

# MEMORANDUM

To: Nathan Keith  
Senior Vice President, Real Estate  
Tejon Ranch Company

From: Eric C. Lu  
Regional Director, Southwest  
Ramboll Americas Engineering Solutions

Subject: **LOS ANGELES COUNTY CLIMATE ACTION PLAN  
APPLICATION FOR TEJON RANCH CENTENNIAL  
(A NET-ZERO PROJECT)**

March 10, 2025

## INTRODUCTION

Adopted on June 25, 2024, by the Los Angeles County Board of Supervisors, the Los Angeles County 2045 Climate Action Plan (CAP) is an aspirational vision to help prioritize, fund, and create a policy framework for future ordinances, plans, and policies.<sup>1</sup> The 2045 CAP is not a regulatory document but rather a plan-level framework for the County to implement, and instead sets strategies, goals, and actions to reach emissions reductions targets.

Concurrent with its adoption of its CAP, the County also updated the Air Quality (AQ) element of its General Plan. This update included AQ Policy 3.1, which states as follows:

*Facilitate the implementation and maintenance of the Climate Action Plan through future County programs to ensure the County reaches its climate action and greenhouse gas emission reduction goals, and consider projects with an enforceable legal obligation to achieve "net zero" greenhouse gas emissions, including by voluntary agreement to resolve litigation or with a government agency, to help the County achieve the long-term goals of the Climate Action Plan.<sup>2</sup>*

Moreover, Appendix F of the CAP outlines how the California Environmental Quality Act (CEQA) analysis of greenhouse gas (GHG) impacts for "net-zero" projects can be streamlined, as follows:

<sup>1</sup> County of Los Angeles. 2024. "2045 Climate Action Plan." June 25. Source: [https://planning.lacounty.gov/wp-content/uploads/2024/07/gp\\_2045\\_Climate\\_Action\\_Plan\\_June-2024.pdf](https://planning.lacounty.gov/wp-content/uploads/2024/07/gp_2045_Climate_Action_Plan_June-2024.pdf). Accessed date: November 2024.

<sup>2</sup> The Honorable Board of Supervisors, County of Los Angeles. 2024. "RE: 2045 Climate Action Plan (04/16/24 Boards Agenda; Item No. 5)". June 25. Source: <https://file.lacounty.gov/SDSInter/bos/supdocs/192494.PDF>. Accessed date: November 2024.

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*If the project would achieve net-zero GHG emissions, the project is considered to comply with the 2045 CAP and the analysis is complete.<sup>3</sup>*

To qualify for Appendix F streamlining, a project must provide an application to the County to demonstrate that the project is net-zero.

*To demonstrate that the project achieves net-zero GHG emissions, the applicant must submit a comprehensive quantitative project-specific analysis of all GHG emissions, sinks, and removals from construction and full buildout operations, consistent with CEQA guidelines and standard practice for modeling GHG emissions for projects.<sup>4</sup>*

On November 30, 2021, Tejon Ranchcorp (Tejon Ranch) entered into an enforceable legal agreement, along with Centennial Founders LLC (Centennial), to resolve litigation with Climate Resolve (Climate Resolve Agreement). Per the Climate Resolve Agreement, Tejon Ranch is legally obligated to comply with the agreement and make the Centennial Specific Plan project (Project) a net-zero GHG project.<sup>5</sup> Indeed, the Climate Resolve Agreement requires the Project to reduce 500,000 metric tons of GHG emissions a year, an amount more than three times the Project's annual GHG emission inventory, as established by the County's approved Final Environmental Impact Report for the Project. The GHG reductions required by the Climate Resolve Agreement are accomplished through a combination of itemized and non-itemized GHG mitigation measures.

As part of the vetting process of data calculated to achieve net-zero during the preparation of the Climate Resolve Agreement, Climate Resolve hired a technical expert to peer review itemized GHG reduction measures that Centennial could commit to and help reach the settlement obligations. Through these itemized mitigation measures, Centennial is legally obligated to reduce 267,863 metric tons of the Project's GHG emissions per year through a combination of commitments including:

1. Using 100% renewable CCA option in Los Angeles County for construction activity,
2. Restricting natural gas usage throughout the community,
3. Installing electric vehicle (EV) chargers,
4. Providing financial incentives to purchase EV's to future home buyers, and
5. Installing EV chargers and (6) Offering financial incentives for medium and heavy-duty vehicles.

The remaining 232,137 metric tons of GHG per year will be mitigated through non-itemized mitigation measures.

<sup>3</sup> County of Los Angeles. 2024. "Appendix F: 2045 Climate Action Plan CEQA Streamlining Checklist". June 25. Source: [https://planning.lacounty.gov/wp-content/uploads/2024/07/gp\\_2045\\_Climate\\_Action\\_Plan\\_Appendices\\_June-2024.pdf](https://planning.lacounty.gov/wp-content/uploads/2024/07/gp_2045_Climate_Action_Plan_Appendices_June-2024.pdf). Accessed date: November 2024.

<sup>4</sup> County of Los Angeles. 2024. "Appendix F: 2045 Climate Action Plan CEQA Streamlining Checklist". June 25. Source: [https://planning.lacounty.gov/wp-content/uploads/2024/07/gp\\_2045\\_Climate\\_Action\\_Plan\\_Appendices\\_June-2024.pdf](https://planning.lacounty.gov/wp-content/uploads/2024/07/gp_2045_Climate_Action_Plan_Appendices_June-2024.pdf). Accessed date: November 2024.

<sup>5</sup> 2021. Climate Resolve, Centennial Founders LLC, and Tejon Ranchcorp Settlement Agreement. November 30.

## THE PROJECT

The Project Final Environmental Impact Report (FEIR) and Specific Plan were approved by the Los Angeles County Board of Supervisors in April of 2019.<sup>6,7</sup> Within the FEIR, there were numerous mitigation measures that were approved and that provide project obligations to reduce the Project's GHG emissions, including those listed below.

- Electric Landscape Equipment (**MM 21-3**)
- High-Efficiency Lighting (**MM 13-2, 13-6**)
- On-Site Renewable Energy (**MM 21-1**)
- On-Site Biogas, Residential Water Budget (**MM 18-1, 18-2, 19-1 through 19-5, 21-9 through 21-13**)
- Single Occupancy Vehicle Use Requirements (**MM 10-25**)
- Affordable Housing (**MM 21-14**)
- Pedestrian/Bicycle Facilities (**MM 21-22, 14-1, 10-26**)
- Telecommuting (**MM 10-1**)
- EV Chargers (**MM 11-4, 11-6, 21-15, 21-16, 21-19**)

This emissions inventory assumes project compliance with 2019 Title 24 efficiency standards.

With these mitigation measures imposed by the FEIR incorporated, the remaining annual Project GHG emissions are 157,642, as noted in the FEIR.<sup>6</sup> These are further broken down by source group (**Table 1**).<sup>8</sup> The total remaining 157,642 metric tons (MT) of GHG emissions per year were disclosed in the FEIR and acknowledged by the trial court as accurately accounting for all the Project's unmitigated GHG obligations.<sup>9</sup> Thus, to achieve "net-zero" status, the Project must reduce an additional 157,642 metric tons of GHG on a yearly basis.

## CONSISTENCY WITH GENERAL PLAN GROWTH PROJECTIONS

The Centennial project is consistent with the County's General Plan growth projections. The Centennial project proposes 19,333 dwelling units. This number of dwelling units is the maximum allowed by the Centennial Specific Plan, a component of the General Plan. The parts of the Centennial project proposed for residential development are designated RL2 – Rural Land 2 (1 dwelling unit per 2 gross acres), RL1 – Rural Land 1 (1 dwelling unit per 1 gross acre), and H5 – Residential 5 (0-5 dwelling units per net acre) in the Land Use Policy Map (Map 2.1) of the Antelope Valley Area Plan, a component of the General Plan. The proposed 19,333 dwelling units are consistent with the RL2, RL1, and H5 land use designations and are therefore consistent with the residential growth projections of the General Plan.

The Centennial Specific Plan also authorizes the development of 8.4 million square feet of commercial and business park uses. The parts of the Centennial project proposed for commercial and business park uses are designated CR – Rural Commercial (0-5 dwelling units per net acre; non-residential maximum

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<sup>6</sup> Tejon Ranch Centennial FEIR.

<sup>7</sup> Business Wire. 2019. " Los Angeles County Board of Supervisors Finalizes Approval of Centennial at Tejon Ranch". April 30. Source: <https://www.businesswire.com/news/home/20190430006136/en/>. Accessed date: November 2024.

<sup>8</sup> Tejon Ranch Centennial Final EIR.

<sup>9</sup> Order Denying Petition for Writ of Mandate, *Center for Biological Diversity, et al. v. County of Los Angeles, et al.*, Los Angeles County Superior Court Case No. 19STCP021000 (April 5, 2021) at 39-40, 52.

floor area ratio of 0.5) and IL – Light Industrial (non-residential maximum floor area ratio of 1.0). the proposed 8.4 million square feet of commercial and business park uses is consistent with the CR and IL land use designations and is therefore consistent with the growth projections of the General Plan.

## **CLIMATE RESOLVE AGREEMENT**

### **Overview**

Climate Resolve challenged the Project EIR's GHG and wildfire analysis in a lawsuit filed in May 2019. Following extensive negotiations, Climate Resolve and Tejon Ranch were able to reach settlement on November 30, 2021 with execution of the Climate Resolve Agreement. At Climate Resolve's request, the Trial Court dismissed the pending litigation with prejudice, thereby resolving the case. Centennial is required to satisfy its obligations in the Climate Resolve Agreement, which are binding and enforceable, as provided in the Climate Resolve Agreement itself. Centennial and Climate Resolve must now work together to implement the Climate Resolve Agreement and ensure that the details and calculations that are detailed will be met.

### **Monitoring**

As required by the Climate Resolve Agreement, a monitoring group, known as the Centennial Monitoring Group (CMG), must be established and funded by Centennial. The Climate Resolve Agreement vests the CMG with the duty and authority to monitor and enforce Centennial's compliance with its obligations under the Agreement, including without limitation, Centennial's GHG reduction obligations.

