

November 1, 2019

Mr. Shannon Hatcher  
Air Pollution Specialist  
California Air Resources Board  
1001 I Street  
P.O. Box 2815  
Sacramento, CA 95812 - 2815

Re: **Inglewood Basketball and Entertainment Center Project  
State Clearinghouse No. 2018021056  
Greenhouse Gas Emissions Offset Commitment Approach**

Dear Mr. Hatcher,

Murphy's Bowl LLC (the "Applicant") submitted an application seeking certification of the Inglewood Basketball and Entertainment Center project (the "Project") for streamlining of judicial review under the California Environmental Quality Act pursuant to AB 987 on January 2, 2019, and submitted supplemental materials on June 12, 2019 (collectively, the "AB 987 Application"). Attachment F to the AB 987 Application is a binding and enforceable agreement between the Applicant and the City of Inglewood (the "City") that all environmental measures required to certify the Project under AB 987, including the commitments herein, shall be imposed by the City as conditions of approval that will be monitored and fully enforceable by the City for the life of the obligation.

This letter is provided to reaffirm the Applicant's commitment and to provide reassurance to California Air Resources Board ("CARB") that (1) 100% of the GHG emissions associated with the Project will be reduced such that the project results in no net additional emissions (the "Net Zero Standard"), and (2) not less than 50% of the GHG emissions reductions will be achieved through local, direct measures, and not more than 50% of the GHG emissions reductions will be achieved through the purchase of GHG offset credits. This letter is a revision of our earlier draft and reflects subsequent discussions and joint agreement, subject to CARB's review of the calculations included in this letter and its accompanying materials.

Thus, this reiterates the AB 987 Application's statement of compliance with all the directives of Public Resources Code Section 21168.6.8, including without limitation those requiring that the Project demonstrate that (1) it will meet the Net Zero Standard, (2) not less than 50% of the GHG emissions reductions necessary to achieve that requirement shall be from local, direct GHG emissions reductions measures, and (3) it will include a transportation demand management ("TDM") program that, upon full implementation, will achieve and maintain a 15% reduction in the number of vehicle trips, collectively, by attendees, employees, visitors, and customers as compared to operations absent the TDM program.

## Executive Summary

The Applicant understands that CARB staff has been reviewing the projected GHG emissions in the AB 987 Application and will confirm the GHG emission factors used to estimate construction and operational emissions. Although the AB 987 Application's Project GHG emissions calculations are supported by substantial evidence and reasonably rely upon expert opinion, including detailed analyses based on reasonable projections of the number of market-shifted versus net new non-NBA events at the Project Arena and associated backfill of vacated LA Clippers event days at the Staples Center, CARB has requested that the Applicant provide calculations and an emissions reduction methodology for a hypothetical 100% backfill GHG emissions scenario that would assume that all vacated LA Clippers and market-shifted non-NBA events at the Project Arena would be replaced by other events at Staples Center and other existing venues in the Los Angeles region.

This commitment letter includes, as Exhibit A, a calculation of the additional GHG emissions that would result from that hypothetical scenario, and includes commitments to (1) achieve all of the total GHG emissions reductions, including the 50% local direct emissions reduction measures, to achieve the Net Zero Standard based upon the methodology and calculations in the AB 987 Application; (2) purchase additional carbon offset credits to achieve 50% of the additional GHG emissions reductions that would be necessary under the hypothetical 100% backfill GHG emissions scenario; (3) implement several specific additional local direct measures to achieve substantial emissions reductions above those necessary under the AB 987 Application's calculations which, together with the additional carbon offset credits identified above, would achieve approximately 95% of the emissions reductions that would be necessary under the hypothetical 100% backfill GHG emissions scenario, and (4) if any of the additional 5% of emissions reductions under the hypothetical scenario are shown to be necessary under the verification process described below, to identify and implement the additional local direct measures that would be necessary to achieve those reductions.

In order to provide further assurance to CARB that the Net Zero Standard and local direct GHG emissions reduction measures requirement of AB 987 will be met, the Applicant has also committed to an annual verification process under which the Applicant would submit to the City, with a copy provided to CARB, annual verification reports. These reports would (1) determine the actual number of incremental events in the regional event market that are directly or indirectly attributable to the Project Arena and the related GHG emissions, (2) report on the implementation and efficiency of local direct emissions reduction measures over the previous year, and (3) identify any new local direct measures to be implemented beginning in the following year to account for any potential shortfall in emissions reductions.

If an annual verification report shows that emissions reductions achieved through emissions reductions measures implemented in the previous year exceed the amount of actual GHG emissions for that year as calculated in the report, such excess emissions reductions shall be credited toward future years and such credit shall be reflected in subsequent GHG Verification Reports.

## AB 987 Commitments

The AB 987 Application includes the Applicant's commitment to implement the following local, direct measures to mitigate 50% of the GHG emissions associated with the Project, as described and calculated in the AB 987 Application, by the end of the first NBA regular season or June of the first NBA regular season, whichever is later, during which an NBA team has played at the Project Arena, with annual reporting thereafter:

- (1) LEED Gold certification;
- (2) Implementation of the IBEC TDM Program; and
- (3) To the extent necessary to achieve the requirement that 50% of the GHG emissions reductions be from local, direct measures, the Applicant has also committed to one or more additional local, direct measures potentially including, but not limited to:

(A) Additional renewable energy production through installation of additional photovoltaic systems as carports on a third parking structure; or

(B) Purchase of electricity for onsite consumption through the Southern California Edison ("SCE") Green Rate which facilitates SCE's purchase of renewable energy to meet the needs of Green rate participants from solar renewable developers within the SCE service territory, SCE's Community Renewables Program, similar opportunities for renewable electricity that could emerge in the future or, if available after approval by applicable regulatory agencies, on-site use of renewable natural gas ("Renewable Energy").

As provided in Public Resources Code Section 21168.6.8 and set forth in the AB 987 Application, after satisfaction of the 50% local, direct standard, the Applicant will achieve the additional GHG emission reductions necessary to achieve the remaining reductions required under the AB 987 Application's calculations through the following: (1) the remaining LEED Gold measures in excess of 50% that under AB 987 would not be considered local, direct measures; (2) the purchase of offset credits; and/or (3) co-benefits from emission reduction measures for nitrogen oxides (NO<sub>x</sub>) and particulate matter with aerodynamic diameter less than 2.5 microns (PM<sub>2.5</sub>).

The AB 987 Application's Project GHG emissions calculations are supported by substantial evidence, including detailed analyses based on reasonable projections of the number of market-shifted versus net new events at the Project Arena and associated backfill of vacated event days at the Staples Center. These analyses, included as Exhibits 1 and 2 to Attachment 3 of the June 12, 2019, supplemental submittal, were prepared by CSL International, experts in the sports, entertainment, visitor, and convention industries.

Notwithstanding that clarity, at CARB's request, Exhibit A to this commitment letter provides calculations and an emissions reduction methodology for a hypothetical 100% backfill GHG emissions scenario that assumes that 100% of the LA Clippers games and market-shifted non-NBA events moving from existing venues described in the analysis included as Attachment 3, Exhibit 2 to the June 12, 2019, supplemental submittal (the "Existing Venues") to the Project Arena are replaced (*i.e.*, backfilled) with other non-NBA events at the Existing Venues, even though there is no evidence to support any possibility of such a scenario occurring.

Under that hypothetical 100% backfill scenario, the Project would result in an additional 146,052 MT CO<sub>2e</sub> of GHG emissions above the total calculated in the AB 987 Application, for a total of 304,683 MT C<sub>2</sub>O<sub>e</sub> over the 30-year operational life of the Project. The Applicant commits to purchasing sufficient carbon offset credits accounting for a reduction of 73,026 MT CO<sub>2e</sub> of GHG emissions (*i.e.*, 50% of the additional GHG emissions reductions that would be necessary under that hypothetical 100% backfill GHG emissions scenario) prior to the issuance of the final certificate of occupancy for the Project Arena.

The Applicant also commits to the following on- and off-site GHG emissions reduction measures (estimated to achieve 58,227 MT CO<sub>2e</sub> of emissions reductions), which shall be imposed by the City of Inglewood as Project conditions of approval:

### **On-Site Local Direct Measures**

- *IBEC Smart Parking System.* The Applicant shall install systems in the on-site parking structures serving the Project to reduce vehicle circulation and idle time within the structures by more efficiently directing vehicles to available parking spaces.
- *IBEC On-Site Electric Vehicle Charging Stations.* The Applicant shall install a minimum of three hundred and thirty (330) electric vehicle charging stations (EVCS) within the three proposed on-site parking structures serving the Project for use by employees, visitors, event attendees, and the public.
- *IBEC Zero Waste Program.* The Applicant shall implement a waste and diversion program for operations of the Project, with the exception of the hotel, with a goal of reducing landfill waste to zero. Effectiveness of the program shall be monitored annually through the U.S. Environmental Protection Agency's WasteWise program or a similar annual reporting system.
- *Renewable Energy.* The Applicant shall reduce GHG emissions associated with energy demand of the Project Arena that exceeds on-site energy generation capacity by using Renewable Energy during Project operations for a period sufficient to achieve GHG emission reductions equal to approximately 2.5% of the total estimate of GHG emissions that could occur in the hypothetical 100% backfill emissions scenario.

### **Off-Site Local Direct Measures**

- *City of Inglewood Municipal Fleet Vehicles ZEV Replacement.* The Applicant shall enter into an agreement with the City of Inglewood to cover 100% of the cost of replacement of ten (10) municipal fleet vehicles that produce GHG emissions with Zero-Emissions Vehicles (ZEVs) and related infrastructure (e.g., EVCS) for those vehicles prior to the issuance of grading permits.
- *ZEV Replacement of Transit Vehicles Operating Within the City of Inglewood.* The Applicant shall enter into an agreement with the City of Inglewood to cover 100% of the cost of replacement of two (2) transit vehicles that operate within the City of Inglewood

that produce GHG emissions with ZEVs and related infrastructure (e.g., EVCS) for those vehicles prior to issuance of grading permits.

- *Local EV Charging Stations in the City of Inglewood.* Prior to the issuance of grading permits, the Applicant shall enter into agreements to install twenty (20) EVCS at locations in the City of Inglewood. These EVCS will be available for use by the public for charging electric vehicles.
- *City of Inglewood Tree Planting Program.* Prior to the issuance of grading permits, the Applicant shall develop or enter into partnerships with existing organizations to develop a program to plant one thousand (1,000 trees) within the City of Inglewood.

The Applicant shall implement all on-site local, direct measures identified above by the end of the first NBA regular season or June of the first NBA regular season, whichever is later, during which an NBA team has played at the Project Arena. All off-site, local, direct measures identified above must be in excess of any regulatory requirement or any previously planned action by the City of Inglewood that would have occurred otherwise.

The Applicant also has committed to a condition of approval requiring a verification process to confirm that (1) 100% of the actual GHG emissions resulting from the net new events at the Project Arena will be calculated and reduced such that the Net Zero Standard will be met, and (2) the 50% local, direct GHG reduction requirement will be met. This condition of approval will require the Applicant to verify the actual number and attendance of net new versus market shifted events and, if necessary, implement sufficient additional GHG emissions reduction measures, as described below, to ensure compliance with Public Resources Code Section 21168.6.8(b)(5).

The verification process will be conducted (using the same methodology as set forth in the AB 987 Application, or another approach proposed by the Applicant and deemed acceptable by the City of Inglewood and CARB staff) after each year that the Project Arena is operational over the life of the building, as follows:

- Commencing with the first quarter after the first full year of Project Arena operations and annually thereafter, the Applicant shall prepare and submit GHG Verification Reports to the City with a copy provided concurrently to CARB. Our understanding is that CARB may seek to provide input to the City.
- The initial GHG Verification Report shall determine the growth rate of events at the Existing Venues based upon data from 10 years (2014-2023) before the Project Arena becomes operational (the "Growth Rate"). Based on the Growth Rate, the initial GHG Verification Report shall determine the number and attendance of events that would likely have occurred at the Existing Venues without the Project in 2024-2033 ("Without Project Events").
- The GHG Verification Reports shall monitor and report the actual number and attendance of events that occur at the Project Arena and the Existing Venues between 2024-2033, as applicable ("Actual Events"). The annual GHG Verification Reports shall calculate the

difference between the number and attendance of Actual Events and Without Project Events for each year of operations to date, which difference represents the Project Arena's actual incremental effect on the number and attendance of events in the regional market, *i.e.*, at the Project Arena and Existing Venues ("Incremental Events"). The GHG Verification Reports shall then calculate the total incremental GHG emissions attributable to the Project Arena based upon the Incremental Events.

- The Project Arena's incremental effect on the number of events in the regional market is likely to stabilize after the first several years of Project operations, and in later years it is more likely that changes in the regional market for events could occur due to intervening, unrelated causes, such as the closure of an Existing Venue or the opening of new event venues in the region. For those reasons, the calculations of the number of Incremental Events in the GHG Verification Reports for any year after 2033 shall be based upon the number of Incremental Events reported for 2033, or the average number of Incremental Events reported for 2029-2033, whichever is higher.
- Each GHG Verification Report shall include verification that the GHG emissions reduction measures required to achieve the Net Zero Standard and 50% local, direct standards have been implemented, including local, direct measures identified in (a) the AB 987 Application, (b) this letter as additional commitments, and (c) previous GHG Verification Reports. Each GHG Verification Report shall identify the specific measures or strategies implemented and provide a calculation of the GHG emissions reductions achieved.
- Recognizing that the point of the GHG Verification Reports is to provide additional verification of the AB 987 Application's estimates of the GHG emissions from the Project and backfill events at other existing venues resulting from the Project, including from the Incremental Events that would occur, annual reporting of events in the GHG Verification Reports shall be adjusted to reflect or evaluate anomalies that could distort the accurate reporting of net new events attributable to the Project Arena such as the 2028 Olympics and related events, changes to the number or schedule of sports teams using Existing Venues for home games, closure of or major renovations to Existing Venues, or similar circumstances. For example:
  - 2028 Olympic events and related events shall be subtracted from the total of Actual Events.
  - Home games of existing or future sports teams at Existing Venues shall not be included in the totals of Without Project Events, Actual Events, or Incremental Events.
  - If an Existing Venue closes, the number of Without Project Events shall be adjusted to subtract the number of events attributable to that Existing Venue.
  - If an Existing Venue undergoes major renovations, the number of Without Project Events attributable to that Existing Venue shall be adjusted to reflect the

percentage of time during the year covered by the GHG Verification Report during which it was unavailable to host events.

- The GHG Verification Reports shall also include adjustments for any differences after buildout in the square footage of the Project's ancillary uses from the AB 987's Application's assumptions.

