the adverse environmental impacts associated with, new infrastructure, and mining associated with minerals/metals to power on- and off-site battery storage systems would be reduced for various resource areas including biological resources, cultural resources, aesthetics, hydrology and water quality, geologic resources, and wildfire risk. However, given that this alternative limits the ability of certain facilities to trade compliance instruments, and given the associated potential for emissions leakage as a result of the facility-specific limitations of this alternative, the beneficial impacts to global climate change and air quality would likely not be realized to the same degree as under the Proposed Amendments.

Alternative 3 is a less stringent version of the Proposed Amendments and meets the targets of SB 32 (i.e., a 40% reduction in statewide GHG emissions by 2030), rather than the more stringent trajectory needed to support the long-term targets of AB 1279. Many of the reasonably foreseeable compliance responses described in Chapter 2 above would occur under Alternative 3. However, the degree to which impacts would occur would be slightly less, or impacts would occur later than what would be assumed for the Proposed Amendments. Alternative 3 would meet several of the Proposed Amendments' objectives; however, given that AB 1207 and the 2022 Scoping Plan Update identifies the Cap-and-Invest Program as an essential regulatory instrument to meet the State's long-term GHG reduction goals, Alternative 3's less ambitious mandate would, overall, not be sufficient to support achievement of the State's 2045 targets. Alternative 3 would result in fewer beneficial impacts to GHG emissions and air pollution by comparison, while resulting in many of the same impacts to other resource areas, though to a lesser degree.

The key environmental goals of the Proposed Amendments are related to achieving emissions reductions of GHG to meet the State's long-term GHG reduction goals as well as reduction in criteria pollutant emissions to promote healthy ambient air quality and attainment of the CAAQS and NAAQS. Given these goals, Alternative 3 is considered the environmentally superior alternative—although the Proposed Amendments remain environmentally superior still to Alternative 3 when considering their ambitious GHG and air quality emissions reductions. Although Alternative 3 would not achieve as many benefits as the Proposed Amendments, it meets more of the environmental-related benefits than Alternative 2. With additional weighting of the environmental benefits, which are a cornerstone of the Proposed Amendments, Alternative 3 is the environmentally superior of the alternatives considered to the Proposed Amendments. However, as noted above, the Proposed Amendments are still considered to be environmentally superior to Alternative 3 given their deeper emissions reductions.

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