The Climate Resolve Agreement requires that, six months prior to Centennial's submittal of an application to the County for its first Vesting Tentative Tract Maps (VTTM) – that is before any construction commences, Centennial must provide written notice to the CMG of its intended VTTM application submittal. Within thirty days following such notice, Centennial must tender to Climate Resolve the sum of \$300,000 to be used exclusively to pay for the costs of forming and initiating operations of the CMG. To ensure that CMG can function moving forward, within ninety days after the date on which the County approves the first VTTM, Centennial must provide annual CMG funding in accordance with the terms of the Climate Resolve Agreement.

The Climate Resolve Agreement requires Centennial to deliver to the CMG an annual report for the period covering the prior calendar year (Annual Report) documenting Centennial's obligations. Centennial is required to publish the Annual Report and make it publicly available within one month after submittal to CMG. The Annual Report will be submitted to the County annually when it is published until full buildout is achieved.

Additionally, concurrent with the submittal of each tentative subdivision map that authorizes development, the Project Applicant/Developer shall submit to the County a signed letter certifying compliance with all "net zero" greenhouse gas reduction obligations arising under Section 1 of the Settlement Agreement between Centennial Founders LLC, Tejon Ranchcorp, and Climate Resolve, dated November 30, 2021. Such submittal shall include a hard copy of, and website link that can publicly access, the most recent annual report required pursuant to Settlement Agreement Section 1.f.a, which report shall document all Centennial Founder LLC actions implemented in the previous calendar year to comply with its "net zero" greenhouse gas reduction obligations and requirements under the Settlement Agreement. Such submittal shall also copy Climate Resolve.

## Reporting Emission Reductions

The Climate Resolve Agreement further obligates Tejon Ranch to annually report to the CMG and public the GHG emission reductions that the Project has then achieved for the period covering the prior calendar year, including, without limitation, information regarding GHG achieved through itemized and non-itemized GHG reduction measures (Annual Report). Each Annual Report will be published and will be made publicly available for download from Centennial's web site free of charge. Concurrently with the annual publication of the Annual Report, Centennial will issue a press release announcing the Annual Report.

## Reduction Obligations to Achieve Net-Zero GHG

To fulfill the Climate Resolve Agreement obligations, the Project and Tejon Ranch have a contractual obligation to reduce GHG emissions by 500,000 metric tons per year, far exceeding what would be necessary to achieve "net-zero" based on the annual reduction of 157,642 MT per year of GHG emissions that were identified in the FEIR. The Climate Resolve Agreement mandates the Project to participate in or fund several GHG reduction activities that would mitigate the FEIR approved inventory to zero, demonstrating the Project's status as a net-zero Project, consistent with Appendix F of the CAP.

## Achieving Net-Zero Emissions

In order to conservatively calculate the amount of reductions required to classify this project as net-zero as defined in the CAP, Centennial is proposing to evaluate the reductions achieved via the Climate Resolve Agreement against a larger emissions inventory than what was reported in the FEIR. The FEIR assumed an EV adoption rate of 50% by Project buildout. This value was an increased projection from expected model default of 4% EV adoption at the time of FEIR publication, aligned with California's goals of mobile source decarbonization and regulatory action to support vehicle electrification. Per the FEIR, this assumption accounted for a reduction of 65,859 metric tons of CO<sub>2</sub>e per year.<sup>10</sup>

If the FEIR had not assumed this 50% EV utilization rate in its inventory and instead relied on model defaults, the GHG inventory that would need to be reduced in order to meet net-zero requirements would equate to 223,501 MT of GHG per year (**Table 1**). The following analysis and appended Tables demonstrate that the Climate Resolve Agreement's obligations require the reduction of GHG emissions well below this conservative threshold of 223,501 MT per year of GHG necessary to be deemed net-zero for purpose of consistency with Appendix F of the CAP.<sup>11</sup>

The Climate Resolve Agreement includes several itemized measures intended to reduce the GHG emissions inventory of the Project. Notably, it requires the Project to make broad strides to decarbonize the mobile sources by providing subsidies for electric vehicle procurement and installing chargers. These measures will encourage use of electric vehicles within the Project site and beyond. The agreement requires provision of subsidies for 100 community vehicles, 300 public service vehicles, and 50 transit buses. These subsidies would reduce GHGs by replacing combustion vehicles with electric vehicles (**Table 2, Table 3, and Table 4**, respectively). As required by the Climate Resolve Agreement, Centennial must install 100 chargers for medium- and heavy-duty vehicles. This installation will allow larger vehicles to charge at the Project site and facilitate the State's goals to electrify the heavy-duty

<sup>10</sup> Per the Updated Greenhouse Gas Calculations for the Centennial Project Final Environmental Impact Report as prepared by Psomas on August 13, 2018, *"The inclusion of a 50 percent EV utilization rate accounts for approximately 78.5 percent of the Project's total -83,897 MT CO<sub>2</sub>e/year reductions for mobile emissions."*

<sup>11</sup> Centennial maintains that the GHG inventory of 157,642 MT per year of GHG as stated in the FEIR is accurate. This value has already been approved by the County, is supported by substantial evidence, as documented in the FEIR, and was upheld by the Superior Court in the Climate Resolve litigation, which holding was not appealed. Centennial is comparing their expected GHG reductions against this increased threshold of 223,501 MT per year of GHG, rather than 157,642 MT per year of GHG reported in the FEIR, in order to conservatively quantify all reductions based on obligations related to EV charger installation and subsidies in the Climate Resolve Agreement.

truck fleet, which will reduce emissions from mobile sources (**Table 5**). The Climate Resolve Agreement requires that Centennial install 3,500 electric vehicle chargers in commercial areas on-site, and an additional 19,333 chargers near residences to ensure that there is one charging station for each planned single family or multifamily dwelling unit. These charging stations will reduce emissions by encouraging electric vehicle operation, and will also be fueled with clean electricity due to Centennial's commitments to source clean energy (**Table 6** and **Table 7**). Centennial must also install 5,000 chargers within local disadvantaged communities. While Centennial's energy commitments will not affect these off-site chargers, their use will still serve to reduce mobile emissions by further encouraging use of electric vehicles throughout the region (**Table 8**). The EV charger utilization assumptions used in order to calculate the total reductions in **Tables 5 through 8** are an estimate to reflect the increase in EV penetration consistent with California's mobile source decarbonization goals.

The 2024 Electric Vehicle Outlook published by Bloomberg New Energy Finance (BNEF) projects that by 2040, it is expected that 73 percent of global passenger vehicle sales will be electric.<sup>12</sup> Similarly, the International Energy Agency (IEA) anticipates that by 2035, global sales of light-duty vehicles will represent nearly 55% of the market share.<sup>13</sup> A report published by PWC estimates that by 2040, there could be 20 times more electric vehicles on the road in the US than there were in 2023.<sup>14</sup> While the projections from each report vary, they all point toward high levels of EV sales and adoption in the near future. Additionally, these reports are focused on EV sales nationwide and globally, and are assumed to be a conservative estimate for California's electric car sales.

California Executive Order (EO) N-79-20 set ambitious goals to push the California Air Resources Board (CARB) and California consumers towards a zero-emission vehicle future.<sup>15</sup> EO N-79-20 targets 100% of in-state sales of passenger vehicles and trucks of zero-emission vehicles by 2035, 100% of the medium- and heavy-duty vehicles sold and operated in the state to be zero-emission vehicles by 2045, and all drayage trucks to be zero-emission by 2035. In 2024, zero emission vehicles already represented over 25% of new car sales in California, and this share is expected to increase significantly my Project buildout to meet regulatory standards.<sup>16</sup>

CARB has since passed a suite of regulations that align with the goals of EO N-79-20. The Advanced Clean Cars II regulation requires all new passenger cars, trucks, and SUVs sold in California to be zero-emission vehicles by 2035.<sup>17</sup> Advanced Clean Trucks intends to accelerate the transition of medium- and heavy-duty vehicles by requiring increased percentages of zero-emission truck sales and mandating reporting for companies and fleets.<sup>18</sup> Advanced Clean Fleets requires drayage trucks, government fleets,

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<sup>12</sup> Bloomberg NEF. Electric Vehicle Outlook 2024. Available at: [https://assets.bbhub.io/professional/sites/24/847354\\_BNEF\\_EVO2024\\_ExecutiveSummary.pdf](https://assets.bbhub.io/professional/sites/24/847354_BNEF_EVO2024_ExecutiveSummary.pdf). Accessed: January 2025.

<sup>13</sup> IEA. Outlook for Electric Mobility. Available at: <https://www.iea.org/reports/global-ev-outlook-2024/outlook-for-electric-mobility>. Accessed: January 2025.

<sup>14</sup> PWC. EV Charging Growth: How Can Power and Utilities Prepare? Available at: <https://www.pwc.com/us/en/industries/energy-utilities-resources/library/ev-charging-power-and-utilities.html>. Accessed: January 2025.

<sup>15</sup> State of California. Executive Order N-79-20. Available at: <https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf>. Accessed: January 2025.

<sup>16</sup> California Energy Commission. New ZEV Sales in California. Available at: <https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/new-zev>. Accessed: January 2025.

<sup>17</sup> CARB. Advanced Clean Cars Program. Available at: <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program>. Accessed: January 2025.

<sup>18</sup> CARB. Advanced Clean Trucks Regulation. Available at: <https://ww2.arb.ca.gov/sites/default/files/2023-06/ACT-1963.pdf>. Accessed: January 2025.

and high-priority fleets to purchase to zero-emission vehicles.<sup>19</sup> These regulations are intended to decarbonize the mobile sector and will aid in the transition towards electric vehicles expected at Project buildout.

The EIR assumed that the EV population would increase by 1,150%, from 4% as assumed in model defaults at time of publication, to an anticipated 50% market share by Project buildout. Current data from Electrify America's most recent report to CARB evaluates the usage rates of public chargers in California as well as those that are available at workplaces or multi-unit dwelling charging stations.<sup>20</sup> Per this report, public chargers are used 7 hours per day, and chargers at workplaces or multi-unit dwellings are used 2.8 hours per day throughout the state. On average these chargers are used for over 3.9 hours per day. Thus, the current assumption of 10 hours per day of public EV charger utilization is conservative given the anticipated increase in EVs. This usage rate represents an increase of 155% from current usage, which is significantly lower than the EV growth expected within California during that same timeframe. Additionally, the Climate Resolve Agreement reduces GHGs by prohibiting the use of fossil fuel fireplaces at the Project.