If any GHG Verification Report concludes that either (1) the total GHG emissions associated with the Project exceeds the amount addressed by the GHG emission reduction measures committed to in the AB 987 Application and the above additional emissions reduction commitments (*i.e.*, exceeds 289,120 MT CO<sub>2e</sub> of GHG emissions), or (2) GHG emissions reductions expected to be achieved from local, direct measures are below 50% of the total GHG emissions reductions necessary, the Applicant shall achieve additional GHG emissions reductions as necessary to meet the Net Zero Standard and/or the 50% local, direct reduction requirement of AB 987 ("Additional GHG Emissions Reductions"), as follows:

- Any Additional GHG Emissions Reductions (up to the remaining 15,563 MT CO<sub>2e</sub> that would be necessary under the hypothetical 100% backfill scenario) shall be achieved by not less than 50% local, direct GHG emissions reduction measures, which may include, but are not limited to, one or more of the following: energy audits and improvements for local buildings; and/or the purchase and use of Renewable Energy to meet on-site energy demands.
- The Applicant shall implement any additional local, direct measures necessary to achieve any Additional GHG Emissions Reductions within one year after the submittal of such GHG Verification Report.

If any GHG Verification Report concludes that the emissions reductions commitments described above are sufficient to achieve the Net Zero Standard and the 50% local, direct reduction requirement of AB 987, no Additional GHG Emissions Reductions shall be required to be identified in the GHG Verification Report or implemented. Any amount of GHG emissions reductions achieved that exceed the amount required to meet the Net Zero Standard and the 50% local, direct reduction requirement shall be credited toward future years and such credit shall be reflected in subsequent GHG Verification Reports. For example, the amount of renewable energy purchased as local, direct measures could be adjusted downward accordingly in future years, or such credit could be applied toward any shortfalls in achieving emissions reductions identified in subsequent verification reports.

With respect to carbon offset credits, the Applicant will, to the extent feasible, place the highest priority on the purchase of offset credits that produce emission reduction within the City or the boundaries of the South Coast Air Quality Management District. Carbon offset credits will be verified by a third party accredited by ARB, such as the American Carbon Registry, Climate Action Reserve, and Verra Carbon Standard. Carbon offset credits shall be purchased at a net present value although the contracts could propose acquiring the credits in advance of the emission-generating activities to be offset.

Contracts to purchase carbon offset credits for construction emissions will be entered into prior to the issuance of grading permits, and contracts to purchase carbon offset credits for operational emissions will be entered into prior to the issuance of the final certificate of occupancy for the Project Arena. Copies of the contract(s) shall promptly be provided to ARB, the Governor's office, and the City of Inglewood to verify that construction and operational emissions have been offset. Such contracts shall evidence the purchase of carbon credits in an amount sufficient to offset the remaining (after the GHG emissions reductions achieved through local, direct measures, LEED Gold measures, and co-benefits of NOx and PM2.5 emissions reduction measures) operational emissions.

Sincerely,

Murphy's Bowl LLC  
a Delaware limited liability company

  
By: Brandt Vaughan  
Its: Manager



## Exhibit A

At CARB's request, we are providing the following hypothetical example of a 100% backfill GHG emissions scenario over a 30-year operational period that assumes that 100% of the LA Clippers games and market-shifted non-NBA events moving from Existing Venues to the Project Arena are replaced (*i.e.*, backfilled) with other non-NBA events at the Existing Venues. There is no evidence to support the possibility that this hypothetical 100% backfill scenario could occur.

As shown in Table 1 below, total net new direct Project emissions from construction and operation and indirect Project emissions that could result from 100% backfill in this hypothetical 100% backfill GHG emissions scenario are estimated to be 304,683 MT C<sub>2</sub>O<sub>e</sub> over the 30-year operational life of the Project.

**Table 1. Hypothetical 100% Backfill Emissions Scenario Net New Emissions**

<b>Year</b>	<b>IBEC Net New Emissions<sup>a</sup> [MT CO<sub>2</sub>e]</b>	<b>Additional Emissions for Hypothetical 100% Backfill Emissions Scenario<sup>b</sup> (MT CO<sub>2</sub>e)</b>	<b>Net Emissions Hypothetical 100% Backfill Emissions Scenario<sup>c</sup> (MT CO<sub>2</sub>e)</b>
2021	2,625	-	2,625
2022	7,164	-	7,164
2023	6,228	-	6,228
2024	6,398	3,437	9,835
2025	10,852	6,936	17,788
2026	10,177	6,687	16,864
2027	9,572	6,457	16,029
2028	9,027	6,241	15,268
2029	8,533	6,038	14,571
2030	8,084	5,847	13,931
2031	7,505	5,674	13,179
2032	6,933	5,501	12,434
2033	6,395	5,338	11,733
2034	5,889	5,183	11,072
2035	5,413	5,035	10,448
2036	4,965	4,893	9,858
2037	4,542	4,759	9,301
2038	4,142	4,629	8,771
2039	3,760	4,505	8,265
2040	3,395	4,384	7,779
2041	3,044	4,268	7,312
2042	2,704	4,154	6,858
2043	2,374	4,042	6,416
2044	2,051	3,932	5,983
2045	1,733	3,823	5,556
2046	1,715	3,818	5,533
2047	1,700	3,814	5,514
2048	1,688	3,811	5,499
2049	1,678	3,809	5,487
2050	1,669	3,807	5,476
2051	1,669	3,807	5,476
2052	1,669	3,807	5,476
2053	1,669	3,807	5,476
2054	1,669	3,807	5,476
<b>TOTAL</b>	<b>158,631</b>	<b>146,052</b>	<b>304,683</b>

Notes: Totals may not add due to rounding

<sup>a</sup> IBEC Project AB 987 Application, June 12, 2019, Supplemental Materials, Attachment 3: IBEC Project Greenhouse Gas Analysis Supplemental Technical Memorandum, Table 10. Net new IBEC Project emissions calculations include backfill of existing the LA Clippers offices and seven vacated LA Clippers event days at Staples Center.

<sup>b</sup> Additional Emissions include backfill of all additional vacated LA Clippers event days at Staples Center (40) and backfill of all market-shifted events (135).

*<sup>c</sup> Net Emissions Hypothetical 100% Backfill Emissions Scenario includes backfill of existing LA Clippers offices and all vacated LA Clippers event days at Staples Center (47) and all market-shifted events (135). See Attachment 1: IBEC Project Calculation of Net Emissions – Hypothetical 100% Backfill GHG Emissions Scenario.*

Under this hypothetical 100% backfill emissions scenario, the GHG emission reductions that would be required for the Project to achieve the Net Zero Standard and 50% local, direct requirement under AB 987 would increase, as shown in Table 2 below:

**Table 2. Hypothetical 100% Backfill Emissions Scenario and AB 987 Emissions Reduction Requirements**

<b>Emissions Conditions and Reductions</b>	<b>Emissions Estimates (MT CO<sub>2</sub>e)</b>	<b>Percent of Emissions</b>
<b>IBEC Project Total Net New Emissions</b>	<b>158,631<sup>a</sup></b>	<b>100%</b>
GHG Emissions Reductions from Local, Direct Measures for IBEC Project Net New Emissions	79,316 <sup>a</sup>	50%
GHG Emissions Reductions from Offset Credits for IBEC Project Net New Emissions	79,315 <sup>a</sup>	50%
<b>Additional Net New Emissions, Hypothetical 100% Backfill Emissions Scenario</b>	<b>146,052</b>	<b>100%</b>
GHG Emissions Reductions from Local, Direct Measures for Additional Hypothetical 100% Backfill Emissions Scenario Emissions	73,026	50%
GHG Emissions Reductions from Offset Credits for Additional Hypothetical 100% Backfill Emissions Scenario Emissions	73,026	50%
<b>Total Net New Emissions, Hypothetical 100% Backfill Emissions Scenario</b>	<b>304,683</b>	<b>100%</b>
GHG Emissions Reductions from Local, Direct Measures for Total Net New Emissions, Hypothetical 100% Backfill Emissions Scenario	152,342	50%
GHG Emissions Reductions from Offset Credits for Total Net New Emissions, Hypothetical 100% Backfill Emissions Scenario	152,341	50%
<i>Notes: Totals may not add due to rounding</i>		
<i><sup>a</sup> IBEC Project AB 987 Application, June 12, 2019, Supplemental Materials, Attachment 3: IBEC Project Greenhouse Gas Analysis Supplemental Technical Memorandum, Table 16</i>		

The total 304,683 MT CO<sub>2</sub>e of net new GHG emissions that could occur in the hypothetical 100% backfill emissions scenario represents an increase of 146,052 MT CO<sub>2</sub>e of GHG emissions above the total net new emissions of 158,631 MT CO<sub>2</sub>e estimated in the AB 987 Application. In

accordance with the requirements of AB 987, this would require an additional 73,026 MT CO<sub>2e</sub> of GHG emissions reductions to be achieved through local, direct measures and additional reductions of 73,026 MT CO<sub>2e</sub> to be achieved through carbon offset credits.

The following is a set of local, direct measures that either the Applicant has already committed to implement as set forth in the commitment letter accompanied by this Exhibit to achieve 58,227 MT CO<sub>2e</sub> of the additional GHG emissions reductions from local, direct measures on-site and within the City of Inglewood and neighboring communities that would be necessary under that hypothetical, 100% backfill GHG emissions scenario, and a quantification of the GHG emissions reductions that each measure would achieve:

#### **On-Site Local Direct Reduction Measures**

- **Smart Parking:** Design and integrate a smart parking system to reduce idling time in the three parking structures included in the Project with a total capacity of 4,125 self-park spaces, reducing GHG and other mobile emissions on-site. (Estimated GHG emissions reductions of 1,480 MT CO<sub>2e</sub> over 30 years).
- **On-Site Electric Vehicle Charging:** Install a minimum 330 electric vehicle charging stations (EVCS) within the three parking structures serving the Project. (Estimated GHG emissions reductions of 13,918 MT CO<sub>2e</sub> over 30 years).
- **Zero Waste Program:** Implement a waste and diversion program for operations of the Project, with the exception of the hotel, with a goal of reducing landfill waste to zero. Effectiveness of the program shall be monitored annually through the U.S. EPA's WasteWise program or a similar annual reporting system. (Estimated GHG emissions reductions of 31,587 MT CO<sub>2e</sub> over 30 years).
- **Renewable Energy:** Reduce GHG emissions associated with energy demand of the Project that exceeds on-site energy generation capacity by using Renewable Energy for a period sufficient to achieve GHG emission reductions equal to approximately 2.5% of the total estimate of GHG emissions that could occur in the hypothetical 100% backfill emissions scenario. (Estimated GHG emissions reductions of 7,617 MT CO<sub>2e</sub>).

#### **City of Inglewood Local Direct Reduction Measures**

- **Conversion to Zero-Emissions Vehicles (ZEVs)**
  - Transit ZEVs: Replacement of two local transit vehicles to operate within the City of Inglewood with ZEVs and provision of charging infrastructure. (Estimated GHG emissions reductions of 597 MT CO<sub>2e</sub> over 10 years).
  - Municipal Fleet ZEVs: Replacement of 10 local City of Inglewood municipal fleet vehicles with ZEVs. (Estimated GHG emissions reductions of 299 MT CO<sub>2e</sub> over 10 years).
- **EVCS Infrastructure:** Support adoption of ZEVs by facilitating installation of 20 EVCS in publicly accessible locations in the City of Inglewood. (Estimated GHG emissions reductions of 2,029 MT CO<sub>2e</sub> over 10 years).

- **Add Carbon Sequestration Capacity (Tree Planting):** Develop or enter into partnerships with existing organizations to develop a program to plant one thousand (1,000) trees within the City of Inglewood. (Estimated GHG emissions reductions of 700 CO<sub>2</sub>e MT over 20 years).

Application of measures described above, some or all of which could be substituted with other technologies or strategies to reduce GHG emissions that may emerge in the future<sup>1</sup>, would achieve, together with the local direct measures and carbon offset credits identified in the AB 987 Application and the additional carbon offset credits that the Applicant has committed to purchase pursuant to the commitment letter to which this Exhibit is attached, approximately 95% (*i.e.*, 289,120 MT CO<sub>2</sub>e) of the emissions reductions that would be necessary under the hypothetical 100% backfill emissions scenario.

If any additional emissions reductions are shown to be necessary pursuant to an annual GHG Verification Report, that report would identify and require implementation of additional local, direct GHG emissions reduction measures to achieve those reductions. A demonstration of how such additional local direct measures, in combination with those identified above, could achieve the 50% local, direct requirement under the hypothetical 100% backfill emissions scenario is provided in Table 3 below:

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<sup>1</sup> If the Applicant proposes to substitute other GHG emissions reduction measures to replace any local, direct measures that the Applicant has committed, in the commitment letter to which this Exhibit is attached, to implement prior to the issuance of grading permits or by the end of the first NBA season or June of the first NBA season, Applicant shall obtain the City of Inglewood's and CARB's approval for such substitution.

**Table 3. Hypothetical 100% Backfill Emissions Scenario:  
Summary of Potential GHG Emissions Reductions from Local, Direct  
Measures**

<b>Local Direct Measure</b>	<b>Committed or Potential Measure</b>	<b>Implementation</b>	<b>Emissions Reductions (MT CO<sub>2</sub>e)</b>
Renewable Energy	Committed	Reduce GHG emissions associated with energy demand of the Project that exceeds on-site energy generation capacity by using Renewable Energy for a period sufficient to achieve GHG emission reductions equal to approximately 2.5% of the total estimate of GHG emissions that could occur in the hypothetical 100% backfill emissions scenario.	7,617
Waste Reduction and Diversion	Committed	Implement a waste reduction and diversion program for the Project, with the exception of the hotel, with a goal of producing zero landfill waste.	31,587
Smart Parking	Committed	Install Smart Parking system in all IBEC Project parking structures.	1,480
On-Site EVCS	Committed	Install 330 electric vehicle charging stations in IBEC Project parking structures.	13,918
Transit ZEVs	Committed	Purchase 2 shuttles for local transit service within City of Inglewood (10-year operational life).	597
Municipal Fleet ZEVs	Committed	Purchase 10 ZEVs for municipal fleet (10-year operational life).	299
Neighborhood EVCS	Committed	Install 20 EVCS accessible to local EV drivers in the City of Inglewood.	2,029
Tree Planting	Committed	Implement local program to plant 1,000 trees.	700
Additional Renewable Energy	Potential	Purchase and use renewable energy for Project operations as necessary to achieve additional reductions.	15,563
<b>Total</b>			<b>73,790</b>
<i>Notes: Totals may not add due to rounding</i>			
<i>See Attachment 2: IBEC Project Calculation of GHG Emissions Reductions – Local, Direct Measures</i>			

As shown in Table 4 below, application of these additional local direct measures would be sufficient to meet the local, direct measure requirements of AB 987 in the hypothetical 100% backfill emissions scenario.

