

1 **3.8 GREENHOUSE GAS EMISSIONS**

GREENHOUSE GAS EMISSIONS -Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 **3.8.1 Environmental Setting**

3 Greenhouse Gases (GHGs), which are defined as any gas that absorbs infrared
 4 radiation in the atmosphere, include, but are not limited to, water vapor, CO₂, methane
 5 (CH₄), nitrous oxide (N₂O), and fluorocarbons. These GHGs lead to the trapping and
 6 buildup of heat in the atmosphere near the earth’s surface, commonly known as the
 7 Greenhouse Effect. The atmosphere and the oceans are reaching their capacity to
 8 absorb CO₂ and other GHGs without significantly changing the earth’s climate. Unlike
 9 criteria pollutants and TACs, which are pollutants of regional and local concern, GHGs
 10 and climate change are a local, regional, and global issue.

11 As stated on California’s Climate Change Portal (www.climatechange.ca.gov/Climate):

12 Climate change is expected to have significant, widespread impacts on
 13 California's economy and environment. California's unique and valuable natural
 14 treasures - hundreds of miles of coastline, high value forestry and agriculture,
 15 snow-melt fed fresh water supply, vast snow and water fueled recreational
 16 opportunities, as well as other natural wonders - are especially at risk.

17 In addition, the Intergovernmental Panel on Climate Change (IPCC), in the section of its
 18 Fifth Assessment Report by Working Group II, “Climate Change 2014: Impacts,
 19 Adaptation, and Vulnerability,” (IPCC 2014; released March 31, 2014) specific to North
 20 America (Chapter 26), stated in part:

21 **North American ecosystems are under increasing stress from rising**
 22 **temperatures, CO₂ concentrations, and sea-levels, and are particularly**
 23 **vulnerable to climate extremes (very high confidence).** Climate stresses
 24 occur alongside other anthropogenic influences on ecosystems, including land-
 25 use changes, non-native species, and pollution, and in many cases will
 26 exacerbate these pressures (very high confidence). [26.4.1; 26.4.3]. Evidence
 27 since the Fourth Assessment Report (IPCC 2007) highlights increased
 28 ecosystem vulnerability to multiple and interacting climate stresses in forest
 29 ecosystems, through wildfire activity, regional drought, high temperatures, and
 30 infestations (medium confidence) [26.4.2.1; Box 26-2]; and in coastal zones due

1 to increasing temperatures, ocean acidification, coral reef bleaching, increased
2 sediment load in run-off, sea level rise, storms, and storm surges (*high*
3 *confidence*) [26.4.3.1].

4 California has already been affected by climate change: sea level rise, increased
5 average temperatures, more extreme hot days and increased heat waves, fewer shifts
6 in the water cycle, and increased frequency and intensity of wildfires. Higher sea levels
7 can result in increased coastal erosion, more frequent flooding from storm surges, and
8 increased property damage. Additionally, loss of wetland habitats, weakened ecosystem
9 services and reduced waterfront public access options is also anticipated. These effects
10 are expected to increase with rising GHG levels in the atmosphere.

11 Projected climate change impacts on California include: decreases in the water quality
12 of surface water bodies, groundwater, and coastal waters; sea level rise and increased
13 coastal erosion (which may have a secondary effect such as uncovering hazards such
14 as occurred in March 2014 along the Santa Barbara coastline); increased flooding and
15 fire events; decline in aquatic ecosystem health; lowered profitability for water-intensive
16 crops; changes in species and habitat distribution; and impacts to fisheries (California
17 Regional Assessment Group 2002).

18 According to the IPCC, the concentration of CO₂, the primary GHG, has increased from
19 approximately 280 parts per million (ppm) in pre-industrial times to well over 380 ppm.
20 The current rate of increase in CO₂ concentrations is about 1.9 ppm/year; present CO₂
21 concentrations are higher than any time in at least the last 650,000 years. To meet the
22 statewide GHG reduction target for 2020, requiring California to reduce its total
23 statewide GHG emissions to the level they were in 1990 (Health & Safety Code, §
24 38550), and the 2050 goal of 80 percent below 1990 levels (Executive Order S-3-05),
25 not only must projects contribute to slowing the increase in GHG emissions, but,
26 ultimately, projects should contribute to reducing the State's output of GHGs. To reach
27 California's GHG reduction targets, it is estimated that per capita emissions will need to
28 be reduced by slightly less than 5 percent per year during the 2020 to 2030 period, with
29 continued reductions required through midcentury.

30 In its 2008 "Report on Climate Change: Evaluating and Addressing Greenhouse Gas
31 Emissions from Projects Subject to the California Environmental Quality Act," (CAPCOA
32 2008) the California Air Pollution Control Officers Association (CAPCOA) stated:

33 "[w]hile it may be true that many GHG sources are individually too small to make
34 any noticeable difference to climate change, it is also true that the countless
35 small sources around the globe combine to produce a very substantial portion of
36 total GHG emissions."

