November 18, 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
Electric Vehicle Home Charger Program Commitment

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"), and a commitment letter on November 1, 2019 (the "Commitment Letter"). The Commitment Letter included calculations and an emissions reduction methodology for a hypothetical 100% backfill GHG emissions scenario that assumes 100% of the relocated LA Clippers games and market-shifted non-NBA events moving from existing venues to the Project Arena would be replaced (*i.e.*, backfilled) with other non-NBA events at the Existing Venues.

This letter is provided to reaffirm the Applicant's commitments to GHG emissions reduction measures as set forth in the Commitment Letter, and to provide even further 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. Accordingly, as a backstop to ensure that all GHG emissions from the hypothetical 100% backfill GHG emissions scenario would be offset, the Applicant commits to the following additional local, direct GHG emissions reduction measure:

- *Prior to the issuance of grading permits for the Project, the Applicant shall implement a program to cover 100% of the cost of purchasing and installing 1,000 electric vehicle ("EV") chargers for residential use in local communities near the Project site. Residents in the City of Inglewood and surrounding communities who purchase a new or used battery EV shall be eligible for the program. City of Inglewood residents will be given priority for participation in the program. Eligibility requirements and administration of the program shall ensure that only households that do not already own an EV participate in the program.*

As shown in Exhibit A, this EV home charger program is estimated to achieve total GHG emissions reductions of 19,487 MT CO_2e, which exceeds the additional 15,563 MT CO_2e of GHG emissions reductions that would be necessary under the hypothetical 100% backfill scenario from local direct measures that have not already specifically been committed to pursuant to the Commitment Letter.

This additional, enforceable commitment to the EV home charger program provides even further assurance that the Net Zero Standard will be achieved and that not less than 50% of the GHG emissions reductions will be achieved through local, direct measures, and it replaces the potential measure of providing Additional Renewable Energy identified in Exhibit A in the Commitment Letter.

Because the additional EV home charger program commitment would ensure that those requirements are met for the hypothetical 100% backfill scenario, and would be required to be imposed by the City of Inglewood as a condition of approval, the annual verification process proposed in the Commitment Letter is redundant and no longer necessary, and therefore is eliminated. However, the Applicant shall provide documentation to the City of Inglewood regarding the implementation of the EV home charger program and all GHG emissions reduction measures required under the AB 987 Application and the Commitment Letter. Given the rigor of the focus we have each brought to implementation of AB 987, when filing such documentation with the City, copies will be provided to CARB.

Sincerely,

Murphy's Bowl LLC,
a Delaware limited liability company

By: Brandt Vaughan
Its: Manager

Exhibit A

Local Residential Electric Vehicle Charging Units

Prior to the issuance of grading permits for the IBEC Project, the Applicant shall implement a program to cover 100% of the cost of purchasing and installing 1,000 electric vehicle (EV) charging units for residential use in local communities near the Project Site. Residents in the City of Inglewood and surrounding communities who purchase a new or used battery electric vehicle shall be eligible to participate in the program. City of Inglewood residents will be given priority for participation in the program. Eligibility requirements and administration of the program shall ensure that only households that do not already own an electric vehicle participate in the program.

Estimated Results

The program will provide 1,000 residential EV charging units. This estimate of the GHG emissions reductions conservatively assumes that the installation of charging units occurs over a four-year period from 2021 to 2024. The GHG reductions estimated for this measure are as follows:

Summary of Installation Phases	MT CO_2e Reduced
2021-2030 emissions reductions from residential EV charging units installed in 2021	5,043
2022-2031 emissions reductions from residential EV charging units installed in 2022	4,917
2023-2032 emissions reductions from residential EV charging unit installed in 2023	4,808
2024-2033 emissions reductions from residential EV charging unit installed in 2024	4,719
Total 2021-2033 emissions reductions achieved from all residential EV charging units	19,487

Calculation Methodology

The methodology to calculate GHG emissions reductions for this measure is based on California Air Resources Board sources, and other inputs as necessary, as summarized in the discussion and inputs summary table below.

The overall methodology and key inputs were derived from a technical analysis produced by the California Air Resources Board in 2018 to study the effectiveness of EV charging stations, which includes a calculation of the GHG emissions reductions produced by EV charging stations based on the estimated electric vehicle miles traveled per unit.[1]

This estimate of GHG emissions reductions for residential EV charging units conservatively assumes that each unit will be used to charge one electric vehicle that travels the average number of miles per year for vehicles in the South Coast Air Basin based on the California Air Resources Board's EMFAC 2017 Web Database,[2] and that 80% of electric vehicle charging activity occurs at home based on a study of electric vehicle use prepared by an industry expert in 2018.[3] Each residential EV charging unit is conservatively assumed to be in operation for 10 years.

Using this California Air Resources Board-derived methodology, the following assumptions and resulting calculated inputs were used to derive the emissions reductions estimates:

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[1] 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.

[2] California Air Resources Board, EMFAC2017 Web Database, *available at:* https://www.arb.ca.gov/emfac/2017/; *EMFAC 2017 Vol. III Technical Documentation* (July 2018), *available at*: https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-iii-technical-documentation.pdf.

[3] Electric Power Research Institute, *Electric Vehicle Driving, Charging, and Load Shape Analysis Report* (July 2018), *available at*: https://www.epri.com/#/pages/product/3002013754/?lang=en-US.