**Table 4. Summary of Local, Direct Emissions Reductions, Hypothetical 100% Backfill Emissions Scenario**

<b>Local Direct Measurements Requirements and Reductions</b>	<b>MT CO<sub>2</sub>e</b>
GHG Emissions Reductions Required from Local, Direct Measures for Total Net New Emissions, Hypothetical 100% Backfill Emissions Scenario	152,342
50% of Total Emissions Reductions from LEED Gold Qualifying as Local Direct Measures	3,755 <sup>a</sup>
Total Reductions from IBEC TDM Program	74,797 <sup>a</sup>
Total Reductions Through Other Committed Local Direct GHG Reductions	58,227
Total Potential Reductions Through Additional Local Direct GHG Reductions	15,563
Total Potential Reductions from Local, Direct Measures	152,342
<i>Notes: Totals may not add due to rounding</i>	
<i><sup>a</sup> IBEC Project AB 987 Application, June 12, 2019, Supplemental Materials, Attachment 3: IBEC Project Greenhouse Gas Analysis Supplemental Technical Memorandum, Table 16</i>	

**ATTACHMENT 1**

**IBEC Project**

**Calculation of Net Emissions**

**Hypothetical 100% Backfill GHG Emissions Scenario**



Net GHG Emissions Summary: Proposed IBEC Project - Hypothetical 100% Backfill GHG Emissions Scenario

Project Condition		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Hypothetical 100% Backfill GHG Emissions Scenario	Emissions Source																	
	Construction	3,834	8,373	7,437	1,188													
	Project Operations				11,996	23,244	22,595	22,014	21,492	21,020	20,593	20,033	19,480	18,961	18,473	18,015	17,583	17,177
	Backfilled Operations				3,900	7,833	7,559	7,304	7,065	6,840	6,627	6,434	6,243	6,061	5,888	5,722	5,565	5,414
	<b>Total Project Emissions (Indirect + Direct)</b>	3,834	8,373	7,437	17,084	31,077	30,154	29,318	28,558	27,861	27,220	26,468	25,723	25,022	24,361	23,737	23,148	22,590
	Existing Operations (2018)	1,209	1,209	1,209	7,249	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289
	<b>NET GHG EMISSIONS</b>	2,625	7,164	6,228	9,835	17,788	16,864	16,029	15,268	14,571	13,931	13,179	12,434	11,733	11,072	10,448	9,858	9,301
<b>Cumulative Total</b>	2,625	9,789	16,016	25,851	43,639	60,503	76,532	91,800	106,371	120,302	133,481	145,915	157,648	168,719	179,167	189,025	198,326	
GHG Emissions without TDM and without Project Design Features	Emissions Source	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
	Construction																	
	Backfilled Operations	5,269	5,129	4,993	4,862	4,733	4,607	4,484	4,361	4,356	4,352	4,348	4,346	4,343	4,343	4,343	4,343	4,343
	Project Operations	16,792	16,426	16,075	15,739	15,414	15,098	14,789	14,485	14,467	14,452	14,440	14,431	14,422	14,422	14,422	14,422	14,422
	<b>Total Project Emissions (Indirect + Direct)</b>	22,061	21,555	21,068	20,601	20,147	19,705	19,272	18,846	18,822	18,804	18,789	18,776	18,766	18,766	18,766	18,766	18,766
	Existing Operations (2018)	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289	13,289
	<b>NET GHG EMISSIONS</b>	8,771	8,265	7,779	7,312	6,858	6,416	5,983	5,556	5,533	5,514	5,499	5,487	5,476	5,476	5,476	5,476	5,476
	<b>Cumulative Total</b>	207,098	215,363	223,142	230,454	237,312	243,727	249,710	255,267	260,800	266,314	271,814	277,301	282,777	288,253	293,730	299,206	304,683

Net GHG Emissions Summary: Variant- Hypothetical 100% Backfill GHG Emissions Scenario

Project Condition		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Hypothetical 100% Backfill GHG Emissions Scenario	Emissions Source																	
	Construction	3,860	8,373	7,437	1,188													
	Project Operations				11,996	23,244	22,595	22,014	21,492	21,020	20,593	20,033	19,480	18,961	18,473	18,015	17,583	17,177
	Backfilled Operations				3,900	7,833	7,559	7,304	7,065	6,840	6,627	6,434	6,243	6,061	5,888	5,722	5,565	5,414
	<b>Total Project Emissions (Indirect + Direct)</b>	<b>3,860</b>	<b>8,373</b>	<b>7,437</b>	<b>17,084</b>	<b>31,077</b>	<b>30,154</b>	<b>29,318</b>	<b>28,558</b>	<b>27,861</b>	<b>27,220</b>	<b>26,468</b>	<b>25,723</b>	<b>25,022</b>	<b>24,361</b>	<b>23,737</b>	<b>23,148</b>	<b>22,590</b>
	Existing Operations (2018)	1,269	1,269	1,269	7,309	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349
<b>NET GHG EMISSIONS</b>	<b>2,591</b>	<b>7,105</b>	<b>6,168</b>	<b>9,776</b>	<b>17,728</b>	<b>16,805</b>	<b>15,969</b>	<b>15,209</b>	<b>14,512</b>	<b>13,872</b>	<b>13,119</b>	<b>12,375</b>	<b>11,674</b>	<b>11,012</b>	<b>10,389</b>	<b>9,799</b>	<b>9,242</b>	
<b>Cumulative Total</b>	<b>2,591</b>	<b>9,696</b>	<b>15,864</b>	<b>25,640</b>	<b>43,368</b>	<b>60,173</b>	<b>76,143</b>	<b>91,352</b>	<b>105,864</b>	<b>119,735</b>	<b>132,855</b>	<b>145,229</b>	<b>156,903</b>	<b>167,916</b>	<b>178,304</b>	<b>188,103</b>	<b>197,345</b>	
GHG Emissions without TDM and without Project Design Features	Emissions Source																	
	Construction																	
	Project Operations	16,792	16,426	16,075	15,739	15,414	15,098	14,789	14,485	14,167	14,452	14,440	14,431	14,422	14,422	14,422	14,422	14,422
	Backfilled Operations	5,269	5,129	4,993	4,862	4,733	4,607	4,484	4,361	4,356	4,352	4,348	4,346	4,343	4,343	4,343	4,343	4,343
	<b>Total Project Emissions (Indirect + Direct)</b>	<b>22,061</b>	<b>21,555</b>	<b>21,068</b>	<b>20,601</b>	<b>20,147</b>	<b>19,705</b>	<b>19,272</b>	<b>18,846</b>	<b>18,822</b>	<b>18,804</b>	<b>18,789</b>	<b>18,776</b>	<b>18,766</b>	<b>18,766</b>	<b>18,766</b>	<b>18,766</b>	<b>18,766</b>
	Existing Operations (2018)	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349	13,349
	<b>NET GHG EMISSIONS</b>	<b>8,712</b>	<b>8,206</b>	<b>7,720</b>	<b>7,252</b>	<b>6,799</b>	<b>6,357</b>	<b>5,924</b>	<b>5,497</b>	<b>5,474</b>	<b>5,455</b>	<b>5,440</b>	<b>5,428</b>	<b>5,417</b>	<b>5,417</b>	<b>5,417</b>	<b>5,417</b>	<b>5,417</b>
	<b>Cumulative Total</b>	<b>206,057</b>	<b>214,263</b>	<b>221,983</b>	<b>229,235</b>	<b>236,034</b>	<b>242,391</b>	<b>248,314</b>	<b>253,811</b>	<b>259,285</b>	<b>264,741</b>	<b>270,181</b>	<b>275,608</b>	<b>281,026</b>	<b>286,443</b>	<b>291,860</b>	<b>297,277</b>	<b>302,694</b>

**Backfilled Operational Emissions**

**Total Backfilled Emissions by Year**

Emissions Source	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Clippers Event Nights + Office + MS Events	7,799.64	7,833.13	7,558.99	7,303.88	7,065.17	6,840.20	6,627.47	6,434.40	6,242.93	6,061.03	5,887.66	5,722.46	5,564.54	5,413.60	5,268.67

Emissions Source	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
Clippers Event Nights + Office + MS Events	5,128.88	4,993.44	4,861.95	4,733.47	4,607.47	4,483.52	4,360.95	4,355.81	4,351.70	4,348.37	4,345.59	4,343.24	4,343.24	4,343.24	4,343.24	4,343.24

**Clippers Event Days Backfilled at Staples**

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Emissions Source	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Energy (Electricity and Natural Gas)	876.86	845.31	813.76	782.21	750.66	719.11	687.56	656.01	624.46	592.90	561.35	529.80	498.25	466.70	435.15
Area	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mobile (On-Road)	2,489.37	2,389.82	2,304.66	2,229.76	2,163.70	2,105.04	2,052.98	2,011.51	1,970.90	1,935.45	1,904.60	1,878.14	1,855.62	1,836.85	1,821.32
Solid Waste	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80
Water	430.72	415.84	400.96	386.08	371.20	356.31	341.43	326.55	311.67	296.79	281.91	267.03	252.15	237.27	222.38
<b>Total</b>	<b>3,927.76</b>	<b>3,781.77</b>	<b>3,650.18</b>	<b>3,528.85</b>	<b>3,416.36</b>	<b>3,311.27</b>	<b>3,212.77</b>	<b>3,124.87</b>	<b>3,037.83</b>	<b>2,955.95</b>	<b>2,878.66</b>	<b>2,805.78</b>	<b>2,736.82</b>	<b>2,671.62</b>	<b>2,609.66</b>

Emissions Source	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
Energy (Electricity and Natural Gas)	403.60	372.05	340.50	308.95	277.40	245.85	214.29	214.29	214.29	214.29	214.29	214.29	214.29	214.29	214.29	214.29
Area	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mobile (On-Road)	1,808.56	1,798.15	1,789.86	1,783.19	1,777.87	1,773.64	1,770.16	1,767.39	1,765.18	1,763.38	1,761.88	1,760.62	1,760.62	1,760.62	1,760.62	1,760.62
Solid Waste	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80	130.80
Water	207.50	192.62	177.74	162.86	147.98	133.10	118.22	118.22	118.22	118.22	118.22	118.22	118.22	118.22	118.22	118.22
<b>Total</b>	<b>2,550.47</b>	<b>2,493.62</b>	<b>2,438.90</b>	<b>2,385.80</b>	<b>2,334.05</b>	<b>2,283.39</b>	<b>2,233.48</b>	<b>2,230.71</b>	<b>2,228.49</b>	<b>2,226.70</b>	<b>2,225.20</b>	<b>2,223.94</b>	<b>2,223.94</b>	<b>2,223.94</b>	<b>2,223.94</b>	<b>2,223.94</b>

**Backfilled Office**

Emissions Source	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Energy (Electricity and Natural Gas)	92.58	88.80	85.03	81.25	77.47	73.70	69.92	66.14	62.36	58.59	54.81	51.03	47.26	43.48	39.70
Area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile (On-Road)	215.89	214.07	212.26	210.44	208.63	206.81	205.00	203.18	201.36	199.55	197.73	195.92	194.10	192.28	190.47
Solid Waste	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29
Water	23.15	22.27	21.40	20.53	19.65	18.78	17.91	17.03	16.16	15.29	14.41	13.54	12.67	11.79	10.92
<b>Total</b>	<b>340.91</b>	<b>334.44</b>	<b>327.98</b>	<b>321.51</b>	<b>315.04</b>	<b>308.58</b>	<b>302.11</b>	<b>295.64</b>	<b>289.17</b>	<b>282.71</b>	<b>276.24</b>	<b>269.78</b>	<b>263.31</b>	<b>256.84</b>	<b>250.38</b>

Emissions Source	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
Energy (Electricity and Natural Gas)	35.92	32.15	28.37	24.59	20.82	17.04	13.26	13.26	13.26	13.26	13.26	13.26	13.26	13.26	13.26	13.26
Area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile (On-Road)	188.65	186.84	185.02	183.20	181.39	179.57	177.76	177.76	177.76	177.76	177.76	177.76	177.76	177.76	177.76	177.76
Solid Waste	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29	9.29
Water	10.05	9.17	8.30	7.43	6.55	5.68	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80
<b>Total</b>	<b>243.91</b>	<b>237.44</b>	<b>230.98</b>	<b>224.51</b>	<b>218.04</b>	<b>211.58</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>	<b>205.11</b>

**MS Backfilled at other LA Venues**

Emissions Source	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Energy (Electricity and Natural Gas)	876.86	1,162.58	1,113.95	1,065.32	1,016.69	968.06	919.43	870.79	822.16	773.53	724.90	676.27	627.64	579.00	530.37
Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mobile (On-Road)	2,130.32	2,045.13	1,972.25	1,908.15	1,851.62	1,801.42	1,756.87	1,721.38	1,686.63	1,656.29	1,629.89	1,607.25	1,587.97	1,571.91	1,558.62
Solid Waste	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26
Water	409.53	394.95	380.36	365.78	351.20	336.62	322.03	307.45	292.87	278.29	263.71	249.12	234.54	219.96	205.38
<b>Total</b>	<b>3,530.97</b>	<b>3,716.92</b>	<b>3,580.83</b>	<b>3,453.52</b>	<b>3,333.77</b>	<b>3,220.36</b>	<b>3,112.59</b>	<b>3,013.89</b>	<b>2,915.92</b>	<b>2,822.37</b>	<b>2,732.76</b>	<b>2,646.91</b>	<b>2,564.41</b>	<b>2,485.14</b>	<b>2,408.64</b>

Emissions Source	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
Energy (Electricity and Natural Gas)	481.74	433.11	384.48	335.85	287.22	238.58	189.95	189.95	189.95	189.95	189.95	189.95	189.95	189.95	189.95	189.95
Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mobile (On-Road)	1,547.70	1,538.79	1,531.70	1,526.00	1,521.44	1,517.82	1,514.85	1,512.47	1,510.58	1,509.04	1,507.76	1,506.68	1,506.68	1,506.68	1,506.68	1,506.68
Solid Waste	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26	114.26
Water	190.79	176.21	161.63	147.05	132.47	117.88	103.30	103.30	103.30	103.30	103.30	103.30	103.30	103.30	103.30	103.30
<b>Total</b>	<b>2,334.50</b>	<b>2,262.38</b>	<b>2,192.07</b>	<b>2,123.15</b>	<b>2,055.38</b>	<b>1,988.55</b>	<b>1,922.36</b>	<b>1,919.99</b>	<b>1,918.10</b>	<b>1,916.56</b>	<b>1,915.28</b>	<b>1,914.20</b>	<b>1,914.20</b>	<b>1,914.20</b>	<b>1,914.20</b>	<b>1,914.20</b>

Note:  
Units are in MT CO<sub>2</sub>e.