37 The quantification of GHG emissions associated with a project can be complex and
38 relies on a number of assumptions. GHG emissions are generally classified as direct

1 and indirect. Direct emissions are associated with the production of GHG emissions
 2 from the immediate project area. These include the combustion of natural gas as well as
 3 the combustion of fuel in engines and construction vehicles used on the site. In addition,
 4 direct emissions include fugitive emissions from valves and connections of equipment
 5 used during project implementation or throughout the project life. Indirect emissions
 6 include the emissions from vehicles (both gasoline and diesel) delivering materials and
 7 equipment to the site (e.g., haul trucks).

8 **3.8.2 Regulatory Setting**

9 3.8.2.1 Federal and State

10 Federal and State laws and regulations pertaining to this issue area and relevant to the
 11 Project are identified in Table 3.8-1 and summarized below.

Table 3.8-1. Laws, Regulations, and Policies (GHGs)

U.S.	Federal Clean Air Act (FCAA) (42 USC 7401 et seq.)	In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO ₂) is an air pollutant as defined under the FCAA, and that the USEPA has authority to regulate GHG emissions.
CA	California Global Warming Solutions Act of 2006 (AB 32)	Under AB 32, CARB is responsible for monitoring and reducing GHG emissions in the State and for establishing a statewide GHG emissions cap for 2020 that is based on 1990 emissions levels. CARB (2009) has adopted the AB 32 Climate Change Scoping Plan (Scoping Plan), which contains the main strategies for California to implement to reduce CO ₂ equivalent (CO ₂ e) emissions by 169 million metric tons (MMT) from the State’s projected 2020 emissions level of 596 MMT CO ₂ e under a business-as-usual scenario. The Scoping Plan breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the State’s GHG inventory, but does not directly discuss GHG emissions generated by construction activities. The regulatory steps established by AB 32 required CARB to: <ul style="list-style-type: none"> • Adopt early action measures to reduce GHG emissions; • Establish a statewide GHG emissions cap for the year 2020 based on 1990 emissions levels; • Develop mandatory reporting rules for significant sources of GHG emissions; • Adopt a scoping plan indicating how emissions reductions will be achieved via regulations, market mechanisms and other actions; and • Adopt the regulations needed to achieve the maximum technologically feasible and cost-effective reductions in GHGs.
CA	CARB Scoping Plan in Support of AB 32 and Staff Proposal for Recommended Approaches for Setting Interim Significance	In 2008, CARB developed a Draft Scoping Plan for Climate Change, pursuant to AB32. Key elements of the Scoping Plan for reducing California’s GHGs to 1990 levels by 2020 include: <ul style="list-style-type: none"> • Expansion and strengthening of existing energy efficiency programs and building and appliance standards; • Expansion of the Renewables Portfolio Standard to 33 percent; • Development of a California cap-and-trade program that links with other Western Climate Initiative Partner programs to create a regional market system; • Implementation of existing State laws and policies, including California’s clean

	<p>Thresholds for Greenhouse Gases</p>	<p>car standards, goods movement measures, and the Low Carbon Fuel Standard; and</p> <ul style="list-style-type: none"> • Targeted fees to fund the State’s long-term commitment to AB 32 administration. <p>The proposed Scoping Plan was released on October 15, 2008, and approved at the Board hearing on December 12, 2008. In August 2011, the Scoping Plan was re-approved by the Board, and includes the Final Supplement to the Scoping Plan Functional Equivalent Document. In October 2008, the CARB created a Preliminary Draft Staff Proposal - Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the CEQA (CARB 2008). In this document, the CARB discussed the dangers of global climate change and the need for a defined set of significance thresholds for operations, construction and transportation; and provides a preliminary proposal for a threshold of significance for GHG emissions. The threshold consists of a quantitative threshold of 7,000 metric tons of CO₂ equivalent per year (MTCO₂e/year) for operational emissions (excluding transportation), and performance standards for construction and transportation emissions.</p>
<p>CA</p>	<p>Senate Bills (SB) 97 and 375</p>	<p>Pursuant to SB 97, the State Office of Planning and Research prepared and the Natural Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Effective as of March 2010, the revisions to the CEQA Environmental Checklist Form (Appendix G) and the Energy Conservation Appendix (Appendix F) provide a framework to address global climate change impacts in the CEQA process; State CEQA Guidelines section 15064.4 was also added to provide an approach to assessing impacts from GHGs. Those CEQA Guidelines amendments clarified several points, including the following:</p> <ul style="list-style-type: none"> • Lead agencies must analyze the greenhouse gas emissions of proposed projects, and must reach a conclusion regarding the significance of those emissions. (See CEQA Guidelines § 15064.4.) • When a project’s GHGs may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions. (See CEQA Guidelines § 15126.4(c).) • Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change. (See CEQA Guidelines § 15126.2(a).) • Lead agencies may significantly streamline the analysis of greenhouse gases on a project level by using a programmatic GHG reduction plan meeting certain criteria. (See CEQA Guidelines § 15183.5(b).) • CEQA mandates analysis of a proposed project’s potential energy use (including transportation-related energy), sources of energy supply, and ways to reduce energy demand, including through the use of efficient transportation alternatives. (See CEQA Guidelines, Appendix F.) • SB 375 (effective January 1, 2009) requires CARB to develop regional reduction targets for GHG emissions, and prompted the creation of regional land use and transportation plans to reduce emissions from passenger vehicle use throughout the State. The targets apply to the regions covered by California’s 18 metropolitan planning organizations (MPOs). The 18 MPOs must develop regional land use and transportation plans and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.
<p>CA</p>	<p>Executive Orders (EOs)</p>	<p>Under EO S-01-07, which set forth a low carbon fuel standard for California, the carbon intensity of California’s transportations fuels is to be reduced by at least 10 percent by 2020.</p> <p>EO S-3-05 established statewide GHG emission targets of reducing emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below the 1990 level by 2050.</p>

