
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

POLICY

POLI-PLAN-03

Approved By

Name
Title

Date

TITLE: Sustainability

POLICY

The Authority will deliver a sustainable high-speed rail system for California that serves as a model for sustainable rail infrastructure. The Authority has developed and will continue to implement sustainability practices that inform and affect the planning, siting, designing, construction, mitigation, operation, and maintenance of the high-speed rail system.

BACKGROUND

The high-speed rail system will transform how Californians move and live throughout the state for decades to come. The Authority Board of Directors, legislators, stakeholders, and regulatory bodies have stressed that the project should exemplify sustainability in its [planning, siting](#), design, construction, [mitigation](#), operation, [mitigation](#), maintenance, and management. It is vital that stakeholders are clearly aware of the sustainability priorities for the system and how these priorities will be achieved by the Authority and its delivery teams.

Sustainability refers to the actions of current populations to meet their development needs without sacrificing the future generations' capacity to meet theirs. This frames the Authority's approach to planning, designing, [siting](#), constructing, operating, [maintaining](#), and managing the high-speed rail system. The Authority's priorities and objectives seek to balance social, economic, and environmental issues. This approach will allow the Authority to capture value from sustainability activities and opportunities.

The Authority initially signed a comprehensive sustainability policy in September 2013, to honor several industry sustainability and stakeholder commitments. [The Authority Board adopted an updated Sustainability policy in March 2016](#). Since then, it has continuously implemented a range of sustainability actions, including an [update to its](#) materiality assessment which [reaffirmed an](#) identified a [specific set](#) of stakeholder sustainability priorities.

PURPOSE

The California High-Speed Rail Authority (Authority) is delivering a transformative high-speed rail system for California and is taking a comprehensively sustainable approach to the design, construction, and operation of the high-speed rail system. Our commitment is to not only deliver a system whose operation will contribute significantly to a more sustainable California, but also to employ [leading leading-edge](#) methods during construction and make the country's largest infrastructure program a model for sustainable delivery. This document presents an all-encompassing sustainability policy for the high-speed rail program. [This document, and](#) summarizes the Authority's sustainability objectives and specific sustainability commitments.

Sustainability represents the degree to which actions taken today enable current and future generations to lead healthy and rewarding lives. This definition implies that the actions taken now to meet current development and transportation needs must also consider how future generations will be able to meet their needs. It also implies a reluctance to bequeath financial and environmental hardship to the next generation.

To implement these ideals, sustainability is used as an organizing framework at the Authority, as other businesses, organizations, and projects have done. Consideration of environmental, social, and financial impacts for both current and future generations is a norm that permeates all aspects of the organization and every element of the project life cycle.

While the Authority has several ongoing interrelated efforts that represent significant momentum, in light of its evolution to a delivery organization, as well as recent legislation such as SB 100 and AB 262 ~~recent Executive Orders, as well as SB 862 and SB 350~~, the Authority's intent in this document is to update its comprehensive sustainability policy and framework, ~~including its commitments to~~ including specifically mapping sustainability objectives to construction and operation. ÷

- ~~☐ Net zero greenhouse gas and criteria pollutant emissions in construction~~
- ~~☐ Operating the system entirely on renewable energy~~
- ~~☐ Net Zero Energy, LEED Platinum Facilities~~
- ~~☐ Planning for climate change adaptation~~
- ~~☐ Prioritizing life cycle considerations~~

This framework is intended to strategically identify directed, creative, cost-effective approaches to achieving the Authority's sustainability objectives. Specific goals provide targets toward which planning, design, ~~and construction,~~ and operations practices can be steered, and reinforces requirements of procurement documents.

COMMITMENT

This policy complements and reinforces the fundamental commitment to Californians and the goals expressed in the legislation enabling high-speed rail. The objective of the policy is to minimize impacts to the natural and built environment, maximize safety and reliability, encourage compact, walkable land development around transit stations, encourage ridership and revenue, and help California reduce resource consumption, traffic and airport congestion, and energy dependency in a cost-effective manner over its entire life cycle.

SUSTAINABILITY PRIORITIES, OBJECTIVES & PRINCIPLES

In 2012, Authority staff and stakeholders identified five sustainability priorities. In 2015 and 2018, further ~~stakeholder engagement confirmed the relevance of~~ and refined these priorities, defined below~~:-~~:

Energy & Emissions refers to the conservation and type of energy resources used to construct and operate the rail systems, well as to the tracking and minimization of emissions (both greenhouse gas and criteria air pollutant emissions) associated with both construction and operation ~~conservation, and type, of non-renewable energy used for rail operations and facilities~~

Station Communities & Ridership refers to collaborative planning activities that promote transit-oriented development and sustainable land use decisions that will help bring riders into the system,

encourage and promote proximity co-location for education, health and business institutions and ancillary consumer concession services

Sustainable Infrastructure refers to the set of principles and actions in planning, siting, design, construction, mitigation, ~~and~~ operation, mitigation, maintenance, and management to accomplish of infrastructure that reflect a balance of social, environmental, and economic concerns

Natural Resources refers to the environment and its resources, addressed in and within ecological systems

~~Business & Management~~ **Economic Development & Governance** refers to responsible leadership and management, transparency practices, as well as and sound business planning

The following priorities and ~~objectives~~ commitments are designed to advance the overall sustainability policy and ~~correspond~~ to specific actions the Authority will undertake itself or through work with partners. The ~~objectives~~ allow the Authority to set qualitative and quantitative targets and monitor progress; a specific ~~plan~~ for implementation and measuring progress will be developed by the Authority.