Centennial must also implement various measures to reduce their GHG emissions related to energy. The Climate Resolve Agreement prohibits the use of residential and non-essential non-residential natural gas. These commitments decrease the Project's GHG emissions inventory by requiring use of electricity instead of natural gas on-site. Since Centennial has committed to participate in Southern California Edison's Clean Power Plan, there are no additional GHG emissions expected with this on-site electricity use (**Table 9** and **Table 10**). Through these aggressive energy commitments that align with State policy goals and initiatives, the Project will not have any annual GHG emissions due to energy procurement and use at full buildout and throughout its operation (**Table 11**).

Furthermore, to offset Project emissions, the Climate Resolve Agreement requires that another Tejon Ranch project, Grapevine project located in Kern County, prohibit all residential natural gas usage. This will reduce the Project's net GHG emissions inventory by requiring electric appliances in place of conventional natural gas units in residential units (**Table 12**).

Finally, the Climate Resolve Agreement requires Centennial to provide 500 additional subsidies to replace light-heavy and medium-heavy duty trucks with electric equivalents. These subsidies will directly decrease GHG emissions by replacing conventional vehicles, typically powered with diesel or gasoline, with zero emission alternatives (**Table 13**). It has been conservatively assumed that all of these truck subsidies will go towards replacing light-heavy duty trucks as they are lighter and generate fewer GHG emissions.

### **The Climate Resolve Agreement Satisfies the Requirements of AQ Policy 3.1 and CAP Appendix F**

Overall, the Climate Resolve Agreement's robust measures, including the itemized GHG reduction measures, Centennial's energy commitments, the Grapevine residential natural gas restriction, and truck incentives will reduce up to 295,078 MT of GHG emissions annually (**Table 14**). This value also accounts for the prohibition of fossil fuel fireplaces. **Table 14** illustrates how Centennial can achieve net-zero GHG emissions. The GHG reductions shown are as calculated in **Table 2** through **Table 13** and represents a reasonable achievement of GHG reductions based on the commitments from the FEIR and Climate Resolve Agreement.

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<sup>19</sup> CARB. Advanced Clean Fleets. Available at: <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets>. Accessed: January 2025.

<sup>20</sup> CARB. Quarterly Electrify America Reports to CARB. Available at: <https://ww2.arb.ca.gov/resources/documents/electrify-america-reports>. Accessed: January 2025.

The GHG emission reduction required by the Climate Resolve Agreement (as evidenced in the attached tables) far exceeds the verified GHG emission inventory identified in the FEIR, which was calculated at 157,642 MT CO<sub>2</sub>e per year and the adjusted value of 223,501 MT CO<sub>2</sub>e per year. As a result, Centennial, by entering the binding commitments of the Climate Resolve Agreement, achieves a reduction of GHG emissions in excess of the GHG emissions it creates, resulting in a net-zero project as outlined in the Los Angeles County Climate Action Plan Appendix F. Note also that the Climate Resolve Agreement includes an additional “non-itemized GHG reduction” of 232,137.04 MT/Year beyond that summarized above. That requirement alone also would achieve the net-zero project criteria.<sup>21</sup>

Appendix F of the CAP states that all reductions must be “real, permanent, quantifiable, verifiable, enforceable, and additional.” In the CAP, “additional” is defined as meaning that the reductions:

*“[are] not otherwise required by law, regulation, or legally binding mandate, and none of the offsite project’s GHG emissions reductions would otherwise occur.”<sup>22</sup>*

Further, the Climate Resolve Agreement specifies that all reductions shall be additional:

*“Based on standard GHG accounting principles of both additionality and double-counting, no GHG mitigation used for the Project may be used for any other project.”<sup>23</sup>*

All of the reductions as calculated in the attached tables are additional in accordance with this definition. These reductions are only occurring as a result of the Climate Resolve Agreement. Neither the Centennial Project nor any locations where off-site reductions are expected to occur, including the Grapevine and Tejon Ranch Commerce Center, had any prior commitments to reduce their GHG emissions as required via this Climate Resolve Agreement, as confirmed by the enclosed affidavit and letter from Climate Resolve.

While the information presented above reasonably calculates the GHG reductions associated with the Climate Resolve Agreement, **Table 15** illustrates a more conservative representation of the potential GHG reductions relative to the FEIR in the event that onsite GHG reductions do not achieve additional reductions from EV usage as was assumed in the FEIR. In **Table 15**, the GHG reductions associated with onsite mobile source reduction measures is assumed to achieve a lower amount of GHG reductions equivalent to the GHG reductions that were originally assumed in the FEIR. As detailed in **Table 1**, the FEIR mobile emissions inventory change related to the EV assumptions is 65,859 MT CO<sub>2</sub>e per year. The GHG reductions associated with on-site mobile commitments calculated in **Table 4**, **Table 6**, and **Table 7** were scaled to only achieve the equivalent GHG reduction (i.e., 65,859 MT CO<sub>2</sub>e per year). This calculation demonstrates that even if the Climate Resolve Agreement did not provide any further reductions related to EV usage for the onsite mobile sources, that the project would still result in a net-zero project as outlined in the Los Angeles County Climate Action Plan Appendix F.

**Table 16** lists the measures from the Climate Resolve Agreement and from the FEIR to illustrate locationally where GHG reductions are expected to occur.

<sup>21</sup> As recognized by the California Air Resources Board, “Tejon Ranch Company, the developer for the Centennial Specific Plan located in northern Los Angeles County, also committed its development to result in no net increase of GHG emissions.” CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, Appendix D, at 25-26.

<sup>22</sup> County of Los Angeles. 2024. “2045 Climate Action Plan Appendices”. June. Source: [gp\\_2045\\_Climate\\_Action\\_Plan\\_Appendices\\_June-2024.pdf](https://www.co.la.ca.us/2045-Climate-Action-Plan-Appendices-June-2024.pdf). Accessed date: January 2025.

<sup>23</sup> 2021. Climate Resolve, Centennial Founders LLC, and Tejon Ranchcorp Settlement Agreement. November 30.



## Evolving Technology and True-Up to Ensure Legal Obligations

Since the executed date of the Climate Resolve Agreement, November 30, 2021, advancing technology, new state codes and newer data sources to research from, continue to change GHG emission offset estimations. This was anticipated during the Climate Resolve Settlement negotiations, and several safety mechanisms were placed within the Settlement. Each submitted Tract Map will need to demonstrate the GHG emission reductions associated with the units included in that map. This will be reviewed by the CMG and confirm that as Centennial builds out, the emission reductions align with the Climate Resolve Settlement. Furthermore, the agreement allows for a True-Up process at 15 years to ensure that all obligations are being met. A qualified GHG consultant will be hired and will present to both parties their findings through their review process. Specifically, the expert will be hired in order to conduct the following checks as described in the Climate Resolve Settlement:

*"For assessing the extent to which Centennial has progressed towards becoming a Net Zero GHG Project to revisit the calculations and technology assumptions used by the Parties in this Agreement in 2021 to calculate BAU emissions, and to calculate GHG reductions from Itemized and Non-Itemized GHG Mitigations."*

As already demonstrated in the appended table set, some of the estimated reductions have gone up and some have gone down from the Settlement negotiations. It is anticipated that this will continue throughout the life of the project and while some adjustments will need to be made, the Centennial project is still legally obligated to be a net-zero community and must demonstrate that it offsets 500,000 MT of GHG emissions per year.

## LA COUNTY GHG NET-ZERO REDUCTION RECOGNITION

In November of 2016, FivePoint announced that their project in Newhall was going net-zero with similar commitments that the Project is now committed to. Newhall's net-zero GHG program was analyzed in the Final Additional Environmental Analysis, published in 2017, which supplemented the approved Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan (RMDP/SCP) (SCH No. 2000011025).<sup>24</sup> On July 17, 2018, Department of Regional Planning presented the Newhall project to the LA County Board of Supervisors and gave a project overview.

*"Regional planning released the draft, recirculated analysis, including technical reports and analysis that reevaluates the GHG. emissions section of the final EIR, including 13 new mitigation measures to reduce, mitigate and offset 100 percent of the project's GHG emissions, allowing the project to achieve net-zero GHG emissions and result in a less than significant impact on global climate change"<sup>25</sup>*

When comparing the Newhall project that was approved in 2017 to the legally enforceable Climate Resolve Agreement that Tejon Ranch entered into in November 2021, the commitments to GHG reduction measures are very similar and will help each project reach the commitment of net-zero.

## CONCLUSION

Appendix F of the 2024 Climate Action Plan provides a streamlined option for demonstrating compliance with its GHG reduction goals.<sup>26</sup> Through this process, an applicant must submit a comprehensive

<sup>24</sup> State-certified EIR, Final Additional Environmental Analysis, Appendix 1; Final Actions and Supplemental Findings of the California Department of Fish and Wildlife for the Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan, June 14, 2017, Section II.

<sup>25</sup> Los Angeles County Board of Supervisors Regular Meeting. July 18, 2017, 2:31:23. [https://lacounty.granicus.com/player/clip/4197?view\\_id=1&redirect=true](https://lacounty.granicus.com/player/clip/4197?view_id=1&redirect=true). Accessed date: November 2024.

<sup>26</sup> County of Los Angeles. 2024. "2045 Climate Action Plan Appendices". June. Source: [gp\\_2045\\_Climate\\_Action\\_Plan\\_Appendices\\_June-2024.pdf](gp_2045_Climate_Action_Plan_Appendices_June-2024.pdf). Accessed date: November 2024.

quantitative project-specific analysis that they achieve net-zero GHG emissions. Centennial is contractually and legally obligated to achieve net-zero GHG emissions for the Project as provided by the Climate Resolve Agreement, which will result in offsetting 500,000 metric tons of GHG emissions annually. This quantity covers and greatly exceeds the 157,642 metric tons of GHG that the FEIR calculated as being emitted annually by the Project, and even exceeds the 223,501 metric tons of GHG that would have been calculated had the FEIR not assumed a 50% EV utilization rate. Through the checks and balances and quantitative measures the Project must implement, Centennial has demonstrated that the Project is a net-zero community.