1 3.8.2.2 Local

2 The SBCAPCD is the local agency primarily responsible for attaining the air quality
3 standards established by the CARB and the USEPA. Given the global nature of climate
4 change resulting from GHG emissions, GHG emission impacts are inherently
5 cumulative in nature. The determination whether a project's GHG emissions impacts are
6 significant depends on whether emissions would be a cumulatively considerable
7 contribution to the significant cumulative impact. SBC interim guidance recommends
8 that the Bay Area Air Quality Management District (BAAQMD) adopted thresholds of
9 significance for GHG emissions be used as a guideline in evaluating SBC projects. The
10 BAAQMD has adopted a significance threshold for industrial projects of 10,000
11 MTCO₂e/yr. CEQA allows lead agencies, when adopting significance thresholds, to
12 consider thresholds of significance previously adopted or recommended by other public
13 agencies, where supported by substantial evidence (State CEQA Guidelines § 15064.7,
14 subd. (c)).

15 Neither the SBC nor the SBCAPCD has adopted thresholds for determining if the
16 projected GHGs of a proposed project constitute a considerable contribution to global
17 climate change. However, based on the small percentage of GHG emissions associated
18 with the Project when compared to annual GHG emissions produced statewide and
19 interim thresholds, project-related GHG emissions are not expected to substantially
20 contribute to a cumulatively significant impact on climate change. The CEQA lead
21 agency is responsible for making significance determinations on a case-by case basis.
22 SBC interim guidance recommends that the BAAQMD adopted thresholds of
23 significance for GHG emissions be used as a guideline in evaluating SBC projects.

24 **3.8.3 Impact Analysis**

25 ***a) Generate greenhouse gas emissions, either directly or indirectly, that may have***
26 ***a significant impact on the environment?***

27 ***b) Conflict with an applicable plan, policy or regulation adopted for the purpose***
28 ***of reducing the emissions of greenhouse gases?***

29 **a) and b). Less than Significant with Mitigation.** CO₂ is the main GHG that will be
30 emitted from the Project. Emissions of GHGs from Project combustion sources were
31 estimated based on the Port of Long Beach Air Emissions Inventory for marine sources,
32 California Emissions Estimator Model (CalEEMod) for off-road industrial sources, and
33 EMFAC2011 for onroad diesel truck sources. Estimated emissions of GHGs are
34 presented in Table 3.8-2. Since the Project would result in GHG emissions that would
35 be well below the SBC interim guidance threshold of 10,000 MTCO₂e/year, impacts
36 associated with GHGs would be less than significant. Instituting **MMs AQ-1: Emissions**

- 1 **Reporting Plan** and **AQ-2: Low-Sulfur Fuels** (see Section 3.3, Air Quality) will also
- 2 minimize impacts associated with GHGs.

Table 3.8-2. Estimated GHG Total Project Emissions

AIR EMISSIONS SUMMARY		CO ₂	N ₂ O	CH ₄	MTCO ₂ E
Onshore	Pounds/Day	24,211.90	1.98	12.06	1,139.19
	Tons	1,199.26	0.12	0.66	
Offshore Platform Work	Pounds/Day	34,887.58	0.26	7.40	1,195.77
	Tons	1,308.28	0.01	0.28	
Cable Retrieval and Installation (Marine Vessel Emissions)	Pounds/Day	290,292.70	13.74	10.44	3,907.31
	Tons	4,235.05	0.20	0.15	
Demolition activities exempt from offsets / cable retrieval of out of service cables	Pounds/Day	Included in Offshore Above			1,347.10
	Tons	1,460.13	0.07	0.05	
TOTAL - PROJECT AIR EMISSIONS		CO₂	N₂O	CH₄	MTCO₂E
TOTAL EMISSIONS TONS/YR		8,202.73	0.40	1.14	7,589.37
TOTAL CUMULATIVE EMISSIONS TONS/YR		6,742.60	0.33	1.09	6,242.27

3 3.8.4 Mitigation Summary

- 4 ExxonMobil is proposing the following mitigation measures to be implemented to further
- 5 reduce and minimize impacts to air quality and GHG emissions.
- 6
 - MM AQ-1: Emissions Reporting Plan (see Section 3.3.3).
 - MM AQ-2: Low-Sulfur Fuels (see Section 3.3.3).
- 7