Mobile Source Emissions  
 Backfill of 47 NBA Event Nights with 10,500-Attendee Event

Existing (Average Event Attendees)					
Land Use	Size	Estimated Annual Trips			
		Days with Events	Days without Events	Days with Events	Days without Events
Arena (employees)	29,934	0	13,000	0	40,934
Venue	796,136	0	135,690	0	430,796
<b>Total</b>	<b>324,468</b>	<b>0</b>	<b>137,690</b>	<b>0</b>	<b>362,110</b>

Conversion Factors	
gram	1/1000000

Assumption	Value	Assumptions
Attendee Trip Length (mi)	37.80	mi per 100 sq ft of arena floor
Employee Trip Length (mi)	14.7	mi per 100 sq ft of arena floor
Event Days per Year	47	mi per 100 sq ft of arena floor

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
DW-AC20.14 CO <sub>2</sub> Emission Factors (g/mi)	263.9535	272.597349	263.8941774	254.340579	246.805814	240.1144113	234.6751	229.4482923	224.8132	220.75946	217.29131	214.23264	211.66806	209.52259	207.75117	206.292576	205.10758	204.16262	203.40212	202.79459	202.31916	201.95195	201.6697	201.4474	201.2746	201.1406	201.0316	200.9373
DW-AC20.14 CO <sub>2</sub> Emission Factors (MW/mi)	0.000284	0.00029285	0.000282884	0.00027341	0.000264603	0.000256114	0.00024784	0.000239745	0.00023181	0.00022403	0.00021642	0.00020901	0.00020177	0.00019469	0.00018775	0.00018095	0.00017428	0.00016774	0.00016132	0.00015502	0.00014884	0.00014277	0.00013681	0.00013096	0.00012521	0.00011956	0.00011401	0.00010856

Event Backfill: GHG Emissions																													
Event Backfill: GHG Emissions																													
2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030			
158.442316	161.70401	155.84389	149.8788	144.45673	139.01382	134.0624	129.18129	124.87371	121.0873	117.55933	114.2836	111.26978	108.41798	105.72871	103.19271	100.8005	98.5528	96.4403	94.4534	92.5821	90.8264	89.1763	87.6218	86.153	84.7601	83.433	82.1625	80.938	
2320.93137	2328.1134	2148.7153	2078.864	2017.2996	1963.6167	1914.0645	1875.3933	1837.5402	1800.4832	1775.2739	1750.002	1730.6538	1713.5634	1698.0915	1683.884	1670.476	1657.75	1645.534	1633.81	1622.47	1611.41	1600.62	1590.1	1579.84	1569.83	1559.97	1550.26	1540.7	
7489.37	7389.82	7204.10	7029.76	6863.70	6705.04	6552.98	6406.31	6264.94	6128.77	6000.00	5880.00	5760.00	5650.00	5550.00	5450.00	5350.00	5250.00	5150.00	5050.00	4950.00	4850.00	4750.00	4650.00	4550.00	4450.00	4350.00	4250.00	4150.00	4050.00

Mobile Source Emissions  
 Buckle of Market-Shifted Events - All Market-Shifted Events Buckle With Same-Sized Event

Driving (Average Events per driver)						
Land Use	Size	Estimated Annual Trips				Total
		Days with Events	Weekend	Days with Events	Weekend	
Arena (employees)	15,000	0	0	15,000	0	15,000
Arena (patrons)	100,000	0	0	170,400	0	170,400
<b>Total</b>	<b>200,000</b>	<b>0</b>	<b>0</b>	<b>185,400</b>	<b>0</b>	<b>185,400</b>

Conversion Factors	
gram	1/1000000

Assumption	Value	Assumption
Attendee Trip Length (mi)	10	Attendee Trip Length (mi)
Employee Trip Length (mi)	14.7	Employee Trip Length (mi)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
DW-AC20.14 CO <sub>2</sub> Emission Factors (g/mi)	263.9535	272.597349	263.8941774	254.340279	246.805814	240.114413	234.1753	229.449293	224.8132	220.75946	217.2931	214.23264	211.69305	209.52259	207.75117	206.29276	205.10758	204.16262	203.40212	202.79459	202.32196	201.95159	201.6597	201.4474	201.31406	201.2716	201.3273
DW-AC20.14 CO <sub>2</sub> Emission Factors (Mg/mi)	0.000284	0.000295	0.000288	0.000274	0.000268	0.000259	0.000254	0.000249	0.000245	0.000242	0.000239	0.000237	0.000235	0.000234	0.000233	0.000232	0.000231	0.000231	0.000231	0.000231	0.000231	0.000231	0.000231	0.000231	0.000231	0.000231	0.000231

Event Buckle - GHG Emissions																											
2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
131.6033498	137.3031	132.78418	118.77441	115.70551	113.13033	109.30754	107.14440	104.38242	101.99704	100.04453	98.54444	97.44487	97.017036	96.33751	95.7835	95.34412	94.987	94.7027	94.476	94.2983	94.14497	94.02751	93.93149	93.85151	93.78438	93.72818	93.6828
1997.717179	1917.5249	1849.4355	1789.3792	1736.3059	1689.3929	1647.5107	1611.433	1581.8452	1553.154	1528.4395	1507.305	1489.1777	1478.6682	1461.0756	1445.363	1431.009	1418.734	1408.345	1400.009	1393.69	1388.343	1383.99	1380.61	1378.17	1376.68	1376.14	1376.55
7.13037	7.04515	6.97212	6.90615	6.84322	6.78142	6.72187	6.66458	6.60949	6.55649	6.50559	6.45679	6.40999	6.36519	6.32239	6.28159	6.24279	6.20599	6.17119	6.13839	6.10759	6.07879	6.05199	6.02719	6.00439	5.98359	5.96479	5.94799

Honda Center - Orange County, Annual

**Honda Center**  
**Orange County, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	650.00	1000sqft	208.93	650,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	30
<b>Climate Zone</b>	8			<b>Operational Year</b>	2045
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	0	<b>CH4 Intensity (lb/MW hr)</b>	0	<b>N2O Intensity (lb/MW hr)</b>	0

**1.3 User Entered Comments & Non-Default Data**

Honda Center - Orange County, Annual

Project Characteristics - Honda Center operational emissions. CO<sub>2</sub>e rate assumed to be 0 per RPS goals in 2045.

Land Use - Based Honda Center square footage

Construction Phase - Operational emissions only.

Off-road Equipment - Operational emissions only.

Off-road Equipment - Operational emissions only.

Trips and VMT - Operational emissions only.

Architectural Coating - Operational emissions only.

Vehicle Trips - Mobile sources calculated separately.

Energy Use - Based on actual energy consumption provided in Honda Center Enhancement Project EIR

Solid Waste - Solid waste generation based on 1.29 ton/1000 sq ft.

## Honda Center - Orange County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	325,000.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	975,000.00	0.00
tblConstructionPhase	NumDays	330.00	0.00
tblConstructionPhase	NumDays	180.00	0.00
tblEnergyUse	LightingElect	2.99	10.43
tblEnergyUse	NT24E	3.83	13.35
tblEnergyUse	NT24NG	6.86	6.57
tblEnergyUse	T24E	1.63	5.68
tblEnergyUse	T24NG	14.04	13.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	1543.28	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblSolidWaste	SolidWasteGenerationRate	17.89	838.50
tblTripsAndVMT	WorkerTripNumber	55.00	0.00
tblVehicleTrips	ST_TR	10.71	0.00
tblVehicleTrips	SU_TR	10.71	0.00
tblVehicleTrips	WD_TR	10.71	0.00

## 2.0 Emissions Summary

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Honda Center - Orange County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

**2.2 Overall Operational**  
**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.6508	7.0000e-005	8.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0161	0.0161	4.0000e-005	0.0000	0.0172
Energy	0.0703	0.6395	0.5372	3.8400e-003		0.0486	0.0486		0.0486	0.0486	0.0000	696.1576	696.1576	0.0133	0.0128	700.2945
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	170.2079	0.0000	170.2079	10.0590	0.0000	421.6829
Water						0.0000	0.0000		0.0000	0.0000	88.8313	0.0000	88.8313	9.1238	0.2154	381.1259
<b>Total</b>	<b>2.7211</b>	<b>0.6396</b>	<b>0.5454</b>	<b>3.8400e-003</b>	<b>0.0000</b>	<b>0.0486</b>	<b>0.0486</b>	<b>0.0000</b>	<b>0.0486</b>	<b>0.0486</b>	<b>259.0392</b>	<b>696.1737</b>	<b>955.2129</b>	<b>19.1962</b>	<b>0.2282</b>	<b>1,503.1205</b>

Honda Center - Orange County, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.6508	7.0000e-005	8.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0161	0.0161	4.0000e-005	0.0000	0.0172
Energy	0.0703	0.6395	0.5372	3.8400e-003		0.0486	0.0486		0.0486	0.0486	0.0000	696.1576	696.1576	0.0133	0.0128	700.2945
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	170.2079	0.0000	170.2079	10.0590	0.0000	421.6829
Water						0.0000	0.0000		0.0000	0.0000	88.8313	0.0000	88.8313	9.1238	0.2154	381.1259
<b>Total</b>	<b>2.7211</b>	<b>0.6396</b>	<b>0.5454</b>	<b>3.8400e-003</b>	<b>0.0000</b>	<b>0.0486</b>	<b>0.0486</b>	<b>0.0000</b>	<b>0.0486</b>	<b>0.0486</b>	<b>259.0392</b>	<b>696.1737</b>	<b>955.2129</b>	<b>19.1962</b>	<b>0.2282</b>	<b>1,503.1205</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/23/2019	2/22/2019	5	0	
2	Architectural Coating	Architectural Coating	9/15/2040	9/14/2040	5	0	

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0703	0.6395	0.5372	3.8400e-003		0.0486	0.0486		0.0486	0.0486	0.0000	696.1576	696.1576	0.0133	0.0128	700.2945
NaturalGas Unmitigated	0.0703	0.6395	0.5372	3.8400e-003		0.0486	0.0486		0.0486	0.0486	0.0000	696.1576	696.1576	0.0133	0.0128	700.2945

Honda Center - Orange County, Annual

**5.2 Energy by Land Use - Natural Gas**

**Unmitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	1.30455e+007	0.0703	0.6395	0.5372	3.8400e-003		0.0486	0.0486		0.0486	0.0486	0.0000	696.1576	696.1576	0.0133	0.0128	700.2945
<b>Total</b>		<b>0.0703</b>	<b>0.6395</b>	<b>0.5372</b>	<b>3.8400e-003</b>		<b>0.0486</b>	<b>0.0486</b>		<b>0.0486</b>	<b>0.0486</b>	<b>0.0000</b>	<b>696.1576</b>	<b>696.1576</b>	<b>0.0133</b>	<b>0.0128</b>	<b>700.2945</b>

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	1.30455e+007	0.0703	0.6395	0.5372	3.8400e-003		0.0486	0.0486		0.0486	0.0486	0.0000	696.1576	696.1576	0.0133	0.0128	700.2945
<b>Total</b>		<b>0.0703</b>	<b>0.6395</b>	<b>0.5372</b>	<b>3.8400e-003</b>		<b>0.0486</b>	<b>0.0486</b>		<b>0.0486</b>	<b>0.0486</b>	<b>0.0000</b>	<b>696.1576</b>	<b>696.1576</b>	<b>0.0133</b>	<b>0.0128</b>	<b>700.2945</b>

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	1.9149e+007	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	1.9149e+007	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

Honda Center - Orange County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.6508	7.0000e-005	8.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0161	0.0161	4.0000e-005	0.0000	0.0172
Unmitigated	2.6508	7.0000e-005	8.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0161	0.0161	4.0000e-005	0.0000	0.0172

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3013					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3488					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5000e-004	7.0000e-005	8.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0161	0.0161	4.0000e-005	0.0000	0.0172
<b>Total</b>	<b>2.6508</b>	<b>7.0000e-005</b>	<b>8.2400e-003</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.0161</b>	<b>0.0161</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0172</b>

Honda Center - Orange County, Annual

**6.2 Area by SubCategory**

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3013					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.3488					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5000e-004	7.0000e-005	8.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0161	0.0161	4.0000e-005	0.0000	0.0172
<b>Total</b>	<b>2.6508</b>	<b>7.0000e-005</b>	<b>8.2400e-003</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.0161</b>	<b>0.0161</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.0172</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Honda Center - Orange County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	88.8313	9.1238	0.2154	381.1259
Unmitigated	88.8313	9.1238	0.2154	381.1259

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	280.001 / 17.8724	88.8313	9.1238	0.2154	381.1259
<b>Total</b>		<b>88.8313</b>	<b>9.1238</b>	<b>0.2154</b>	<b>381.1259</b>



## 7.2 Water by Land Use

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	280.001 / 17.8724	88.8313	9.1238	0.2154	381.1259
<b>Total</b>		<b>88.8313</b>	<b>9.1238</b>	<b>0.2154</b>	<b>381.1259</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	170.2079	10.0590	0.0000	421.6829
Unmitigated	170.2079	10.0590	0.0000	421.6829

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	838.5	170.2079	10.0590	0.0000	421.6829
<b>Total</b>		<b>170.2079</b>	<b>10.0590</b>	<b>0.0000</b>	<b>421.6829</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	838.5	170.2079	10.0590	0.0000	421.6829
<b>Total</b>		<b>170.2079</b>	<b>10.0590</b>	<b>0.0000</b>	<b>421.6829</b>

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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The Forum Emissions - Los Angeles-South Coast County, Annual

**The Forum Emissions**  
**Los Angeles-South Coast County, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	346.00	1000sqft	111.21	346,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	8			<b>Operational Year</b>	2045
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	0	<b>CH4 Intensity (lb/MW hr)</b>	0	<b>N2O Intensity (lb/MW hr)</b>	0

**1.3 User Entered Comments & Non-Default Data**

The Forum Emissions - Los Angeles-South Coast County, Annual

Project Characteristics - Backfilled emissions at The Forum. SCE CO2e intensity rate assumed to be 0 in 2045.

Land Use - Based on actual square footage.

Construction Phase - Operations run only.

Off-road Equipment - Operations run only.

Off-road Equipment - Operations run only.

Trips and VMT - Operations run only.

Architectural Coating - Operations run only.