**ATTACHMENT A  
SUPPORTING TABLES**

**Table 1. Annual Project GHG Emissions by Source Group**

Tejon Ranch Centennial  
 Los Angeles County, California

<b>GHG Emission Sources</b>	<b>Approved GHG Emissions Inventory from the FEIR<sup>1</sup> (MT CO<sub>2</sub>e/year)</b>	<b>GHG Emissions Inventory with Reduced EV Utilization Assumptions<sup>2</sup> (MT CO<sub>2</sub>e/year)</b>
Mobile	77,007	142,866
Energy	55,047	55,047
Water and Wastewater	4,203	4,203
Solid Waste	5,107	5,107
Area	11,223	11,223
Construction	4,490	4,490
Vegetation	565	565
<b>Total</b>	<b>157,642</b>	<b>223,501</b>

Notes:

<sup>1</sup> Emissions calculated by Psomas using CalEEMod Version 16.3.2 (June 2018).

<sup>2</sup> On page 4 of the Updated Greenhouse Gas Calculations for the Centennial Project Final Environmental Impact Report, it is reported that there are -83,897 MT CO<sub>2</sub>e per year of GHG reductions for the mobile emissions compared to the DEIR. It is also reported that 78.5% of those GHG reductions are due to the increased EV utilization rate, which equates to 65,859 MT CO<sub>2</sub>e per year. For the purposes of Appendix F and to be conservative with emission reductions, this amount is added back into the wholistic number.

Abbreviations:

- CalEEMod - California Emissions Estimator Model
- CO<sub>2</sub>e - carbon dioxide equivalents
- DEIR - Draft Environmental Impact Report
- EV - electric vehicle
- FEIR - Final Environmental Impact Report
- GHG - greenhouse gas emissions
- MT - metric ton

**Table 2. GHG Emission Reductions from EV Subsidies for Community Passenger Vehicle Fleet**

Tejon Ranch Centennial  
Los Angeles County, California

<b>EMFAC2017 Data<sup>1</sup></b>		
Calendar Year	2035	
EMFAC Sub-Area	Los Angeles (SC)	
EMFAC2017 Gasoline/Diesel Passenger Vehicle VMT	222,510,045	miles/day
EMFAC2017 Gasoline/Diesel Passenger Vehicle Population	6,748,590	Passenger Vehicles
EMFAC2017 Gasoline/Diesel Passenger Vehicle Running Exhaust Emissions	CO <sub>2</sub>	50,224 MT/day
	CH <sub>4</sub>	0.278 MT/day
	N <sub>2</sub> O	0.773 MT/day
	CO <sub>2</sub> e	50,461 MT/day
EMFAC2017 Gasoline/Diesel Passenger Vehicle Emission Factor	CO <sub>2</sub> e	227 g/mile
<b>ZE Passenger Car Data</b>		
Number of Vehicles to be Replaced <sup>2</sup>	100	Passenger Vehicles
Average Annual VMT <sup>3</sup>	11,441	miles/vehicle/year
Average Annual GHG Emissions per Truck <sup>4</sup>	3	MT CO <sub>2</sub> e/vehicle/year
<b>Total Annual GHG Emissions Reduced<sup>5</sup></b>	259.5	MT CO <sub>2</sub> e/year

Notes:

<sup>1</sup> The values obtained from EMFAC2017.

<sup>2</sup> The number of passenger vehicles to be replaced value obtained from Climate Resolve Agreement.

<sup>3</sup> The average annual VMT was calculated from dividing the passenger vehicle (LDA, LDT1, LDT2) VMT by the passenger vehicle population and multiplying it by the EMFAC Default operational days per year.

<sup>4</sup> The average annual GHG emissions per vehicle was calculated from multiplying the passenger vehicle emission factor with the average annual VMT.

<sup>5</sup> The total annual GHG emissions reduced is the average annual GHG emissions per truck multiplied by the number of vehicles to be replaced.

Conversion Factors:

0.907185 MT/ton  
347 days/year, EMFAC Default<sup>1</sup>  
1000000 g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Change
CH <sub>4</sub> - methane	LDA - light-duty automobile
CO <sub>2</sub> - carbon dioxide	LDT - light-duty truck
CO <sub>2</sub> e - carbon dioxide equivalents	MT - metric ton
EMFAC - CARB Emissions Factor Model	N <sub>2</sub> O - nitrous oxide
EV - electric vehicle	SC - South Coast
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	

**Table 3. GHG Emission Reductions from EV Subsidies for Public Service Passenger Vehicle Fleet**

Tejon Ranch Centennial  
Los Angeles County, California

<b>EMFAC2017 Data<sup>1</sup></b>		
Calendar Year	2035	
EMFAC Sub-Area	Los Angeles (SC)	
EMFAC2017 Gasoline/Diesel LDA VMT	222,510,045	miles/day
EMFAC2017 Gasoline/Diesel LDA Population	6,748,590	Passenger Vehicles
EMFAC2017 Gasoline/Diesel LDA Running Exhaust Emissions	CO <sub>2</sub>	50,224 MT/day
	CH <sub>4</sub>	0.278 MT/day
	N <sub>2</sub> O	0.773 MT/day
	CO <sub>2</sub> e	50,461 MT/day
EMFAC2017 Gasoline/Diesel LDA Emission Factor	CO <sub>2</sub> e	227 g/mile
<b>ZE Passenger Car Data</b>		
Number of Vehicles to be Replaced <sup>2</sup>	300	Passenger Vehicles
Average Annual VMT <sup>3</sup>	11,441	miles/vehicle/year
Average Annual GHG Emissions per Truck <sup>4</sup>	3	MT CO <sub>2</sub> e/vehicle/year
<b>Total Annual GHG Emissions Reduced<sup>5</sup></b>	<b>778.4</b>	<b>MT CO<sub>2</sub>e/year</b>

Notes:

<sup>1</sup> The values were obtained from EMFAC2017.

<sup>2</sup> The number of passenger vehicles to be replaced value obtained from Climate Resolve Agreement.

<sup>3</sup> The average annual VMT was calculated from dividing the passenger vehicle (LDA, LDT1, LDT2) VMT by the passenger vehicle population and multiplying it by the EMFAC Default operational days per year.

<sup>4</sup> The average annual GHG emissions per vehicle was calculated from multiplying the passenger vehicle emission factor with the average annual VMT.

<sup>5</sup> The total annual GHG emissions reduced is the average annual GHG emissions per vehicle multiplied by the number of trucks to be replaced

Conversion Factors:

0.907185 MT/ton  
347 days/year, EMFAC Default<sup>1</sup>  
1000000 g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Change
CH <sub>4</sub> - methane	LDA - light-duty automobile
CO <sub>2</sub> - carbon dioxide	LDT - light-duty truck
CO <sub>2</sub> e - carbon dioxide equivalents	MT - metric ton
EMFAC - CARB Emissions Factor Model	N <sub>2</sub> O - nitrous oxide
EV - electric vehicle	SC - South Coast
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	

**Table 4. GHG Emission Reductions from EV Subsidies for Transit Buses**

Tejon Ranch Centennial  
Los Angeles County, California

<b>EMFAC2017 Data<sup>1</sup></b>		
Calendar Year	2035	
EMFAC Sub-Area	Los Angeles (SC)	
EMFAC2017 UBUS VMT	508,594	miles/day
EMFAC2017 UBUS Population	4,967	Buses
EMFAC2017 UBUS Running Exhaust Emissions	CO <sub>2</sub>	1,001 MT/day
	CH <sub>4</sub>	2.9874 MT/day
	N <sub>2</sub> O	0.1931 MT/day
	CO <sub>2</sub> e	1,133 MT/day
EMFAC2017 UBUS Emission Factor	CO <sub>2</sub> e	2,228 g/mile
<b>ZE Transit Bus Data</b>		
Number of Buses to be Replaced <sup>2</sup>	50	Buses
Average Annual VMT <sup>3</sup>	33,485	miles/bus/year
Average Annual GHG Emissions per Truck <sup>4</sup>	74.6	MT CO <sub>2</sub> e/bus/year
<b>Total Annual GHG Emissions Reduced<sup>5</sup></b>	<b>3730.0</b>	<b>MT CO<sub>2</sub>e/year</b>

Notes:

<sup>1</sup> The values were obtained from EMFAC2017.

<sup>2</sup> The number of trucks to be replaced value obtained from Climate Resolve Agreement.

<sup>3</sup> The average annual VMT was calculated from dividing the UBUS VMT by the UBUS population and multiplying it by the EMFAC Default operational days per year.

<sup>4</sup> The average annual GHG emissions per bus was calculated from multiplying the UBUS emission factor with the average annual VMT.

<sup>5</sup> The total annual GHG emissions reduced is the average annual GHG emissions per bus multiplied by the number of trucks to be replaced.

Conversion Factors:

0.907185 MT/ton  
327 days/year, EMFAC Default<sup>1</sup>  
1000000 g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Change
CH <sub>4</sub> - methane	MT - metric ton
CO <sub>2</sub> - carbon dioxide	N <sub>2</sub> O - nitrous oxide
CO <sub>2</sub> e - carbon dioxide equivalents	SC - South Coast
EMFAC - CARB Emissions Factor Model	UBUS - urban bus
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	

**Table 5. GHG Emission Reductions from Level 4 Electric Vehicle Chargers at Tejon Ranch Commerce Center**

Tejon Ranch Centennial  
Los Angeles County, California

<b>Estimating Emissions Reduction to Replace Class 4-8 Diesel Trucks with Electric Trucks</b>		
SCE electricity emission factor <sup>1</sup>	0.00	(MT CO <sub>2</sub> e/MWh)
Fuel Efficiency of Class 4-8 Battery Electric Trucks <sup>2</sup>	1.25	(kWh/mile)
GHG emission factors for Class 4-8 Battery Electric Trucks <sup>3</sup>	0	(gms CO <sub>2</sub> e/mile)
GHG emission factors for Diesel Class 4-8 Trucks <sup>4</sup>	1,001	(gms CO <sub>2</sub> e/mile)
GHG Emissions Reduction Rates for replacement of Class 4-8 Diesel Trucks with Battery Electric Trucks <sup>5</sup>	1,001	(gms CO <sub>2</sub> e/mile)
Annual Energy Delivery per Level 4 Charger <sup>6</sup>	165,000	(kWh/charging station/year)
Annual VMT Displacement per Level 4 Charger <sup>7</sup>	131,886	(miles/charging station/year)
GHG Reduction per Level 4 Charger per Year <sup>8</sup>	132	(MT CO <sub>2</sub> e/charging station/year)
Trucks Chargers Installed <sup>9</sup>	100	(charging stations)
<b>Total GHG Reduction from Level 4 Chargers</b>	<b>13,208</b>	<b>(MT CO<sub>2</sub>e/year)</b>

Notes:

<sup>1</sup> CO<sub>2</sub>e intensity factors from electricity are expected to be zero to reflect participation in Southern California Edison's Clean Power Plan.