Parameter *(italicized values were calculated based on parameters listed above them)*	**Assumption**
Years of emissions reductions included (assumed operating life of home EV charger)	10
Annual Gasoline-Fueled Vehicle VMT Reduction (Light-Duty Autos, South Coast Air Basin)	13,611 [a]
Portion of EV Charging Activity at Home (per vehicle)	80% [b]
Calculated Annual Gasoline-Fueled Vehicle VMT Reduction per EV charging unit	*10,889*
Fuel Economy of an EV (kWh/mile)	0.25 [c]
Fuel Economy of an EV (MWh/mile)	0.00025
Calculated MWh used per EV charging unit per year	*2.72*

[a] California Air Resources Board, EMFAC2017 Web Database; *EMFAC 2017 Vol. III Technical Documentation.*

[b] Electric Power Research Institute, *Electric Vehicle Driving, Charging, and Load Shape Analysis Report.*

[c] California Air Resources Board, *Electric Vehicle (EV) Charging Infrastructure: Multifamily Building Standards, Appendix H: Greenhouse Gas Reduction Estimate,* Table H1.

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

(A) The average annual vehicle miles traveled per light duty auto vehicle in the South Coast Air Basin was calculated using information from EMFAC 2017.[4]

(B) The estimated EV miles traveled per residential EV charging unit were calculated by multiplying the average annual vehicle miles traveled per vehicle by the percentage of home charging (80%) determined by an industry expert study.[5]

(C) Avoided fossil-fueled vehicle emissions per EV charging unit were calculated by multiplying the estimated EV miles per residential EV charging unit by annual emission factors derived from EMFAC 2017.

(D) Indirect emissions associated with the use of residential EV charging units were calculated by multiplying the calculated MWh used per EV charging unit by annual estimated Southern California Edison emission factors.

(E) Net emissions reductions per residential EV charging unit were calculated by subtracting the EV charging unit use indirect emissions (D) from the avoided emissions produced by fossil-fueled vehicle miles traveled (C).

The tables below provide the gasoline vehicle emissions factors, home EV charging unit emissions factors, and annual reductions per residential EV charging unit used to calculate the total reductions per residential EV charging unit over the assumed 10-year operating period.

[4] California Air Resources Board, EMFAC2017 Web Database, *available at:* https://www.arb.ca.gov/emfac/2017/.

[5] Electric Power Research Institute, *Electric Vehicle Driving, Charging, and Load Shape Analysis Report* (July 2018), *available at*: https://www.epri.com/#/pages/product/3002013754/?lang=en-US.

Annual Average Vehicle Miles Traveled	
Light-Duty Autos (LDA) in the South Coast Air Basin *(italicized values were calculated based on parameters listed above them)*	
Average daily LDA VMT, South Coast Air Basin	246,181,276
Vehicle Population	6,276,234
Calculated Average Daily VMT per LDA	*39.22*
LDA Days of Operation per Year	347
Calculated Annual VMT per LDA	*13,611*
Notes: Average daily LDA VMT. vehicle population, and days of operation per year derived from EMFAC 2017 and EMFAC 2017 Vol. III Technical Documentation.	

Gasoline Vehicle GHG Emissions Factors				
Year	***CO_2* (grams/mile)**	***CH_4* (grams/mile)**	***N_2O* (grams/mile)**	**MT CO_2e / mile**
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
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
Notes: Emission factors derived from EMFAC 2017 (LDA vehicle class, 30 mph, RUNEX emissions factors, South Coast Air Basin, Aggregate)				

Residential EV Charging Unit GHG Emissions Factors Emissions per MWh	
Year	**$MTCO_2e$ / MWh**
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
2031	0.193684
2032	0.179849
2033	0.166015
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 CO2e per MWh; future year GHG intensities were interpolated assuming a linear trajectory toward 100 percent clean electricity by 2045.	

Net GHG Emissions Reductions per Residential EV Charging Unit							
Year	Fossil Fuel Vehicle Annual VMT displaced by EV VMT per Unit	Avoided Fossil Fuel Vehicle Emissions ($MT\ CO_2e$)	Indirect Emissions from EV Charging ($MT\ CO_2e$)	Net Emissions Reductions from 2021 Installations ($MT\ CO_2e$)	Net Emissions Reductions from 2022 Installations ($MT\ CO_2e$)	Net Emissions Reductions from 2023 Installations ($MT\ CO_2e$)	Net Emissions Reductions from 2024 Installations ($MT\ CO_2e$)
2021	10,889	2.958267	0.660306	2.297962	-	-	-
2022	10,889	2.879770	0.649635	2.230134	2.230134	-	-
2023	10,889	2.800597	0.638337	2.162260	2.162260	2.162260	-
2024	10,889	2.721629	0.627667	2.093962	2.093962	2.093962	2.093962
2025	10,889	2.641966	0.616997	2.024969	2.024969	2.024969	2.024969
2026	10,889	2.571186	0.606954	1.964232	1.964232	1.964232	1.964232
2027	10,889	2.508168	0.596284	1.911885	1.911885	1.911885	1.911885
2028	10,889	2.452275	0.585613	1.866662	1.866662	1.866662	1.866662
2029	10,889	2.402544	0.575571	1.826973	1.826973	1.826973	1.826973
2030	10,889	2.358442	0.564900	1.793542	1.793542	1.793542	1.793542
2031	10,889	2.319824	0.527240	-	1.792583	1.792583	1.792583
2032	10,889	2.285534	0.489580	-	2.230134	1.795954	1.795954
2033	10,889	2.255543	0.451920	-	-	-	1.803623
TOTAL				20.173	19.667	19.233	18.874

Total Net GHG Emissions Reductions			
Year of Installation	Reductions per EV Charging Unit ($MT CO_2e$)	Number of EV Charging Units	Total Net Reductions ($MT CO_2e$)
2021	20.173	250	5,043
2022	19.667	250	4,917
2023	19.233	250	4,808
2024	18.874	250	4,719
TOTAL		**1,000**	**19,487**