Vehicle Trips - Mobile sources calculated separately.

Energy Use - Renovated in 2014. CalEEMod defaults for energy usage.

Solid Waste - Based on 1.29 tons/1000 sq ft.

## The Forum Emissions - Los Angeles-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	173,000.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	519,000.00	0.00
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	NumDays	120.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	0
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblSolidWaste	SolidWasteGenerationRate	9.52	446.34
tblTripsAndVMT	WorkerTripNumber	29.00	0.00
tblVehicleTrips	ST_TR	10.71	0.00
tblVehicleTrips	SU_TR	10.71	0.00
tblVehicleTrips	WD_TR	10.71	0.00

## 2.0 Emissions Summary

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The Forum Emissions - Los Angeles-South Coast County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

**2.2 Overall Operational**  
**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4110	4.0000e-005	4.3900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.5900e-003	8.5900e-003	2.0000e-005	0.0000	9.1400e-003
Energy	0.0390	0.3545	0.2978	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.8950	385.8950	7.4000e-003	7.0700e-003	388.1882
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	90.6030	0.0000	90.6030	5.3545	0.0000	224.4651
Water						0.0000	0.0000		0.0000	0.0000	47.2856	0.0000	47.2856	4.8567	0.1147	202.8763
<b>Total</b>	<b>1.4500</b>	<b>0.3545</b>	<b>0.3022</b>	<b>2.1300e-003</b>	<b>0.0000</b>	<b>0.0270</b>	<b>0.0270</b>	<b>0.0000</b>	<b>0.0270</b>	<b>0.0270</b>	<b>137.8886</b>	<b>385.9036</b>	<b>523.7922</b>	<b>10.2186</b>	<b>0.1218</b>	<b>815.5387</b>

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4110	4.0000e-005	4.3900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.5900e-003	8.5900e-003	2.0000e-005	0.0000	9.1400e-003
Energy	0.0390	0.3545	0.2978	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.8950	385.8950	7.4000e-003	7.0700e-003	388.1882
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	90.6030	0.0000	90.6030	5.3545	0.0000	224.4651
Water						0.0000	0.0000		0.0000	0.0000	47.2856	0.0000	47.2856	4.8567	0.1147	202.8763
<b>Total</b>	<b>1.4500</b>	<b>0.3545</b>	<b>0.3022</b>	<b>2.1300e-003</b>	<b>0.0000</b>	<b>0.0270</b>	<b>0.0270</b>	<b>0.0000</b>	<b>0.0270</b>	<b>0.0270</b>	<b>137.8886</b>	<b>385.9036</b>	<b>523.7922</b>	<b>10.2186</b>	<b>0.1218</b>	<b>815.5387</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/6/2018	10/5/2018	5	0	
2	Architectural Coating	Architectural Coating	2/19/2033	2/18/2033	5	0	



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**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0390	0.3545	0.2978	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.8950	385.8950	7.4000e-003	7.0700e-003	388.1882
NaturalGas Unmitigated	0.0390	0.3545	0.2978	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.8950	385.8950	7.4000e-003	7.0700e-003	388.1882

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5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	7.2314e+006	0.0390	0.3545	0.2978	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.8950	385.8950	7.4000e-003	7.0700e-003	388.1882
<b>Total</b>		<b>0.0390</b>	<b>0.3545</b>	<b>0.2978</b>	<b>2.1300e-003</b>		<b>0.0269</b>	<b>0.0269</b>		<b>0.0269</b>	<b>0.0269</b>	<b>0.0000</b>	<b>385.8950</b>	<b>385.8950</b>	<b>7.4000e-003</b>	<b>7.0700e-003</b>	<b>388.1882</b>

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	7.2314e+006	0.0390	0.3545	0.2978	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.8950	385.8950	7.4000e-003	7.0700e-003	388.1882
<b>Total</b>		<b>0.0390</b>	<b>0.3545</b>	<b>0.2978</b>	<b>2.1300e-003</b>		<b>0.0269</b>	<b>0.0269</b>		<b>0.0269</b>	<b>0.0269</b>	<b>0.0000</b>	<b>385.8950</b>	<b>385.8950</b>	<b>7.4000e-003</b>	<b>7.0700e-003</b>	<b>388.1882</b>

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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	2.9237e+006	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	2.9237e+006	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4110	4.0000e-005	4.3900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.5900e-003	8.5900e-003	2.0000e-005	0.0000	9.1400e-003
Unmitigated	1.4110	4.0000e-005	4.3900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.5900e-003	8.5900e-003	2.0000e-005	0.0000	9.1400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1604					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	4.3900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.5900e-003	8.5900e-003	2.0000e-005	0.0000	9.1400e-003
<b>Total</b>	<b>1.4110</b>	<b>4.0000e-005</b>	<b>4.3900e-003</b>	<b>0.0000</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.5900e-003</b>	<b>8.5900e-003</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>9.1400e-003</b>

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**6.2 Area by SubCategory**

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1604					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2503					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	4.3900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.5900e-003	8.5900e-003	2.0000e-005	0.0000	9.1400e-003
<b>Total</b>	<b>1.4110</b>	<b>4.0000e-005</b>	<b>4.3900e-003</b>	<b>0.0000</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>		<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.5900e-003</b>	<b>8.5900e-003</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>9.1400e-003</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	47.2856	4.8567	0.1147	202.8763
Unmitigated	47.2856	4.8567	0.1147	202.8763

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	149.046 / 9.5136	47.2856	4.8567	0.1147	202.8763
<b>Total</b>		<b>47.2856</b>	<b>4.8567</b>	<b>0.1147</b>	<b>202.8763</b>

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**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	149.046 / 9.5136	47.2856	4.8567	0.1147	202.8763
<b>Total</b>		<b>47.2856</b>	<b>4.8567</b>	<b>0.1147</b>	<b>202.8763</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	90.6030	5.3545	0.0000	224.4651
Unmitigated	90.6030	5.3545	0.0000	224.4651

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**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	446.34	90.6030	5.3545	0.0000	224.4651
<b>Total</b>		<b>90.6030</b>	<b>5.3545</b>	<b>0.0000</b>	<b>224.4651</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	446.34	90.6030	5.3545	0.0000	224.4651
<b>Total</b>		<b>90.6030</b>	<b>5.3545</b>	<b>0.0000</b>	<b>224.4651</b>

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## 10.0 Stationary Equipment

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### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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### Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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### User Defined Equipment

Equipment Type	Number
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## 11.0 Vegetation

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**ATTACHMENT 2**  
**IBEC Project**  
**Calculation of GHG Emissions Reductions**  
**Local, Direct Measures**

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## Summary

For each local direct measure, GHG emissions reductions were estimated based on the best available information and commonly accepted calculation methodologies using conservative approaches and assumptions where appropriate. Emission reductions were quantified on a per unit basis, with anticipated reductions estimated based on the number of units planned for implementation (example: number of electric vehicles to replace fossil-fueled vehicles). Timeframes and assumed operational periods used to calculate emissions reductions for each measure are stated below, assuming project construction begins in 2021 and proposed IBEC Project operations begin in July 2024.

The GHG reduction measures evaluated included:

- Off-site local direct measures, accounting for emissions reductions based upon a conservatively anticipated useful life for each measure; and
- On-site actions for the IBEC proposed Project, accounting for emissions reductions over the 30-year operational life through 2054 of the proposed IBEC Project as analyzed in the AB 987 Application.

Results for each measure are presented as reduction in metric tons of carbon dioxide equivalent (MT CO<sub>2e</sub>) over the anticipated lifetime of each measure.

Measure	Total MT CO <sub>2e</sub> Reduced
Electric Vehicles for Inglewood Local Transit Vehicles	597
Electric Vehicles for City of Inglewood Vehicle Fleet	299
Tree Planting Program for City of Inglewood	700
Local Electric Vehicle Charging Stations in the City of Inglewood	2,029
IBEC On-Site Waste Reduction and Diversion Program	31,587
IBEC On-Site Electric Vehicle Charging Stations	13,918
IBEC On-Site Smart Parking	1,480
IBEC On-Site Use of Renewable Electric Power	Up to 52,889
IBEC On-Site Use of Renewable Natural Gas	Up to 30,827

As necessary, GHG calculations for each measure applied global warming potentials consistent with the California Air Resources Board (CARB) GHG Reporting Program for data years 2021 and beyond:

Greenhouse Gas	Global Warming Potential
CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

Each GHG reduction measure explanation includes a brief summary of the measure, key assumptions made, and the calculation methodology employed. Annual and/or per unit breakdowns of GHG reductions are provided in this document as appropriate for a given measure. For each reduction measure, details regarding the calculation methodologies, formulas, and emissions factors are included in the tables accompanying the description of each measure.

## **Electric Vehicles for Inglewood Local Transit**

The Applicant will enter into an agreement with the City of Inglewood to cover 100% of the cost of replacement of two transit vehicles that operate within the City of Inglewood with Electric Vehicles (EVs) prior to the issuance of grading permits for the IBEC Project. The replacement of transit vehicles with EV vehicles shall be in excess of any applicable regulatory requirement, including CARB’s Innovative Clean Transit program, or any previously-planned action by the City of Inglewood that would have occurred otherwise.

### **Estimated Results**

The GHG reductions estimated for this measure are as follows:

<b>Timeframe and Number of Units</b>	<b>MT CO<sub>2</sub>e Reduced</b>
Annual emissions reductions per electric transit vehicle	29.8
2021-2030 emissions reductions per electric transit vehicle	298.4
2021-2030 emissions reductions achieved from two electric transit vehicles	597

### **Assumptions**

<b>Parameter</b>	<b>Assumption</b>
Inglewood transit vehicles replaced	One local service transit shuttle One paratransit shuttle
Fuel used in current transit vehicles to be replaced	CNG
Annual miles driven per transit vehicle <sup>1</sup>	23,000
Years of transit vehicle use included	10
Model year of transit vehicle replaced	2021

### **Calculation Methodology**

Based on these assumptions, emissions reductions were calculated using the following emissions factor for a T6 weight class (Department of Transportation vehicle class 4 – 7) CNG shuttle, obtained from the California Air Resources Board (CARB) Summary of Emissions Inventory Analysis for the Zero-Emission Airport Shuttle Regulation<sup>2</sup>

<b>Greenhouse Gas</b>	<b>Emission Factors (grams/mile)</b>
CO <sub>2</sub>	1,300

This represents a conservative estimate of reductions, as the source reference does not provide CH<sub>4</sub> or N<sub>2</sub>O emission factors for CNG use.

<sup>1</sup> Local transit vehicles to be replaced with EV shuttle vehicles include the vehicle used for the I-Line local transit service in the City of Inglewood (average annual miles traveled estimated at 23,000 miles based on shuttle route, frequency, and days of operation) and a paratransit vehicle providing service in the City of Inglewood (average annual miles traveled estimated at 23,000 miles, based on U.S. Department of Energy data for average annual miles traveled for paratransit vehicles [23,400 miles]), available at: <https://afdc.energy.gov/data/10309>.

<sup>2</sup> California Air Resources Board, *Summary of Emissions Inventory Analysis for the Zero-Emission Airport Shuttle Regulation* (2019), available at: [https://ww3.arb.ca.gov/msprog/asb/summary\\_emissions\\_inventory\\_analysis.pdf](https://ww3.arb.ca.gov/msprog/asb/summary_emissions_inventory_analysis.pdf).

## **Electric Vehicles for City of Inglewood Vehicle Fleet**

The Applicant will enter into an agreement with the City of Inglewood to cover 100% of the cost of replacing 10 fossil-fueled municipal fleet vehicles with Battery Electric Vehicles (BEVs) prior to the issuance of grading permits for the IBEC Project. The replacement of vehicles with EV vehicles shall be in excess of any applicable regulatory requirement, or any previously-planned action by the City of Inglewood that would have occurred otherwise.

### **Estimated Results**

The GHG reductions estimated for this measure are as follows:

<b>Timeframe and Number of Units</b>	<b>MT CO<sub>2</sub>e Reduced</b>
Annual emissions reductions per electric vehicle	3
2021-2030 emissions reductions per electric vehicle	30
2021-2030 emissions reductions achieved from 10 electric vehicles	299

### **Assumptions**

<b>Parameter</b>	<b>Assumption</b>
Fuel used in current vehicles to be replaced	Gasoline
Annual miles driven per vehicle <sup>3</sup>	11,000
Years of vehicle usage included	10
Model year of vehicles replaced	2021

### **Calculation Methodology**

Based on these assumptions, emissions reductions were calculated using the following emissions factors obtained from EMFAC 2017,<sup>4</sup> using the inputs of Light Duty Auto (LDA) vehicle class, 2021 vehicle, operating at 30 miles per hour:

<b>Greenhouse Gas</b>	<b>Emission Factors (grams/mile)</b>
CO <sub>2</sub>	271
CH <sub>4</sub>	0.003
N <sub>2</sub> O	0.005

<sup>3</sup> Based on U.S. Department of Energy data for average miles traveled for light-duty vehicles (11,346 miles per year), available at: <https://afdc.energy.gov/data/10309>.

<sup>4</sup> California Air Resources Board, EMFAC2017 Web Database, available at: <https://www.arb.ca.gov/emfac/2017/>.

## **Tree Planting Program for City of Inglewood**

Prior to the issuance of grading permits for the IBEC Project, the Applicant will develop or partner with local organizations to develop a program to plant 1,000 trees within the City of Inglewood. The tree planting program will cover the cost of the acquisition and planting of the trees in Inglewood.

### **Estimated Results**

The GHG reductions estimated for this measure are as follows:

<b>Timeframe and Number of Units</b>	<b>MT CO<sub>2</sub>e Reduced</b>
Annual emissions reductions per tree	0.035
Emissions reductions per tree, 20-year period per CalEEMod	0.7
Emissions reductions achieved from all 1,000 trees	700

### **Assumptions**

<b>Parameter</b>	<b>Assumption</b>
CalEEMod emissions reductions rate	0.035 MT/tree-year
Growing period	20 years

### **Calculation Methodology**

Based on these assumptions, emissions reductions were calculated using the default emissions reduction factor and 20-year growing period for miscellaneous species class obtained from CalEEMod (see CalEEMod User's Guide Appendix A). The emission reductions for each tree were multiplied by the total number of trees, and then adjusted for the assumed 20-year period as defined in CalEEMod.

## Local Electric Vehicle Charging Stations in City of Inglewood

Prior to the issuance of grading permits for the IBEC Project, the Applicant will enter into agreements to install twenty electric vehicle charging stations (EVCS) at locations in the City of Inglewood. These EVCS will be available in Inglewood for use by the public to charge electric vehicles at the start of construction of the proposed Project.