<sup>2</sup> Fuel efficiency for Class 4-8 battery electric trucks were estimated based on the fuel efficiencies provided in the SCAQMD Draft WAIRE Menu Technical Report (available at: [http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/waire-menu-technical-report\\_draft\\_3-3-20.pdf?sfvrsn=6](http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/waire-menu-technical-report_draft_3-3-20.pdf?sfvrsn=6)) and fleet mix for the South Coast sub-area of Los Angeles County in 2035.

<sup>3</sup> The GHG emissions factors for electric trucks is expected to be zero based on the electricity for the Project being supplied by 100% clean energy.

<sup>4</sup> The emission factors for diesel Class 4-8 trucks are estimated using an EMFAC2017 model run for vehicles operating in the South Coast sub-area of Los Angeles County during 2035.

<sup>5</sup> The GHG emissions reduction rates are calculated as the difference between GHG emission factors of diesel trucks and GHG emission factors of electric trucks.

<sup>6</sup> The annual Energy Delivery for a Level 4 charger is based on the SCAQMD Draft WAIRE Menu Technical Report. This is available at: [http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/waire-menu-technical-report\\_draft\\_3-3-20.pdf?sfvrsn=6](http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/waire-menu-technical-report_draft_3-3-20.pdf?sfvrsn=6).

<sup>7</sup> The annual VMT displacement per Level 4 charger is the ratio of the annual energy delivered per charger and the fuel efficiency of a battery electric truck.

<sup>8</sup> The annual GHG reductions associated with the use of a Level 4 charger are estimated using the annual VMT displacement per charger and the GHG emission reduction from additional battery electric trucks per mile.

<sup>9</sup> The number of truck chargers installed was obtained from the Climate Resolve Agreement.

Abbreviations:

CalEEMod - California Emissions Estimator Model  
 CARB - California Air Resources Board  
 CH<sub>4</sub> - methane  
 CO<sub>2</sub> - carbon dioxide  
 CO<sub>2</sub>e - carbon dioxide equivalents  
 EMFAC - CARB Emissions Factor Model  
 EV - electric vehicle  
 GHG - greenhouse gases  
 gms - grams  
 GWP - Global Warming Potential  
 kWh - kilowatt-hour  
 MT - metric tonnes  
 MWh - megawatt-hour  
 N<sub>2</sub>O - nitrous oxide  
 SCAQMD - South Coast Air Quality Management District  
 SCE - Southern California Edison  
 VMT - vehicle miles traveled

Conversion Factors:

2204.62 lb/MT  
 1.00E-06 MT/gram  
 0.001 MWh to kWh  
 907185 gram/ton  
 453.59 gram/lb

Constants:

365 Days per Year  
 1 GWP for CO<sub>2</sub>  
 25 GWP for CH<sub>4</sub>  
 298 GWP for N<sub>2</sub>O



**Table 6. GHG Emission Reductions from On-Site Electric Vehicle Charging Stations at Commercial Sites**

Tejon Ranch Centennial  
Los Angeles County, California

<b>Estimating GHG Emissions Reduction to Replace Gasoline Vehicles with Electric Vehicles</b>		
Project Electricity Emission Factor <sup>1</sup>	0.00	(MT CO <sub>2</sub> e/MWh)
Electric Vehicle Fuel Economy <sup>2</sup>	0.4	(kWh/mile)
Gasoline/Diesel CO <sub>2</sub> e Emissions while Running <sup>3</sup>	227	(gms/mile)
Annual VMT Reduction per Charging Station <sup>4</sup>	91,250	(miles/charging station/year)
Number of Electric Chargers <sup>5</sup>	3,500	(chargers)
Annual VMT Reduction All Stations <sup>6</sup> (Based on Charge)	319,375,000	(miles/year)
<b>Estimated Benefit from Installing Electric Vehicle Charging Stations in Non-Residential Development Area</b>		
GHG Emissions of Gasoline/Diesel Vehicle	72,428	(MT CO <sub>2</sub> e/year)
GHG Emissions of Electric Vehicle	0	(MT CO <sub>2</sub> e/year)
GHG Emissions Reduction <sup>7</sup>	72,428	(MT CO <sub>2</sub> e/year)
GHG Reduction per Parking Space with Charging per Year	21	(MT CO <sub>2</sub> e/charger/year)
On-Site Non-Residential LDA EV Chargers <sup>8</sup>	3,500	(chargers)
<b>Total GHG Reductions from On-Site Non-Residential LDA EV Chargers<sup>9</sup></b>	<b>72,428</b>	<b>(MT CO<sub>2</sub>e/year)</b>

Notes:

<sup>1</sup> CO<sub>2</sub>e intensity factors from electricity are expected to be zero to reflect participation in Southern California Edison's Clean Power Plan.

<sup>2</sup> Based on the upper end of the range of fuel economies provided by the United States Alternative Fuels Data Center for electric vehicles. This is available at: <https://afdc.energy.gov/fuels/electricity-benefits>.

<sup>3</sup> The emission factor was obtained from EMFAC2017.

<sup>4</sup> The annual VMT reduction is estimated based on an estimate of ten hours of charge time for a Level 2 charging station that charges at a rate of 25 miles of driving range per hour.

<sup>5</sup> The number of charging stations is based on total project commitments for installing chargers on-site at non-residential properties.

<sup>6</sup> The annual VMT reduction from all stations is the annual VMT reduction per charging station multiplied by the number of electric chargers.

<sup>7</sup> The GHG emission reduction is calculated by subtracting the GHG Emission of an electric vehicles from the GHG emissions of a gasoline/diesel vehicle.

<sup>8</sup> This value was obtained from the Climate Resolve Agreement.

<sup>9</sup> The total GHG reductions from on-site non-residential passenger vehicles EV chargers is the number of on-site non-residential passenger vehicles EV chargers multiplied by the GHG reduction per parking space with charging per year.

Abbreviations:

CalEEMod - California Emissions Estimator Model  
 CARB - California Air Resources Board  
 CH<sub>4</sub> - methane  
 CO<sub>2</sub> - carbon dioxide  
 CO<sub>2</sub>e - carbon dioxide equivalents  
 EMFAC - CARB Emissions Factor Model  
 EV - electric vehicle  
 GHG - greenhouse gases  
 gms - grams  
 lb - pound  
 LDA- light duty automobiles  
 kWh - kilowatt-hour  
 N<sub>2</sub>O - nitrous oxide  
 MT - metric tonnes  
 MWh - megawatt-hour  
 SCE - Southern California Edison  
 TDM - Transportation Demand Management  
 VMT - vehicle miles traveled

Conversion Factors:

2204.62 lb/MT  
 1.00E-06 MT/gram  
 0.001 MWh to KWh  
 0.907185 MT/ton  
 347 operation days/yr (based on EMFAC)

IPCC AR4 Global Warming Potentials (GWP):

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

**Table 7. GHG Emission Reductions from On-Site Electric Vehicle Charging Stations at Residential Sites**

Tejon Ranch Centennial  
Los Angeles County, California

<b>Estimating GHG Emissions Reduction to Replace Gasoline Vehicles with Electric Vehicles</b>		
Project Electricity Emission Factor <sup>1</sup>	0.00	(MT CO <sub>2</sub> e/MWh)
Electric Vehicle Fuel Economy <sup>2</sup>	0.4	(kWh/mile)
Gasoline/Diesel CO <sub>2</sub> e Emissions while Running <sup>3</sup>	227	(gms/mile)
Annual VMT Reduction per Charging Station <sup>4</sup>	11,738	(miles/charging station/year)
Number of Electric Chargers <sup>5</sup>	19,333	(chargers)
Annual VMT Reduction All Stations <sup>6</sup> (Based on Charge)	226,922,413	(miles/year)
<b>Estimated Benefit from Installing Electric Vehicle Charging Stations in Residential Development Area</b>		
GHG Emissions of Gasoline/Diesel Vehicle	51,462	(MT CO <sub>2</sub> e/year)
GHG Emissions of Electric Vehicle	0	(MT CO <sub>2</sub> e/year)
GHG Emissions Reduction <sup>7</sup>	51,462	(MT CO <sub>2</sub> e/year)
GHG Reduction per Parking Space with Charging per Year	3	(MT CO <sub>2</sub> e/charger/year)
On-Site Residential LDA EV Chargers <sup>8</sup>	19,333	(chargers)
<b>Total GHG Reductions from On-Site Residential LDA EV Chargers<sup>9</sup></b>	<b>51,462</b>	<b>(MT CO<sub>2</sub>e/year)</b>

Notes:

<sup>1</sup> CO<sub>2</sub>e intensity factors from electricity are expected to be zero to reflect participation in Southern California Edison's Clean Power Plan.

<sup>2</sup> Based on the upper end of the range of fuel economies provided by the United States Alternative Fuels Data Center for electric vehicles. This is available at: <https://afdc.energy.gov/fuels/electricity-benefits>.

<sup>3</sup> The emission factor was obtained from EMFAC2017.

<sup>4</sup> The annual VMT reduction is estimated based on the annual VMT for electric passenger vehicles in EMFAC2017.

<sup>5</sup> The number of charging stations is based on total project commitments for installing chargers on-site for residential properties (one EVSE per dwelling unit).

<sup>6</sup> The annual VMT reduction from all stations is the annual VMT reduction per charging station multiplied by the number of electric chargers.

<sup>7</sup> The GHG emission reduction was calculated by subtracting the GHG Emission of an electric vehicles from the GHG emissions of a gasoline/diesel vehicle.

<sup>8</sup> This value was obtained from the Climate Resolve Agreement.

<sup>9</sup> The total GHG reductions from on-site residential passenger vehicles EV chargers is the number of on-site residential passenger vehicles EV chargers multiplied by the GHG reduction per parking space with charging per year.