### Estimated Results

The GHG reductions estimated for this measure are as follows:

Timeframe and Number of Units	MT CO <sub>2</sub> e Reduced
2021-2030 emissions reductions per EVCS	101
2021-2030 emissions reductions achieved from all 20 EVCS	2,029

### Calculation Methodology

The methodology to calculate GHG emissions reductions for this measure is based on a technical analysis produced by the California Air Resources Board in 2018 to study the effectiveness of EVCS, which includes an estimate of the GHG emissions reduction per EVCS.<sup>5</sup> The emissions reduction estimate methodology and calculations per local EVCS are derived from Appendix H, Table H1 of that analysis. Each EVCS is conservatively assumed to be maintained and in operation for 10 years. Using this methodology, the following assumptions and resulting calculated inputs were used to derive the emissions reductions estimates:

Parameter	Assumption
<i>(italicized values were calculated based on parameters listed above them)</i>	
Years of emissions reductions included (assumed operating life of EVCS)	10
Annual Gasoline-Fueled Vehicle VMT Reduction per EVCS (PHEV)	36,500 <sup>a</sup>
Annual Gasoline-Fueled Vehicle VMT Reduction per EVCS (BEV)	73,000 <sup>a</sup>
<i>Calculated Annual Gasoline-Fueled Vehicle VMT Reduction per EVCS</i>	<i>54,750<sup>b</sup></i>
Fuel Economy of an EV (kWh/mile)	0.25 <sup>a</sup>
Fuel Economy of an EV (MWh/mile)	0.00025
<i>Calculated MWh used per EVCS per year</i>	<i>13.69</i>
<sup>a</sup> California Air Resources Board, <i>Electric Vehicle (EV) Charging Infrastructure: Multifamily Building Standards, Appendix H: Greenhouse Gas Reduction Estimates</i> , Table H1.	
<sup>b</sup> Annual VMT reduction based on conservative assumption of 50% Plug-in Hybrid Electric Vehicle (PHEV) and 50% Battery Electric Vehicle (BEV).	

These inputs were used to calculate emissions reductions based on the assumption that the EV chargers would facilitate displacement of gasoline-fueled passenger vehicles, reducing VMT and associated GHG emissions from such vehicles. The results were derived as follows:

- (A) Avoided fossil-fueled vehicle emissions for each year were calculated by multiplying the estimated EV miles per EVCS by annual emission factors derived from EMFAC 2017.<sup>6</sup>
- (B) Indirect emissions associated with EVCS charging use were calculated by multiplying the calculated MWh used per EVCS by annual estimated Southern California Edison

<sup>5</sup> California Air Resources Board, *Electric Vehicle (EV) Charging Infrastructure: Multifamily Building Standards, Appendix H: Greenhouse Gas Reduction Estimates* (April 2018), available at: <https://ww3.arb.ca.gov/cc/greenbuildings/pdf/tcac2018.pdf>.

<sup>6</sup> California Air Resources Board, EMFAC2017 Web Database, available at: <https://www.arb.ca.gov/emfac/2017/>.



emission factors.

- (C) Net emissions reductions were calculated by subtracting the EVCS charging use indirect emissions (B) from the avoided emissions produced by fossil-fueled vehicle emissions for the EV miles per EVCS (A).

The tables below provide the vehicle emissions factors, EVCS emissions factors, and annual reductions per EVCS used to calculate the total reductions per EVCS over the assumed 10-year operating period.

<b>Vehicle Emissions Factors</b>				
<b>Year</b>	<b>CO<sub>2</sub> (grams/mile)</b>	<b>CH<sub>4</sub> (grams/mile)</b>	<b>N<sub>2</sub>O (grams/mile)</b>	<b>MT CO<sub>2</sub>e / mile</b>
2021	270.666440	0.003250	0.004965	0.000272
2022	263.568081	0.002843	0.004579	0.000264
2023	256.386274	0.002506	0.004259	0.000257
2024	249.204639	0.002223	0.003996	0.000250
2025	241.943303	0.001984	0.003783	0.000243
2026	235.484857	0.001788	0.003616	0.000236
2027	229.729586	0.001626	0.003482	0.000230
2028	224.621022	0.001490	0.003377	0.000225
2029	220.072932	0.001374	0.003291	0.000221
2030	216.037270	0.001274	0.003224	0.000217

*Notes:*  
Emission factors derived from EMFAC 2017 (LDA vehicle class, 30 mph, RUNEX emissions factors, South Coast Air Basin, Aggregate)

<b>EVCS Emissions Factors</b>	
<b>Emissions per MWh</b>	
<b>Year</b>	<b>MTCO<sub>2</sub>e / MWh</b>
2021	0.242566
2022	0.238646
2023	0.234496
2024	0.230576
2025	0.226656
2026	0.222967
2027	0.219047
2028	0.215127
2029	0.211438
2030	0.207518

*Notes:*  
Estimated SCE emission factors were calculated for the AB 987 application June 2019 submittal, based on the 2017 California Energy Commission (CEC) power content label and 2017 SCE GHG emissions factor of 549 pounds CO<sub>2</sub>e per MWh; future year GHG intensities were interpolated assuming a linear trajectory toward 100 percent clean electricity by 2045.

<b>Net Emissions Reductions per Local EVCS</b>				
<b>Year</b>	<b>Fossil Fuel Vehicle VMT to EV Vehicle VMT (MT CO<sub>2</sub>e)</b>	<b>Fossil Fuel Vehicle VMT Emissions (MT CO<sub>2</sub>e)</b>	<b>Indirect EVCS Emissions (MT CO<sub>2</sub>e)</b>	<b>Net Reductions (MT CO<sub>2</sub>e)</b>
2021	54,750	14.874631	3.320121	11.554510
2022	54,750	14.479932	3.266468	11.213464
2023	54,750	14.081839	3.209660	10.872179
2024	54,750	13.684775	3.156008	10.528767
2025	54,750	13.284216	3.102356	10.181860
2026	54,750	12.928324	3.051860	9.876464
2027	54,750	12.611463	2.998208	9.613255
2028	54,750	12.330423	2.944556	9.385867
2029	54,750	12.080366	2.894059	9.186307
2030	54,750	11.858617	2.840407	9.018210
<b>TOTAL</b>				<b>101.430884</b>

## **IBEC On-Site Waste Reduction and Diversion Program**

The Applicant will implement a waste reduction and diversion program for operations of the IBEC Project, with the exception of the hotel, with a goal of reducing landfill waste to zero. Effectiveness of the program shall be monitored annually through the U.S. EPA's WasteWise program or a similar annual reporting system.<sup>7</sup>

### **Estimated Results**

The GHG reductions estimated for this measure are as follows:

<b>Timeframe</b>	<b>MT CO<sub>2</sub>e Reduced</b>
IBEC Operations 2024-2054	31,587

### **Calculation Methodology**

The GHG emissions reductions for the implementation of a waste reduction and landfill diversion program for the proposed IBEC Project are calculated based on the assumption that the program will reduce landfill waste for all uses included in the proposed Project except for the hotel component. The program will have a goal of zero landfill waste. The reductions presented therefore assume elimination of GHG emissions as calculated in the mitigated emissions scenario in the AB 987 Application (IBEC Project Greenhouse Gas Analysis Supplemental Technical Memorandum and Attachment 3, Appendix A). As documented in that submittal, those indirect GHG emissions were calculated using waste generation rates for California arena venues, along with CalEEMod default generation rates for other land uses. The potential GHG emissions reductions that could be achieved through a 100% reduction and diversion rate for all uses except for the hotel were similarly calculated using CalEEMod.<sup>8</sup>

For purposes of calculating the potential reductions for the IBEC Project waste program, the effectiveness of the program has been adjusted to allow for implementation and modification of the program and to provide conservative estimate of emissions reductions based on waste diversion rates observed for other large sports and entertainment venues,<sup>9</sup> using the following assumptions:

<b>Parameter</b>	<b>Assumption</b>
Years of emissions reductions included	2024-2054
Assumed waste reduction and diversion, 2024-2026	80%
Assumed waste reduction and diversion, 2027-2028	85%
Assumed waste reduction and diversion, 2029-2054	90%

<sup>7</sup> See U.S. Environmental Protection Agency, WasteWise Program, available at: <https://www.epa.gov/smm/wastewise#01>. Other monitoring and reporting programs or systems include the GBCI TRUE Zero Waste Program, see <https://true.gbci.org>.

<sup>8</sup> California Emissions Estimator Model Version 2016.3.2 (CalEEMod), available at: <http://www.caleemod.com/>.

<sup>9</sup> Waste reduction and diversion programs at other sports and entertainment venues have achieved diversion rates over 90%, including diversion rates of 95% to 97% at CenturyLink Field in Seattle (see <https://www.epa.gov/newsreleases/centurylink-field-seattle-earns-epas-wastewise-award-reducing-waste-saving-resources>), 93% to 94% at Ohio Stadium in Columbus (see <https://ohiostatebuckeyes.com/zero-waste-at-ohio-stadium/>), and 94% at Pauley Pavilion in Los Angeles and 92% at Haas Pavilion in Berkeley (see <https://pac-12.com/article/2019/05/20/california-selected-overall-winner-pac-12-zero-waste-challenge-2018-19-basketball>).

<b>Waste Program Emissions Reductions</b>				
<b>Year</b>	<b>IBEC Operational Solid Waste Emissions (MT CO<sub>2</sub>e)</b>	<b>100% Diversion Potential Emissions Reductions (MT CO<sub>2</sub>e)<sup>1</sup></b>	<b>Waste Reduction / Diversion</b>	<b>IBEC Waste Program Emissions Reductions (MT CO<sub>2</sub>e)</b>
2024	603.42	582.78	80%	466.22
2025	1,206.83	1,165.56	80%	932.45
2026	1,206.83	1,165.56	80%	932.45
2027	1,206.83	1,165.56	85%	990.73
2028	1,206.83	1,165.56	85%	990.73
2029	1,206.83	1,165.56	90%	1,049.00
2030	1,206.83	1,165.56	90%	1,049.00
2031	1,206.83	1,165.56	90%	1,049.00
2032	1,206.83	1,165.56	90%	1,049.00
2033	1,206.83	1,165.56	90%	1,049.00
2034	1,206.83	1,165.56	90%	1,049.00
2035	1,206.83	1,165.56	90%	1,049.00
2036	1,206.83	1,165.56	90%	1,049.00
2037	1,206.83	1,165.56	90%	1,049.00
2038	1,206.83	1,165.56	90%	1,049.00
2039	1,206.83	1,165.56	90%	1,049.00
2040	1,206.83	1,165.56	90%	1,049.00
2041	1,206.83	1,165.56	90%	1,049.00
2042	1,206.83	1,165.56	90%	1,049.00
2043	1,206.83	1,165.56	90%	1,049.00
2044	1,206.83	1,165.56	90%	1,049.00
2045	1,206.83	1,165.56	90%	1,049.00
2046	1,206.83	1,165.56	90%	1,049.00
2047	1,206.83	1,165.56	90%	1,049.00
2048	1,206.83	1,165.56	90%	1,049.00
2049	1,206.83	1,165.56	90%	1,049.00
2050	1,206.83	1,165.56	90%	1,049.00
2051	1,206.83	1,165.56	90%	1,049.00
2052	1,206.83	1,165.56	90%	1,049.00
2053	1,206.83	1,165.56	90%	1,049.00
2054	1,206.83	1,165.56	90%	1,049.00
<b>TOTAL REDUCTIONS</b>				<b>31,586.65</b>
<i>Notes:</i>				
<sup>1</sup> Emissions reductions derived from CalEEMod modeling results with a 96.58% reduction in waste disposed, consistent with a 100% waste diversion/reduction rate for all Project land uses except the hotel (see CalEEMod run output, attached).				

## **IBEC On-Site Electric Vehicle Charging Stations**

The Applicant will install a minimum of 330 electric vehicle charging stations (EVCS) within the three on-site parking structures serving the proposed IBEC Project for use by visitors, event attendees, employees, and the public.

### **Estimated Results**

The GHG reductions estimated for this measure are as follows:

<b>Timeframe</b>	<b>MT CO<sub>2</sub>e Reduced</b>
IBEC Project Operations 2024-2054	13,918

### **Calculation Methodology**

The methodology to calculate GHG emissions reductions for this measure is based on a technical analysis produced by the California Air Resources Board in 2018 to study the effectiveness of EVCS, which includes an estimate of the GHG emissions reduction per EVCS.<sup>10</sup> The emissions reduction estimate methodology and calculations per on-site EVCS are derived from Appendix H, Table H1 of that analysis. Each on-site EVCS is assumed to be operated and maintained for the 30-year operational life of the IBEC Project, consistent with the operational life assumed in the AB 987 Application. Where appropriate, IBEC Project-specific inputs have been incorporated into the methodology, as noted below. Using this methodology, the following assumptions and resulting calculated inputs were used to derive the emissions reductions estimates:

<b>Parameter</b>	<b>Input</b>
<i>(italicized values were calculated based on parameters listed above them)</i>	
Years of emissions reductions included	2024 – 2054
Total EV Charging Stations installed at IBEC	330
Total annual charge hours of use at IBEC (all EVCSs)	168,034
BEV mileage per hour of charge	20 <sup>a</sup>
PHEV mileage per hour of charge	10 <sup>a</sup>
<i>Calculated average mileage per hour of charge</i>	<i>15<sup>b</sup></i>
<i>Calculated EV miles per EVCS per year, displacing fossil fuel vehicles</i>	<i>7,638</i>
Fuel Economy of an EV (kWh/mile)	0.25 <sup>a</sup>
Fuel Economy of an EV (MWh/mile)	0.00025
<i>Calculated MWh used per EVCS per year</i>	<i>1.91</i>
<b>Notes:</b>	
<sup>a</sup> California Air Resources Board, <i>Electric Vehicle (EV) Charging Infrastructure: Multifamily Building Standards, Appendix H: Greenhouse Gas Reduction Estimates</i> , Table H1.	
<sup>b</sup> Miles per charge estimate based on conservative assumption of 50% Plug-in Hybrid Electric Vehicle (PHEV) and 50% Battery Electric Vehicle (BEV).	

These inputs were used to calculate emissions reductions based on the assumption that the EV chargers would facilitate displacement of vehicle miles traveled by gasoline-fueled passenger vehicles, reducing VMT and associated GHG emissions from such vehicles. Results were derived as follows:

<sup>10</sup> California Air Resources Board, *Electric Vehicle (EV) Charging Infrastructure: Multifamily Building Standards, Appendix H: Greenhouse Gas Reduction Estimates* (April 2018), available at: <https://ww3.arb.ca.gov/cc/greenbuildings/pdf/tcac2018.pdf>.