Conversion Factors:

2204.62 lb/MT  
1.00E-06 MT/gram  
0.001 MWh to kWh  
0.907185 MT/ton  
347 operation days/yr (based on EMFAC)

IPCC AR4 Global Warming Potentials (GWP):

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

Abbreviations:

CalEEMod - California Emissions Estimator Model	lb - pound
CARB - California Air Resources Board	LDA- light-duty automobiles
CH <sub>4</sub> - methane	kWh - kilowatt-hour
CO <sub>2</sub> - carbon dioxide	MT - metric tonnes
CO <sub>2</sub> e - carbon dioxide equivalents	MWh - megawatt-hour
EMFAC - CARB Emissions Factor Model	N <sub>2</sub> O - nitrous oxide
EV - electric vehicle	SCE - Southern California Edison
EVSE - Electric Vehicle Supply Equipment	TDM - Transportation Demand Management
GHG - greenhouse gases	VMT - vehicle miles traveled
gms - grams	

**Table 8. GHG Emission Reductions from Electric Vehicle Charging Stations at Disadvantaged Communities**

Tejon Ranch Centennial  
Los Angeles County, California

<b>Estimating GHG Emissions Reduction to Replace Gasoline Vehicles with Electric Vehicles</b>		
Project Electricity Emission Factor <sup>1</sup>	0.17	(MT CO <sub>2</sub> e/MWh)
Electric Vehicle Fuel Economy <sup>2</sup>	0.4	(kWh/mile)
Gasoline/Diesel CO <sub>2</sub> e Emissions while Running <sup>3</sup>	227	(gms/mile)
Annual VMT Reduction per Charging Station <sup>4</sup>	91,250	(miles/charging station/year)
Number of Electric Chargers <sup>5</sup>	5,000	(chargers)
Annual VMT Reduction All Stations <sup>6</sup> (Based on Charge)	456,250,000	(miles/year)
<b>Estimated Benefit from Installing Electric Vehicle Charging Stations in DAC</b>		
GHG Emissions of Gasoline/Diesel Vehicle	103,469	(MT CO <sub>2</sub> e/year)
GHG Emissions of Electric Vehicle	30,589	(MT CO <sub>2</sub> e/year)
GHG Emissions Reduction <sup>7</sup>	72,881	(MT CO <sub>2</sub> e/year)
GHG Reduction per Parking Space with Charging per Year	15	(MT CO <sub>2</sub> e/charger/year)
LDA EV Chargers in Disadvantaged Communities <sup>8</sup>	5,000	(chargers)
<b>Total GHG Reductions from LDA EV Chargers in Disadvantaged Communities<sup>9</sup></b>	<b>72,881</b>	<b>(MT CO<sub>2</sub>e/year)</b>

Notes:

- <sup>1</sup> CO<sub>2</sub>e intensity factors from electricity are from the DEIR, adjusted for RPS requirements in 2035.
- <sup>2</sup> Based on the upper end of the range of fuel economies provided by the United States Alternative Fuels Data Center for electric vehicles. Source: <https://afdc.energy.gov/fuels/electricity-benefits>.
- <sup>3</sup> The emission factor was obtained from EMFAC2017.
- <sup>4</sup> The annual VMT reduction estimated based on an estimate of ten hours of charge time for a Level 2 charging station that charges at a rate of 25 miles of driving range per hour.
- <sup>5</sup> The number of charging stations based on total project commitments for installing chargers within disadvantaged communities.
- <sup>6</sup> The annual VMT reduction from all stations is the annual VMT reduction per charging station multiplied by the number of electric chargers.
- <sup>7</sup> The GHG emission reduction was calculated by subtracting the GHG emissions of an electric vehicle from the GHG emissions of a gasoline/diesel vehicle.
- <sup>8</sup> The value was obtained from the Climate Resolve Agreement.
- <sup>9</sup> The total GHG reductions from LDA EV chargers in disadvantaged communities is the number of LDA EV chargers in disadvantaged communities multiplied by the GHG reduction per parking space with charging per year.

Conversion Factors:

- 2204.62 lb/MT
- 1.00E-06 MT/gram
- 0.001 MWh to kWh
- 0.907185 MT/ton
- 347 operation days/yr (based on EMFAC)

IPCCAR4 Global Warming Potentials (GWP):

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

Abbreviations:

CalEEMod - California Emissions Estimator Model	lb - pound
CARB - California Air Resources Board	LDA- light-duty automobiles
CH <sub>4</sub> - methane	kWh - kilowatt-hour
CO <sub>2</sub> - carbon dioxide	MT - metric tonnes
CO <sub>2</sub> e - carbon dioxide equivalents	MWh - megawatt-hour
DEIR - Draft Environmental Impact Report	RPS - Renewable Portfolio Standard
EMFAC - CARB Emissions Factor Model	SCE - Southern California Edison
EV - electric vehicle	TDM - Transportation Demand Management
GHG - greenhouse gases	VMT - vehicle miles traveled
gms - grams	

**Table 9. Commitment to No Natural Gas Emissions from Residential Buildings**

Tejon Ranch Centennial  
Los Angeles County, California

Land Use	Energy Use <sup>1</sup>		Total New Electricity Usage Including Usage from All Removed Natural Gas (MWh/yr) <sup>2,3</sup>	Remaining Natural Gas Usage <sup>6</sup> (MMBtu/yr)
	Electricity (MWh/yr)	Natural Gas (MMBtu/yr)		
Single-Family Housing	59,030	340,900	141,919	0
Apartments Mid Rise	11,060	71,130	28,355	0
<b>Total</b>	<b>70,090</b>	<b>412,030</b>	<b>170,274</b>	<b>0</b>
<b>Associated GHG (MT CO<sub>2</sub>e/year)<sup>4,5</sup></b>	<b>0</b>	<b>22,118</b>	<b>0</b>	<b>0</b>

Notes:

<sup>1</sup> The residential energy usages were obtained from the Project DEIR.

<sup>2</sup> The residential natural gas usages were broken down into end use distribution (space heating, water heating, space cooling, other), based on 2015 Residential Energy Consumption Survey. Data used is for the Pacific census region. This is available at: <https://www.eia.gov/consumption/residential/data/2015/c&e/pdf/ce4.5.pdf>.

<sup>3</sup> The residential natural gas usages were converted into equivalent electricity usages by multiplying by the ratio of efficiencies between natural gas and equivalent electric appliances.

The space heating efficiency values are available at: <https://www.energy.gov/energysaver/home-heating-systems/furnaces-and-boilers> and <https://www.eia.gov/todayinenergy/detail.php?id=14051>.

The water heating efficiencies are available at:

<https://web.archive.org/web/20220403072909/https://www.energy.gov/eere/femp/energy-cost-calculator-electric-and-gas-water-heaters>.

It was conservatively assumed that the ratio of natural gas and electric efficiencies for space cooling and cooking appliances was 1:1.

<sup>4</sup> The electricity usage is converted into GHG emissions based on an intensity of 0 lb CO<sub>2</sub>e/MWh, assuming the Project is supplied by clean energy.

<sup>5</sup> The natural gas usage is converted into GHG emissions based on emission factors obtained from CalEEMod Appendix D. This is available at: <http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=12>.

<sup>6</sup> The conversion of the electricity usage and natural gas into GHG emissions results in the assumption that the remaining natural gas usage is zero.

Conversion Factors:

3412.14 Btu/kWh

0 lb CO<sub>2</sub>e/MWh, intensity factor used to reflect participation in SCE's Clean Power Plan

2204.62 lb/MT

118.35 lb CO<sub>2</sub>e/MMBtu, CalEEMod default natural gas emission factor

Abbreviations:

CalEEMod - California Emissions Estimator Model

CO<sub>2</sub>e - carbon dioxide equivalents

DEIR - Draft Environmental Impact Report

GHG - greenhouse gases

lb - pound

MMBtu - million British thermal units

MT - metric tonnes

MWh - megawatt-hour

SCE - Southern California Edison

yr - year

**Table 10. Commitment to No Natural Gas Emissions from Commercial Buildings**

Tejon Ranch Centennial  
Los Angeles County, California

Land Use	Energy Use <sup>1</sup>		Total New Electricity Usage Including Usage from All Removed Nonessential Natural Gas (MWh/yr) <sup>3,4</sup>	Remaining Nonessential Natural Gas Usage <sup>7</sup> (MMBtu/yr)
	Electricity (MWh/yr)	Nonessential Natural Gas (MMBtu/yr) <sup>2</sup>		
Elementary School	1,834	4,577	3,014	0
General Light Industry	1,007	2,419	1,631	0
Government (Civic Center)	9,219	10,414	11,904	0
Health Club	689	1,654	1,116	0
High School	1,273	3,178	2,092	0
Office Park	46,430	45,634	58,196	0
Regional Shopping Center	6,465	1,217	6,779	0
<b>Total</b>	<b>66,917</b>	<b>69,092</b>	<b>84,731</b>	<b>0</b>
<b>Associated GHG (MT CO<sub>2</sub>e/year)<sup>5,6</sup></b>	<b>0</b>	<b>3,709</b>	<b>0</b>	<b>0</b>

Notes:

<sup>1</sup> The commercial energy usages were obtained from Project DEIR.

<sup>2</sup> The natural gas used for space heating, space cooling, and cooking is considered nonessential. Accordingly, 92% of natural gas is nonessential based on data from Table E-4 of the CEUS dashboard. This is available at:

<https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C19.pdf>. The remaining 8% of natural gas use in the DEIR (5,748 MMBtu/yr) was assumed to be essential.

<sup>3</sup> The commercial natural gas usages are broken down into end use distribution (space heating, water heating, space cooling, other), based on 2006 California Commercial End-Use Survey. This is available at:

<https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C19.pdf>.

<sup>4</sup> The commercial natural gas usages are converted into equivalent electricity usages by multiplying by the ratio of efficiencies between natural gas and equivalent electric appliances.

The space heating efficiency values are available at: <https://www.energy.gov/energysaver/home-heating-systems/furnaces-and-boilers> and <https://www.eia.gov/todayinenergy/detail.php?id=14051>.

The water heating efficiencies are available at:

<https://web.archive.org/web/20220403072909/https://www.energy.gov/eere/femp/energy-cost-calculator-electric-and-gas-water-heaters>.

It was conservatively assumed that the ratio of natural gas and electric efficiencies for space cooling and cooking appliances was 1:1.

<sup>5</sup> The electricity usage is converted into GHG emissions based on an intensity of 0 lb CO<sub>2</sub>e/MWh, assuming the Project is supplied by clean energy.

<sup>6</sup> The natural gas usage is converted into GHG emissions based on emission factors obtained from CalEEMod Appendix D. This is available at: <http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=12>.

<sup>7</sup> The conversion of the electricity usage and natural gas into GHG emissions results in the assumption that the remaining natural gas usage is zero.

Conversion Factors:

3412.14 Btu/kWh

0 lb CO<sub>2</sub>e/MWh, intensity factor used to reflect participation in SCE's Clean Power Plan

2204.62 lb/MT

118.35 lb CO<sub>2</sub>e/MMBtu, CalEEMod default natural gas emission factor

92% Percentage of natural gas that is non-essential

Abbreviations:

CalEEMod - California Emissions Estimator Model

GHG - greenhouse gases

MWh - megawatt-hour

CEUS - Commercial End-Use Survey

lb - pound

SCE - Southern

CO<sub>2</sub>e - carbon dioxide equivalents

MMBtu - million British thermal units

California Edison

DEIR - Draft Environmental Impact Report

MT - metric tonnes

yr - year

**Table 11. Energy Calculations**

Tejon Ranch Centennial  
Los Angeles County, California

<b>Parameter</b>	<b>Emissions (MT CO<sub>2</sub>e/year)</b>
<b>Energy Emissions Inventory in FEIR GHG Report<sup>1</sup></b>	<b>55,047</b>
<i>Reductions from Commitment to No Natural Gas at Residential Uses (Table 9)<sup>2</sup></i>	-22,118
<i>Reductions from Commitment to No Natural Gas at Non-Essential Non-Residential Uses (Table 10)<sup>3</sup></i>	-3,709
<b>Subtotal: Remaining Energy Inventory, No Natural Gas</b>	<b>29,220</b>
<i>Reductions from Commitment to all Renewable On-Site Electricity<sup>4</sup></i>	-29,220
<b>Final Energy Emissions Inventory</b>	<b>0</b>

Notes:

<sup>1</sup> The Updated Greenhouse Gas Calculations for the Centennial Project Final Environmental Impact Report lists an energy emissions inventory of 55,047 MT CO<sub>2</sub>e per year.

<sup>2</sup> The estimate of reductions from the commitment to eliminate natural gas use at residential uses is outlined in Climate Resolve Agreement commitment #5a and represented in Table 9.

<sup>3</sup> The estimate of reductions from the commitment to eliminate natural gas use at non-essential non-residential uses is outlined in Climate Resolve Agreement commitment #5a and represented in Table 10.

<sup>4</sup> The estimate of reductions reflects participation in Southern California Edison's Clean Power Plan, as encouraged in Climate Resolve Agreement commitment #5c.

Abbreviations:

CO<sub>2</sub>e - carbon dioxide equivalents

FEIR - Final Environmental Impact Report

GHG - greenhouse gas

MT - metric ton

**Table 12. Commitment to No Natural Gas Emissions from Residential Buildings at the Grapevine Project**

Tejon Ranch Centennial  
Los Angeles County, California

Land Use	Energy Use <sup>1</sup>		Total New Electricity Usage Including Usage from All Removed Natural Gas (MWh/yr) <sup>2,3</sup>	Remaining Natural Gas Usage <sup>6</sup> (MMBtu/yr)
	Electricity (MWh/yr)	Natural Gas (MMBtu/yr)		
Single-Family Housing	32,621	200,314	81,326	0
Apartments Low Rise	7,220	57,905	21,299	0
<b>Total</b>	<b>39,840</b>	<b>258,219</b>	<b>102,626</b>	<b>0</b>
<b>Associated GHG (MT CO<sub>2</sub>e/year)<sup>4,5</sup></b>	<b>1,673</b>	<b>13,861</b>	<b>4,309</b>	<b>0</b>

Notes:

<sup>1</sup> The residential energy usages were obtained from Project DEIR.

<sup>2</sup> The residential natural gas usages are broken down into end use distribution (space heating, water heating, space cooling, other), based on 2015 Residential Energy Consumption Survey. Data used is for the Pacific census region. This is available at: <https://www.eia.gov/consumption/residential/data/2015/c&e/pdf/ce4.5.pdf>.

<sup>3</sup> The residential natural gas usages are converted into equivalent electricity usages by multiplying by the ratio of efficiencies between natural gas and equivalent electric appliances.

The space heating efficiency values available at: <https://www.energy.gov/energysaver/home-heating-systems/furnaces-and-boilers> and <https://www.eia.gov/todayinenergy/detail.php?id=14051>.

The water heating efficiencies available at:

<https://web.archive.org/web/20220403072909/https://www.energy.gov/eere/femp/energy-cost-calculator-electric-and-gas-water-heaters>.

It was conservatively assumed that the ratio of natural gas and electric efficiencies for space cooling and cooking appliances was 1:1.

<sup>4</sup> The electricity usage is converted into GHG emissions based on an intensity of 92.56 lb CO<sub>2</sub>e/MWh, as used in the Project CalEEMod runs.

<sup>5</sup> The natural gas usage is converted into GHG emissions based on emission factors obtained from CalEEMod Appendix D.

Available: <http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=12>.

<sup>6</sup> The conversion of the electricity usage and natural gas into GHG emissions results in the assumption that the remaining natural gas usage is zero.

Conversion Factors:

3412.14 Btu/kWh

92.563 lb CO<sub>2</sub>e/MWh, intensity factor used in CalEEMod runs

2204.62 lb/MT

118.35 lb CO<sub>2</sub>e/MMBtu, CalEEMod default natural gas emission factor

Abbreviations:

CalEEMod - California Emissions Estimator Model

CO<sub>2</sub>e - carbon dioxide equivalents

DEIR - Draft Environmental Impact Report

GHG - greenhouse gases

lb - pound

MMBtu - million British thermal units

MT - metric tonnes

MWh - megawatt-hour

SCE - Southern California Edison

yr - year

**Table 13. GHG Emission Reductions from EV Subsidies for Class 1-3 (LHD) Trucks**

Tejon Ranch Centennial  
Los Angeles County, California

<b>EMFAC2017 Data<sup>1</sup></b>		
Calendar Year	2035	
Region	Los Angeles (SC)	
EMFAC2017 LHDT VMT	9,878,971	miles/day
EMFAC2017 LHDT Population	295,394	Trucks
EMFAC2017 LHDT Running Exhaust Emissions	CO <sub>2</sub>	5,314 MT/day
	CH <sub>4</sub>	0.0181 MT/day
	N <sub>2</sub> O	0.3729 MT/day
	CO <sub>2</sub> e	5,426 MT/day
EMFAC2017 LHDT Emission Factor	CO <sub>2</sub> e	549 g/mile
<b>ZE Class 1-3 Truck Data</b>		
Number of Trucks to be Replaced <sup>2</sup>	500	Trucks
Average Annual VMT <sup>3</sup>	10,936	miles/truck/year
Average Annual GHG Emissions per Truck <sup>4</sup>	6.0	MT CO <sub>2</sub> e/truck/year
<b>Total Annual GHG Emissions Reduced<sup>5</sup></b>	<b>3,003</b>	<b>MT CO<sub>2</sub>e/year</b>

Notes:

<sup>1</sup> The values were obtained from EMFAC2017.

<sup>2</sup> The value for the number of trucks to be replaced was obtained from the Climate Resolve Agreement.

<sup>3</sup> The average Annual VMT was calculated from dividing the LHDT VMT by the LHDT population and multiplying it by the EMFAC Default operational days per year.

<sup>4</sup> The average annual GHG emissions per truck was calculated from multiplying the LHDT emission factor with the average annual VMT.

<sup>5</sup> The total annual GHG emissions reduced is average annual GHG emissions per truck multiplied by the number of trucks to be replaced.

Conversion Factors:

0.907185 MT/ton  
327 days/year, EMFAC Default<sup>1</sup>  
1000000 g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO <sub>2</sub>	1
CH <sub>4</sub>	25
N <sub>2</sub> O	298

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Change
CH <sub>4</sub> - methane	LHDT - light heavy duty truck
CO <sub>2</sub> - carbon dioxide	MT - metric ton
CO <sub>2</sub> e - carbon dioxide equivalents	N <sub>2</sub> O - nitrous oxide
EMFAC - CARB Emissions Factor Model	SC- South Coast
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	



**Table 14. Climate Resolve Agreement GHG Emissions Reduction Summary**

Tejon Ranch Centennial  
Los Angeles County, California

Category	Measure Description	Location (On-Site or Off-Site)	Reductions: Calculated Scenario <sup>1</sup> (MT CO <sub>2</sub> e/year)		
			On-Site	Off-Site	Total
From Itemized GHG Mitigation Measures <sup>2</sup>	EV grant program for public agency service fleets (Table 2)	Off-Site	--	259	259
	EV grant program for community agencies or organizations (Table 3)	Off-Site	--	778	778
	Incentives to purchase school and transit buses and install chargers (Table 4)	On-Site	3,730	--	3,730
	Truck chargers installed at Tejon Ranch Commerce Center (Table 5)	Off-Site	--	13,208	13,208
	Chargers installed at non-residential structures (Table 6)	On-Site	72,428	--	72,428
	Chargers installed at residential dwelling units (Table 7)	On-Site	51,462	--	51,462
	Chargers installed in disadvantaged communities (Table 8)	Off-Site	--	72,881	72,881
	Prohibition of fossil fuel fireplaces	On-Site	11,056	--	11,056
	<b>Subtotal</b>	--	<b>138,676</b>	<b>87,127</b>	<b>225,803</b>
Reduced by Centennial Energy Requirements <sup>3</sup>	No natural gas for residential uses (Table 9)	On-Site	22,118	--	22,118
	No natural gas for non-essential non-residential uses (Table 10)	On-Site	3,709	--	3,709
	Commitments to renewable energy (Table 11)	On-Site	29,220	--	29,220
	<b>Subtotal</b>	--	<b>55,047</b>	<b>0</b>	<b>55,047</b>
Reduced by Grapevine Residential Gas Restriction <sup>4</sup>	No natural gas infrastructure at the Grapevine (Table 12)	Off-Site	--	11,225	<b>11,225</b>
Reduced by Class 1-7 Truck Incentives <sup>5</sup>	Reimbursement incentives for heavy-duty vehicles used at Centennial (Table 13)	On-Site	3,003	--	<b>3,003</b>
<b>Total Reductions</b>		--	<b>196,727</b>	<b>98,352</b>	<b>295,078</b>

Notes:

<sup>1</sup> Reductions shown as calculated in Tables 2 - 13. GHG reductions associated with the prohibition of fossil fuel fireplaces at Centennial are expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the Project DEIR.