- (A) Avoided gasoline vehicle emissions for each year were calculated by multiplying the calculated EV miles per EVCS by annual emission factors derived from EMFAC 2017.<sup>11</sup>
- (B) Indirect emissions associated with EVCS charging use were calculated by multiplying the calculated MWh used per EVCS by annual estimated Southern California Edison emission factors.
- (C) Net emissions reductions were calculated by subtracting the EVCS charging use indirect emissions (B) from the avoided emissions produced by fossil-fueled vehicle emissions for the EV miles per EVCS (A).

IBEC EVCS Utilization <sup>1</sup>								
Parking Structure	EVCS	Event Day Charge Hours per EVCS*	Event Days EVCS in Use	Annual Charge Hours Event Days	Non-Event Day Charge Hours per EVCS**	Non-Event Days EVCS in Use	Annual Charge Hours Non-Event Days	Total Annual Charge Hours
South	52	6	243	75,816	4	122	25,376	101,192
West	249	2	127	63,246	0	-	0	63,246
East	29	2	62	3,596	0	-	0	3,596
IBEC Total	330			142,658			25,376	168,034
<b>Average annual charge hours per EVCS</b>								<b>509</b>
<b>Miles per charge hour</b>								<b>15</b>
<b>EV miles per EVCS per year</b>								<b>7,638</b>
<i>Notes:</i>								
<sup>1</sup> EVCS utilization assumptions based on the methodology employed in <i>California Air Resources Board, Electric Vehicle (EV) Charging Infrastructure: Multifamily Building Standards, Appendix H: Greenhouse Gas Reduction Estimates</i> (April 2018), adjusted to assume 4 hours of EVCS use by employees and ancillary use visitors during non-event periods in the South parking structure, and 2 hours EVCS use during events in all structures utilized for an event.  Parking structure and EVCS utilization based on projected events to be hosted at IBEC as stated in the IBEC Project AB 987 Application; West parking structure utilized during all projected events over 7,500 attendees, East parking structure utilized during all projected events over 14,500 attendees.								

<sup>11</sup> California Air Resources Board, EMFAC2017 Web Database, available at: <https://www.arb.ca.gov/emfac/2017/>.

<b>Fossil Fuel Vehicle Emissions</b>				
<b>Year</b>	<b>CO<sub>2</sub> (grams/mile)</b>	<b>CH<sub>4</sub> (grams/mile)</b>	<b>N<sub>2</sub>O (grams/mile)</b>	<b>MT CO<sub>2</sub>e / mile</b>
2024	249.204639	0.002223	0.003996	0.000250
2025	241.943303	0.001984	0.003783	0.000243
2026	235.484857	0.001788	0.003616	0.000236
2027	229.729586	0.001626	0.003482	0.000230
2028	224.621022	0.001490	0.003377	0.000225
2029	220.072932	0.001374	0.003291	0.000221
2030	216.037270	0.001274	0.003224	0.000216
2031	212.501747	0.001188	0.003170	0.000213
2032	209.361117	0.001113	0.003126	0.000210
2033	206.612987	0.001048	0.003092	0.000207
2034	204.218929	0.000991	0.003065	0.000205
2035	202.150383	0.000939	0.003042	0.000203
2036	200.379193	0.000894	0.003025	0.000201
2037	198.882561	0.000856	0.003012	0.000199
2038	197.629716	0.000824	0.003002	0.000198
2039	196.591155	0.000796	0.002994	0.000197
2040	195.737668	0.000771	0.002988	0.000196
2041	195.047960	0.000750	0.002983	0.000195
2042	194.493749	0.000734	0.002979	0.000195
2043	194.054473	0.000721	0.002976	0.000194
2044	193.709337	0.000712	0.002975	0.000194
2045	193.436791	0.000707	0.002975	0.000194
2046	193.224733	0.000703	0.002974	0.000194
2047	193.058935	0.000699	0.002974	0.000193
2048	192.927845	0.000697	0.002973	0.000193
2049	192.823939	0.000695	0.002973	0.000193
2050	192.740525	0.000694	0.002973	0.000193
2051	192.740525	0.000694	0.002973	0.000193
2052	192.740525	0.000694	0.002973	0.000193
2053	192.740525	0.000694	0.002973	0.000193
2054	192.740525	0.000694	0.002973	0.000193

Notes:  
Emission factors derived from EMFAC 2017 (LDA vehicle class, 30 mph, RUNEX emissions factors, South Coast Air Basin, Aggregate)

<b>EVCS Emissions Factors</b>	
<b>Emissions per MWh</b>	
<b>Year</b>	<b>MTCO<sub>2</sub>e / MWh</b>
2024	0.230576
2025	0.226656
2026	0.222967
2027	0.219047
2028	0.215127
2029	0.211438
2030	0.207518
2031	0.193684
2032	0.179849
2033	0.166015
2034	0.152180
2035	0.138346
2036	0.124511
2037	0.110676
2038	0.096842
2039	0.083007
2040	0.069173
2041	0.055338
2042	0.041504
2043	0.027669
2044	0.013835
2045	-
2046	-
2047	-
2048	-
2049	-
2050	-
2051	-
2052	-
2053	-
2054	-

**Notes:**  
Estimated SCE emission factors were calculated for the AB 987 application June 2019 submittal, based on the 2017 California Energy Commission (CEC) power content label and 2017 SCE GHG emissions factor of 549 pounds CO<sub>2</sub>e per MWh; future year GHG intensities were interpolated assuming a linear trajectory toward 100 percent clean electricity by 2045.



<b>Net Emissions Reductions per EVCS</b>			
Year	Fossil Fuel VMT Emissions (MT CO <sub>2</sub> e)	Indirect EVCS Emissions (MT CO <sub>2</sub> e)	Net Reductions (MT CO <sub>2</sub> e)
2024	0.954549	0.220140	0.734409
2025	1.853217	0.432795	1.420422
2026	1.803568	0.425750	1.377818
2027	1.759365	0.418266	1.341099
2028	1.720158	0.410781	1.309377
2029	1.685274	0.403736	1.281537
2030	1.654339	0.396252	1.258087
2031	1.627249	0.369835	1.257415
2032	1.603197	0.343418	1.259779
2033	1.582159	0.317001	1.265158
2034	1.563837	0.290584	1.273253
2035	1.548008	0.264168	1.283841
2036	1.534458	0.237751	1.296707
2037	1.523014	0.211334	1.311680
2038	1.513435	0.184917	1.328518
2039	1.505496	0.158501	1.346995
2040	1.498970	0.132084	1.366886
2041	1.493698	0.105667	1.388031
2042	1.489461	0.079250	1.410211
2043	1.486104	0.052834	1.433271
2044	1.483469	0.026417	1.457052
2045	1.481390	0.000000	1.481390
2046	1.479771	0.000000	1.479771
2047	1.478506	0.000000	1.478506
2048	1.477504	0.000000	1.477504
2049	1.476712	0.000000	1.476712
2050	1.476076	0.000000	1.476076
2051	1.476076	0.000000	1.476076
2052	1.476076	0.000000	1.476076
2053	1.476076	0.000000	1.476076
2054	1.476076	0.000000	1.476076
<b>TOTAL</b>			<b>42.175808</b>

## **IBEC On-Site Smart Parking**

The Applicant shall install systems in the on-site parking structures serving the proposed IBEC Project to reduce vehicle circulation and idle time within the structures by more efficiently directing vehicles to available parking spaces.

### **Estimated GHG Emissions Reduction Results**

The GHG reductions estimated for this measure are as follows:

<b>Timeframe and Scope</b>	<b>MT CO<sub>2</sub>e Reduced</b>
2024-2054 emissions reductions from all IBEC garages	1,480

### **Assumptions**

<b>Parameter</b>	<b>Assumption</b>	
	<i>Parking Structure</i>	<i>Self-Park Spaces</i>
Self-Park Spaces	West	3,110
	South	650
	East	365
Time saved	Varies based on parking structure size: Ranges from 0.5 to 3 minutes	
Expected garage utilization rate	Varies by event type	
Vehicle speed while parking	5 miles per hours	

### **Calculation Methodology**

Based on these assumptions, emissions reductions were calculated by determining the amount of circulation and idling time saved by usage of the smart parking systems in the IBEC Project parking structures and calculating the associated emissions reductions, using emissions factors obtained from EMFAC 2017<sup>12</sup> for the years 2024 to 2054, using the inputs of light duty auto (LDA) vehicle class, operating at 5 miles per hour and converted to grams/minute using travel speed and emission factor.

<sup>12</sup> California Air Resources Board, EMFAC2017 Web Database, available at: <https://www.arb.ca.gov/emfac/2017/>. To provide a conservative emission reduction estimate, emission factors were computed for each year with decreasing emission factors for each new year due to assumed upgrades in vehicle fleets.

<b>IBEC Parking Structure Utilization</b>						
<b>West Parking Structure (Event Parking)</b>						
<b>Capacity</b>						
Self-Park Spaces Total	3,110					
<b>Utilization</b>			<b>Minutes/Year Saved from Smart Parking</b>			
Event Type	Annual Occurrence	Garage Utilization per Event Type	Parking Spaces Utilized/Year	Average Time Savings	Minutes Saved per Event Type	Total Minutes Saved All Events
NBA Games Large Concert Medium Concert	62	100%	192,820	3	578,460	971,564
Small Concert Family Show	30	90%	83,970	2	167,940	
Other Events	35	80%	87,080	2	174,160	
Plaza Events	16	40%	19,904	1	19,904	
Corporate/ Community Events	100	20%	62,200	0.5	31,100	
<b>East Parking Structure (Event Parking)</b>						
<b>Capacity</b>						
Self-Park Spaces Total	365					
<b>Utilization</b>			<b>Minutes/Year Saved</b>			
Event Type	Annual Occurrence	Garage Utilization per Event Type	Parking Spaces Utilized/Year	Average Time Savings	Minutes Saved Per Event Type	Total Minutes Saved All Events
NBA Games Large Concert Medium Concert	62	100%	22,630	0.5	11,315	11,315
<b>South Parking Structure (Event, Employee, and Ancillary Use Visitor Parking)</b>						
<b>Capacity</b>						
Self-Park Spaces Total	650					
<b>Utilization</b>			<b>Minutes/Year Saved</b>			
Event Type	Annual	Garage Utilization	Parking Spaces Utilized/Year	Average Time Savings	Minutes Saved Per Event Type	Total Minutes Saved All Events
All parking	365 days	100%	237,250	1	237,250	237,250
Total Minutes Saved per Year, All Structures					1,220,129	

Emission Factors						
YEAR	grams/mi*				grams/hr**	grams/min
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e***	CO <sub>2</sub> e	CO <sub>2</sub> e
2024	593.516741	0.012850	0.006881	595.888628	2,979.4431	49.657386
2025	576.206751	0.011485	0.006511	578.434020	2,892.1701	48.202835
2026	560.828584	0.010369	0.006218	562.940663	2,814.7033	46.911722
2027	547.139161	0.009442	0.005985	549.158817	2,745.7941	45.763235
2028	534.995460	0.008668	0.005801	536.940730	2,684.7036	44.745061
2029	524.187891	0.008008	0.005650	526.071816	2,630.3591	43.839318
2030	514.600272	0.007441	0.005531	516.434445	2,582.1722	43.036204
2031	506.367491	0.006969	0.005436	508.161639	2,540.8082	42.346803
2032	498.898068	0.006539	0.005359	500.658474	2,503.2924	41.721539
2033	492.362175	0.006165	0.005298	494.095122	2,470.4756	41.174594
2034	486.668912	0.005832	0.005249	488.378902	2,441.8945	40.698242
2035	481.750950	0.005535	0.005209	483.441486	2,417.2074	40.286790
2036	477.540815	0.005275	0.005177	479.215315	2,396.0766	39.934610
2037	473.983724	0.005057	0.005153	475.645849	2,378.2292	39.637154
2038	471.006662	0.004870	0.005135	472.658748	2,363.2937	39.388229
2039	468.539301	0.004707	0.005122	470.183215	2,350.9161	39.181935
2040	466.511827	0.004562	0.005110	468.148624	2,340.7431	39.012385
2041	464.873494	0.004441	0.005101	466.504614	2,332.5231	38.875384
2042	463.556703	0.004342	0.005094	465.183299	2,325.9165	38.765275
2043	462.512494	0.004269	0.005089	464.135859	2,320.6793	38.677988
2044	432.496262	0.003951	0.004765	434.015079	2,170.0754	36.167923
2045	432.554129	0.003927	0.004772	434.074340	2,170.3717	36.172862
2046	432.688279	0.003908	0.004778	434.209790	2,171.0490	36.184149
2047	432.911477	0.003894	0.004783	434.434289	2,172.1714	36.202857
2048	433.174165	0.003884	0.004788	434.698177	2,173.4909	36.224848
2049	433.437440	0.003879	0.004794	434.962966	2,174.8148	36.246914
2050	433.698752	0.003876	0.004798	435.225578	2,176.1279	36.268798
2051	433.698752	0.003876	0.004798	435.225578	2,176.1279	36.268798
2052	433.698752	0.003876	0.004798	435.225578	2,176.1279	36.268798
2053	433.698752	0.003876	0.004798	435.225578	2,176.1279	36.268798
2054	433.698752	0.003876	0.004798	435.225578	2,176.1279	36.268798

Notes:  
\*EMFAC 2017 (LDA vehicle class, 5 mph, RUNEX emissions factors, South Coast Air Basin, Aggregate)  
\*\*Derived based on one hour of run time at 5 mph (g/mi \* mi/hr = g/hr)  
\*\*\*Derived from carbon dioxide, methane, and nitrous oxide with GWPs of 1, 25, and 298, respectively.