<sup>2</sup> The estimate of reductions from the itemized GHG mitigation measures is outlined in the Climate Resolve Agreement commitments #1 through #4 and represented in Table 2 through Table 8. This also includes GHG reductions associated with the prohibition of fossil fuel fireplaces at Centennial, which were expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the Project DEIR.

<sup>3</sup> The estimate of reductions from the Centennial energy requirements is outlined in Climate Resolve Agreement commitment #5 and represented in Tables 9, 10, and 11.

<sup>4</sup> The estimate of reductions from the Grapevine residential gas restriction is outlined in Climate Resolve Agreement commitment #5d and represented in Table 12.

<sup>5</sup> The estimate of reductions from the Class 1-7 truck incentives is outlined in Climate Resolve Agreement commitment #2d and represented in Table 13.

Abbreviations

CO<sub>2</sub>e - carbon dioxide equivalents  
DEIR - Draft Environmental Impact Report  
EV - electric vehicle

GHG - greenhouse gas  
MT - metric ton  
yr - year

**Table 15. Climate Resolve Agreement GHG Emissions Reduction Summary (Conservative Scenario)**

Tejon Ranch Centennial  
Los Angeles County, California

Category	Measure Description	Location (On-Site or Off-Site)	Reductions: Conservative On-Site Mobile Scenario <sup>1</sup> (MT CO <sub>2</sub> e/year)		
			On-Site	Off-Site	Total
From Itemized GHG Mitigation Measures <sup>3</sup>	EV grant program for public agency service fleets (Table 2)	Off-Site	--	259	259
	EV grant program for community agencies or organizations (Table 3)	Off-Site	--	778	778
	Incentives to purchase school and transit buses and install chargers (Table 4)	On-Site	1,925	--	1,925
	Truck chargers installed at Tejon Ranch Commerce Center (Table 5)	Off-Site	--	13,208	13,208
	Chargers installed at non-residential structures (Table 6)	On-Site	37,377	--	37,377
	Chargers installed at residential dwelling units (Table 7)	On-Site	26,557	--	26,557
	Chargers installed in disadvantaged communities (Table 8)	Off-Site	--	72,881	72,881
	Prohibition of fossil fuel fireplaces	On-Site	11,056	--	11,056
<b>Subtotal</b>		--	<b>76,915</b>	<b>87,127</b>	<b>164,042</b>
Reduced by Centennial Energy Requirements <sup>4</sup>	No natural gas for residential uses (Table 9)	On-Site	22,118	--	22,118
	No natural gas for non-essential non-residential uses (Table 10)	On-Site	3,709	--	3,709
	Commitments to renewable energy (Table 11)	On-Site	29,220	--	29,220
	<b>Subtotal</b>		--	<b>55,047</b>	<b>0</b>
Reduced by Grapevine Residential Gas Restriction <sup>5</sup>	No natural gas infrastructure at the Grapevine (Table 12)	Off-Site	--	11,225	11,225
Reduced by Class 1-7 Truck Incentives <sup>6</sup>	Reimbursement incentives for heavy-duty vehicles used at Centennial (Table 13)	On-Site	3,003	--	3,003
<b>Total Reductions</b>		--	<b>134,965</b>	<b>98,352</b>	<b>233,317</b>

Notes:

<sup>1</sup> Reductions shown as calculated in Tables 2 - 13. GHG reductions associated with the prohibition of fossil fuel fireplaces at Centennial are expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the Project DEIR. The DEIR calculated that 65,859 MT CO<sub>2</sub>e per year would be reduced by assuming a EV utilization rate of 50% at Project buildout. Reductions from the on-site mobile commitments presented in Tables 4, 6, and 7 were scaled down to ensure that reductions attributed to on-site mobile measures do not exceed this value.

<sup>2</sup> The estimate of reductions from the itemized GHG mitigation measures is outlined in the Climate Resolve Agreement commitments #1 through #4 and represented in Table 2 through Table 8. This also includes GHG reductions associated with the prohibition of fossil fuel fireplaces at Centennial, which were expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the Project DEIR.

<sup>3</sup> The estimate of reductions from the Centennial energy requirements is outlined in Climate Resolve Agreement commitment #5 and represented in Tables 9, 10, and 11.

<sup>4</sup> The estimate of reductions from the Grapevine residential gas restriction is outlined in Climate Resolve Agreement commitment #5d and represented in Table 12.

<sup>5</sup> The estimate of reductions from the Class 1-7 truck incentives is outlined in Climate Resolve Agreement commitment #2d and represented in Table 13.

Abbreviations

CO<sub>2</sub>e - carbon dioxide equivalents  
DEIR - Draft Environmental Impact Report  
EV - electric vehicle

GHG - greenhouse gas  
MT - metric ton  
yr - year

**Table 16. GHG Emission Reduction Locations**

Tejon Ranch Centennial  
Los Angeles County, California

Document	Commitment Number	Measure Description	Classification of Reduction
Settlement Agreement	1a	Reimbursement incentives for residents to purchase an EV	Local (on-site)
	1b	Residential chargers at single-family dwelling units	Local (on-site)
	1c	Residential chargers at multi-family dwelling units	Local (on-site)
	2a	Chargers installed at non-residential structures	Local (on-site)
	2b	Truck chargers installed at Tejon Ranch Commerce Center	Local (off-site, outside LA County)
	2c	Encouraged renewable energy use for EVSEs	Local (on-site)
	2d	Reimbursement incentives for heavy-duty vehicles used at Centennial	Local (on-site)
	3a, 3c	EV grant program for public agency service fleets	Local (off-site)
	3b, 3c	EV grant program for community agencies or organizations	Local (off-site)
	3d	Incentives to purchase school and transit buses and install chargers	Local (on-site)
	4a	Chargers installed in disadvantaged communities	Local (off-site)
	5a	No natural gas for residential or non-essential non-residential uses	Local (on-site)
	5b	Battery storage systems as required	Local (on-site)
	5c	Encouraged 100% Clean Power Plan participation	Local (on-site)
	5d	No natural gas infrastructure at the Grapevine	Local (off-site, outside LA County)
Centennial Project Final EIR - 2018 GHG Update Report	MM 11-3	No wood burning fireplaces, electric landscape equipment	Local (on-site)
	MM 13-2, 13-6	High-efficiency lighting	Local (on-site)
	MM 21-1	Onsite renewable energy	Local (on-site)
	MM 18-1, 21-9, 21-13	On-site biogas, residential water budget	Local (on-site)
	MM 10-25	Single occupancy vehicle requirements	Local (on-site)
	MM 21-14	Affordable housing	Local (on-site)
	MM 21-22, 14-1, 10-26	Pedestrian and bicycle facilities	Local (on-site)
	MM 10-1	Encouraged telecommuting	Local (on-site)
	MM 11-4, 11-6, 21-15, 21-16, 21-18, 21-19	EV charger installation and infrastructure support	Local (mixed onsite/offsite)
	MM 17-10	Waste diversion	Local (on-site)
	MM 7-11, 7-12, 21-20	Vegetation restoration, landscaping requirements	Local (on-site)

Abbreviations:

- EIR - Environmental Impact Report
- EV - electric vehicle
- EVSE - electric vehicle service equipment
- GHG - greenhouse gas
- MM - mitigation measure
- SQAQMD - South Coast Air Quality Management District

February 27, 2025

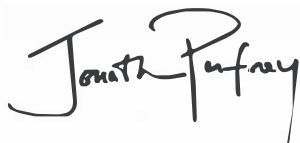
Amy Bodek  
Planning Director  
Los Angeles County Department of Regional Planning  
320 West Temple Street  
Los Angeles, CA 90012

Dear Ms. Bodek,

We are writing this letter to confirm that the conditions contained in the Settlement Agreement between Climate Resolve, Tejon Ranchcorp and Centennial Founders, LLC are additive and were not measures required by previous County approvals. The legally binding commitments within the Settlement Agreement are requirements that we requested in order to address our concerns regarding Centennial's impacts to climate change and wildfire. Tejon Ranchcorp and Centennial Founders, LLC voluntarily agreed to our proposed requirements and entered into a legally enforceable, binding agreement that also provides funding to ensure that ongoing compliance with the Settlement Agreement can be monitored and the terms of the Agreement can be enforced.

All of the measures contained in the Settlement Agreement, including the required installation of Level-2 electric vehicle chargers at residential and non-residential uses, as well as EV truck chargers at Tejon Ranch Commerce Center and the prohibition on use of natural gas and associated infrastructure in residences at the Grapevine Project, are now required of Tejon Ranchcorp and Centennial Founders, LLC, not because of previous County approvals, but through the mutually agreed upon Settlement Agreement. These are just some examples of the additional mitigations that Climate Resolve, Tejon Ranchcorp and Centennial Founders, LLC have committed to implement to make the Tejon Ranch Project a net zero GHG project.

Regards,



Jonathan Parfrey  
Executive Director

## AFFIDAVIT OF GHG EMISSION REDUCTION COMMITMENTS

I, Hugh F. McMahon, IV, declare as follows:

1. I am over the age of 18.
2. I am a duly designated representative of Tejon Ranchcorp ("Tejon Ranch") and Centennial Founders LLC ("Centennial").
3. I have personal knowledge of the facts stated in this affidavit.
4. All of the greenhouse gas ("GHG") emission reductions that are calculated in the tables attached to the Centennial Net-Zero Greenhouse Gas Emissions Reduction Compliance ("Net-Zero Compliance") are only occurring as a result of the enforceable legal agreement Tejon Ranch and Centennial entered into on November 30, 2021 to resolve litigation with Climate Resolve (the "Climate Resolve Agreement"). None of the GHG emission reductions that are calculated in the tables attached to the Net-Zero Compliance are otherwise required by law, regulation, or legally binding mandate, and none of the GHG emission reductions would otherwise occur.
5. Neither the Centennial Project nor any locations where off-site reductions are expected to occur, including the Grapevine and Tejon Ranch Commerce Center, had any prior commitments to reduce their GHG emissions as required by the Climate Resolve Agreement.
6. Based on standard GHG accounting principles of both additionality and double-counting, no GHG mitigation used for the Centennial project has been or will be applied to or counted towards any other project.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on 11<sup>TH</sup> day of MARCH, at Lebec, CA.

A handwritten signature in blue ink, appearing to read 'Hugh F. McMahon, IV', written over a horizontal line.

Hugh F. McMahon, IV  
Executive Vice President, Real Estate