<b>Smart Parking Emissions Reductions</b>			
<b>YEAR</b>	<b>Emissions Factor grams/min CO<sub>2</sub>e</b>	<b>Minutes Saved Per Year</b>	<b>Emissions Reductions MT/yr* CO<sub>2</sub>e</b>
2024	49.657386	610,065	30.233620
2025	48.202835	1,220,129	58.696050
2026	46.911722	1,220,129	57.123876
2027	45.763235	1,220,129	55.725376
2028	44.745061	1,220,129	54.485557
2029	43.839318	1,220,129	53.382644
2030	43.036204	1,220,129	52.404701
2031	42.346803	1,220,129	51.565226
2032	41.721539	1,220,129	50.803849
2033	41.174594	1,220,129	50.137839
2034	40.698242	1,220,129	49.557791
2035	40.286790	1,220,129	49.056771
2036	39.934610	1,220,129	48.627925
2037	39.637154	1,220,129	48.265716
2038	39.388229	1,220,129	47.962603
2039	39.181935	1,220,129	47.711401
2040	39.012385	1,220,129	47.504942
2041	38.875384	1,220,129	47.338118
2042	38.765275	1,220,129	47.204039
2043	38.677988	1,220,129	47.097751
2044	36.167923	1,220,129	44.041273
2045	36.172862	1,220,129	44.047286
2046	36.184149	1,220,129	44.061031
2047	36.202857	1,220,129	44.083812
2048	36.224848	1,220,129	44.110590
2049	36.246914	1,220,129	44.137459
2050	36.268798	1,220,129	44.164107
2051	36.268798	1,220,129	44.164107
2052	36.268798	1,220,129	44.164107
2053	36.268798	1,220,129	44.164107
2054	36.268798	1,220,129	44.164107
<b>TOTAL</b>			<b>1,480.1878</b>
<i>Notes:</i>			
*Conversion factor grams/year to metric tons/year = 0.000000998			

## **IBEC On-site Use of Renewable Energy**

The Applicant could use 100% renewable electricity to displace use of electricity provided by Southern California Edison that is derived from a mix of fossil and renewable energy sources, and use renewable natural gas (RNG) to displace the use of traditional, non-renewable natural gas.

### **Estimated Results**

The GHG reductions estimated for this measure are as follows:

<b>Timeframe</b>	<b>Source</b>	<b>MT CO<sub>2</sub>e Reduced</b>
IBEC Project Operations 2024-2054	Green Power	52,889
IBEC Project Operations 2024-2054	Renewable Natural Gas	30,827

### **GHG Emissions Reductions Calculation – Renewable Electrical Power**

The emissions reductions for green power are calculated on the assumption that if the proposed Project used 100% renewable electricity, all GHG emissions from IBEC electricity usage would be eliminated. The reductions presented, therefore, are from 100 percent elimination of the mitigated emissions scenario from the AB 987 Application. As documented in the Application, those electricity emissions were calculated as follows:

- Southern California Edison annual emission factors were estimated based on the 2017 California Energy Commission power content label<sup>13</sup> and the 2017 SCE GHG emissions factor.<sup>14</sup>
- Future year GHG intensities were interpolated for 2024 through 2054 assuming a linear trajectory toward 100 percent clean electricity by 2045, based on Southern California Edison meeting California’s Renewable Portfolio Standard<sup>15</sup> phased requirements.
- These estimated emission factors for each year were entered into CalEEMod,<sup>16</sup> and multiplied by the project’s annual electricity consumption, to derive the emissions results for each year.

The emissions reductions for renewable natural gas are calculated on the assumption that the proposed Project’s use of 100% renewable natural gas will eliminate all anthropogenic CO<sub>2</sub> emissions from Project’s natural gas usage. Emissions of CH<sub>4</sub> and N<sub>2</sub>O from renewable natural gas are considered anthropogenic,<sup>17</sup> and so only CO<sub>2</sub> emissions reductions are accounted from displacement of the fossil-derived natural gas. The reductions presented, therefore, are from 100 percent elimination of the mitigated emissions scenario’s CO<sub>2</sub> emissions from the AB 987 Application.

<sup>13</sup> California Energy Commission, *Southern California Edison Power Content Label (2017)*, available at: [https://ww2.energy.ca.gov/pcl/labels/2017\\_labels/SCE\\_2017\\_PCL.pdf](https://ww2.energy.ca.gov/pcl/labels/2017_labels/SCE_2017_PCL.pdf).

<sup>14</sup> Edison International, *Edison International Sustainability Report (2017)*, available at: <https://www.edison.com/content/dam/eix/documents/sustainability/eix-2017-sustainability-report.pdf>.

<sup>15</sup> California Public Utilities Commission, Renewable Portfolio Standards Program, available at: <https://www.cpuc.ca.gov/rps/>.

<sup>16</sup> California Emissions Estimator Model Version 2016.3.2 (CalEEMod), available at: <http://www.caleemod.com/>.

<sup>17</sup> WRI/WBCSD Calculation Tool for Direct Emissions from Stationary Combustion (2005), available at: [https://ghgprotocol.org/sites/default/files/Stationary\\_Combustion\\_Guidance\\_final\\_1.pdf](https://ghgprotocol.org/sites/default/files/Stationary_Combustion_Guidance_final_1.pdf).

<b>Renewable Energy Potential Reductions</b>		
<b>Year</b>	<b>Green Power Potential Reduction Per Year MTCO<sub>2</sub>e</b>	<b>Renewable Natural Gas Potential Reduction Per Year MTCO<sub>2</sub>e</b>
2024	2,124.23	505
2025	4,176.26	1,011
2026	4,105.73	1,011
2027	4,035.21	1,011
2028	3,964.69	1,011
2029	3,894.17	1,011
2030	3,823.64	1,011
2031	3,568.73	1,011
2032	3,313.83	1,011
2033	3,058.92	1,011
2034	2,804.01	1,011
2035	2,549.10	1,011
2036	2,294.19	1,011
2037	2,039.28	1,011
2038	1,784.37	1,011
2039	1,529.46	1,011
2040	1,274.55	1,011
2041	1,019.64	1,011
2042	764.73	1,011
2043	509.82	1,011
2044	254.91	1,011
2045	0	1,011
2046	0	1,011
2047	0	1,011
2048	0	1,011
2049	0	1,011
2050	0	1,011
2051	0	1,011
2052	0	1,011
2053	0	1,011
2054	0	1,011
<b>Total</b>	<b>52,889</b>	<b>30,827</b>

IBEC Operations - Maximum Attendees - Los Angeles-South Coast County, Annual

**IBEC Operations - Maximum Attendees**  
**Los Angeles-South Coast County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	71.00	1000sqft	1.50	71,000.00	0
Government (Civic Center)	15.00	1000sqft	0.50	15,000.00	0
Medical Office Building	25.00	1000sqft	0.50	25,000.00	0
Other Non-Asphalt Surfaces	83.90	1000sqft	1.93	83,903.00	0
Unenclosed Parking Structure	650.00	Space	0.00	214,500.00	0
Unenclosed Parking Structure	3,110.00	Space	4.00	1,063,435.00	0
Unenclosed Parking Structure	590.00	Space	3.35	137,000.00	0
Arena	915.00	1000sqft	7.60	915,000.00	0
Fast Food Restaurant w/o Drive Thru	9.00	1000sqft	1.00	9,000.00	0
Health Club	85.00	1000sqft	1.00	85,000.00	0
Hotel	150.00	Room	5.00	217,800.00	0
Quality Restaurant	15.00	1000sqft	1.00	15,000.00	0
Strip Mall	24.00	1000sqft	1.00	24,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	508.33	<b>CH4 Intensity (lb/MW hr)</b>	0	<b>N2O Intensity (lb/MW hr)</b>	0



IBEC Operations - Maximum Attendees - Los Angeles-South Coast County, Annual

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - IBEC operations run. CO2e intensity rate adjusted per RPS mandates based on 2017 SCE Sustainability Report.

Land Use - Project specific land uses provided in programming details.

Construction Phase - Operational run only.

Off-road Equipment - Operational run only.

Off-road Equipment - Operational run only.

Trips and VMT - Operational run only.

Architectural Coating - Operational run only.

Vehicle Trips - Mobile sources calculated separately.

Energy Use - Energy consumption from ancillary land uses included within arena land use based on Concept Design white box energy model. Default energy consumption rates used for parking structures and hotel.

Water And Wastewater - Based on Stetson Water Demand Analysis. Outdoor water use combined in Arena total. Cooling tower water demand calculated separately.

Solid Waste - Arena solid waste factor based on factor used in Sacramento Entertainment and Sports Center EIR, 2013. Retail and office solid waste generation factor consistent with GSW NOP. Default rates for remaining ancillary land uses.

Energy Mitigation - GHG emissions reductions achieved through LEED features of the following: 1,085,000 kWhr/year and 10% improvement over Title 24 per CalGreen Code Tier 1.

Water Mitigation - EED features of the following: 51% water conservation of outdoor usage and 41% of indoor usage per Stetson Water Demand Analysis.

Stationary Sources - Emergency Generators and Fire Pumps - Emergency Generators and Fire Pumps - 1 2,500 kW emergency generator based on concept design. Assumes 50 hours per year for maintenance and testing based on Concept Design.

Waste Mitigation - A 96.58% reduction in waste disposed consistent with a Zero Waste Plan for all land uses except the hotel.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	688,400.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,065,200.00	0.00
tblArchitecturalCoating	ConstArea_Parking	89,930.00	0.00
tblConstructionPhase	NumDays	35.00	1.00
tblConstructionPhase	NumDays	20.00	1.00
tblEnergyUse	LightingElect	2.99	5.96

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tblEnergyUse	LightingElect	7.66	0.00
tblEnergyUse	LightingElect	4.34	0.00
tblEnergyUse	LightingElect	4.34	0.00
tblEnergyUse	LightingElect	2.99	0.00
tblEnergyUse	LightingElect	4.34	0.00
tblEnergyUse	LightingElect	7.66	0.00
tblEnergyUse	LightingElect	5.71	0.00
tblEnergyUse	NT24E	3.83	7.64
tblEnergyUse	NT24E	20.11	0.00
tblEnergyUse	NT24E	4.94	0.00
tblEnergyUse	NT24E	4.94	0.00
tblEnergyUse	NT24E	3.83	0.00
tblEnergyUse	NT24E	4.94	0.00
tblEnergyUse	NT24E	20.11	0.00
tblEnergyUse	NT24E	2.80	0.00
tblEnergyUse	NT24NG	6.86	4.66
tblEnergyUse	NT24NG	180.76	0.00
tblEnergyUse	NT24NG	0.55	0.00
tblEnergyUse	NT24NG	0.55	0.00
tblEnergyUse	NT24NG	6.86	0.00
tblEnergyUse	NT24NG	0.55	0.00
tblEnergyUse	NT24NG	180.76	0.00
tblEnergyUse	NT24NG	1.05	0.00
tblEnergyUse	T24E	1.63	3.25
tblEnergyUse	T24E	8.71	0.00
tblEnergyUse	T24E	4.71	0.00
tblEnergyUse	T24E	4.71	0.00

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tblEnergyUse	T24E	1.63	0.00
tblEnergyUse	T24E	4.71	0.00
tblEnergyUse	T24E	8.71	0.00
tblEnergyUse	T24E	2.93	0.00
tblEnergyUse	T24NG	14.04	9.53
tblEnergyUse	T24NG	78.56	0.00
tblEnergyUse	T24NG	8.59	0.00
tblEnergyUse	T24NG	8.59	0.00
tblEnergyUse	T24NG	14.04	0.00
tblEnergyUse	T24NG	8.59	0.00
tblEnergyUse	T24NG	78.56	0.00
tblEnergyUse	T24NG	0.95	0.00
tblLandUse	LandUseSquareFeet	83,900.00	83,903.00
tblLandUse	LandUseSquareFeet	1,244,000.00	1,063,435.00
tblLandUse	LandUseSquareFeet	236,000.00	137,000.00
tblLandUse	LandUseSquareFeet	260,000.00	214,500.00
tblLandUse	LotAcreage	1.63	1.50
tblLandUse	LotAcreage	0.34	0.50
tblLandUse	LotAcreage	0.57	0.50
tblLandUse	LotAcreage	27.99	4.00
tblLandUse	LotAcreage	5.31	3.35
tblLandUse	LotAcreage	5.85	0.00
tblLandUse	LotAcreage	294.11	7.60
tblLandUse	LotAcreage	0.21	1.00
tblLandUse	LotAcreage	1.95	1.00
tblLandUse	LotAcreage	0.34	1.00
tblLandUse	LotAcreage	0.55	1.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	508.33
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblSolidWaste	SolidWasteGenerationRate	25.18	1,180.35
tblSolidWaste	SolidWasteGenerationRate	66.03	92.30
tblSolidWaste	SolidWasteGenerationRate	25.20	87.60
tblTripsAndVMT	WorkerTripNumber	239.00	0.00
tblVehicleTrips	ST_TR	10.71	0.00
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	ST_TR	8.96	0.00
tblVehicleTrips	ST_TR	94.36	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	10.71	0.00
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	SU_TR	1.55	0.00

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tblVehicleTrips	SU_TR	72.16	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	10.71	0.00
tblVehicleTrips	WD_TR	716.00	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	27.92	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	8.17	0.00
tblVehicleTrips	WD_TR	36.13	0.00
tblVehicleTrips	WD_TR	89.95	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	IndoorWaterUseRate	394,154,657.60	7,623,400.00
tblWater	IndoorWaterUseRate	2,731,803.41	0.00
tblWater	IndoorWaterUseRate	12,619,096.11	2,857,100.00
tblWater	IndoorWaterUseRate	2,979,895.29	0.00
tblWater	IndoorWaterUseRate	5,027,167.24	0.00
tblWater	IndoorWaterUseRate	3,805,015.50	6,843,800.00
tblWater	IndoorWaterUseRate	3,137,013.44	0.00
tblWater	IndoorWaterUseRate	4,553,005.69	2,628,000.00
tblWater	IndoorWaterUseRate	1,777,740.52	2,645,500.00
tblWater	OutdoorWaterUseRate	25,158,807.93	4,888,465.00
tblWater	OutdoorWaterUseRate	174,370.43	0.00
tblWater	OutdoorWaterUseRate	7,734,284.71	0.00
tblWater	OutdoorWaterUseRate	1,826,387.43	0.00
tblWater	OutdoorWaterUseRate	3,081,167.02	0.00
tblWater	OutdoorWaterUseRate	422,779.50	0.00
tblWater	OutdoorWaterUseRate	597,526.37	0.00

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tblWater	OutdoorWaterUseRate	290,617.38	0.00
tblWater	OutdoorWaterUseRate	1,089,582.90	0.00

**2.0 Emissions Summary**

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## 8.2 Waste by Land Use

### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	40.368	8.1943	0.4843	0.0000	20.3011
Fast Food Restaurant w/o Drive Thru	3.54551	0.7197	0.0425	0.0000	1.7830
General Office Building	3.15666	0.6408	0.0379	0.0000	1.5875
Government (Civic Center)	2.9241	0.5936	0.0351	0.0000	1.4705
Health Club	16.5699	3.3635	0.1988	0.0000	8.3330
Hotel	2.80885	0.5702	0.0337	0.0000	1.4126
Medical Office Building	9.234	1.8744	0.1108	0.0000	4.6438
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0.468198	0.0950	5.6200e-003	0.0000	0.2355
Strip Mall	2.99592	0.6081	0.0359	0.0000	1.5067
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>16.6597</b>	<b>0.9846</b>	<b>0.0000</b>	<b>41.2737</b>