As the Authority enters contracts for the construction and implementation of the high-speed rail program, system-specific goals ~~and strategies will be~~ are further refined in each contract’s general and special ~~provisions~~, sustainability strategies and procedures, and ~~other~~ other contract documents. As the system delivery advances, more specificity on operations practices and strategies will be incorporated into the Authority’s sustainability implementation plan.

Sustainability Priorities and Commitments by Phase

Priorities	Commitments	
ENERGY & EMISSIONS	Achieve net- zero GHG and criteria air pollutant emissions in construction	Construction
	<u>Net-zero energy/LEED Platinum facilities</u>	Operation
	Operate the system on 100% renewable energy	
	Strengthen public health by improving air quality	
	Reduce vehicle miles traveled	
	<u>Reduce operational energy costs</u>	
SUSTAINABLE INFRASTRUCTURE	<u>Design and construct the system in conformance with Authority’s Principles for Sustainable Infrastructure</u>	Construction
	<u>Consider climate change risks and vulnerabilities, and plan for them proactively by incorporating climate adaptation measures into system design</u>	
	<u>Protect health and safety of workers and communities</u>	
	<u>Operate the system in conformance with Authority’s Principles for Sustainable Infrastructure</u>	Operation

	Protect health and safety of workers, customers, and communities	
NATURAL RESOURCES	Conserve, maintain, and restore habitat and wildlife corridors through landscape scale mitigation	Construction
	Retain, protect, and enhance the environmental quality and biodiversity of the project area	
	Conserve agricultural land	
	Reduce the demand for virgin natural resources by using recycled materials	
	Practice on-site water conservation	
	Work toward zero-net water operations	Operation
STATION COMMUNITIES & RIDERSHIP	Design and construct stations and infrastructure that reinforce Sustainable Community Strategies (Senate Bill 375)	Planning, Construction & Operation
	Implement livable development patterns in station areas and reinforce quality of life through design of the built environment	
	Reinforce infill development and affordable housing through station area planning partnerships and identify a mechanism to fund two-to-one replacement of low and moderate income housing stock	
	Provide convenient station access and appropriate station interfaces to all high-speed rail station areas	
	Connect local and regional transit to high-speed rail stations	
	Implement active transportation facilities for station access (walking and bicycling)	
ECONOMIC DEVELOPMENT & GOVERNANCE	Improve the economic value to Californians from the system and maximize benefits to disadvantaged communities	Construction
	Implement 30 percent overall small business participation for Authority contracts, including 10 percent Disadvantaged Business (DBE) participation and 3 percent Disabled Veteran Business Enterprises (DVBE)	
	Maximize opportunity for private investment	
	Govern transparently and accountably	
	Continuously improve program delivery and management	
	Maximize opportunity for private investment and private sector operations. Achieve a self-sustaining financial structure	Operation

AUTHORITY PRINCIPLES FOR SUSTAINABLE INFRASTRUCTURE

The California High-Speed Rail Program will provide critically-needed new transportation infrastructure for Californians and the Authority is committed to ensuring it is implemented in a sustainable manner. As –sustainable infrastructure can refer to a variety of priorities and objectives, the Authority defined its –sustainable infrastructure principles, founding these principles on global best practices, stakeholder –priorities, and California state regulations.

The following principles encompass the Authority’s commitment to sustainable infrastructure:

- ~~Make~~ Require energy efficiency ~~a priority to be included~~ considered in design.
- Minimize GHG emissions through design and requirements and achieve net-zero GHG and criteria air pollutant emissions in construction.
- Design and construct high-performance facilities that achieve net-zero energy for operations and can be LEED certified at the Platinum level.
- Require Environmental Product Declarations for construction materials, including steel products and concrete mix designs, to improve disclosure of materials' information and incentivize the selection of better environmental performing products.
- Require optimized life cycle scores for major materials, including assessment of global warming potential, while maintaining competition, durability and quality.
- Require the use of non-hazardous materials where possible and minimize the use of those harmful to human health or the environment.
- Investigate appropriateness of groundwater recharge along the alignment and make it a requirement where appropriate.
- Require groundwater recharge at sites where practicable and/or detain water for reuse in irrigation, while maintaining water quality.
- Sequester in-situ hazardous material (where feasible and cost effective).
- Follow construction waste practices that divert at least 87.5 percent of waste from landfill, unless the local regulation is higher.
- Recycle all steel and concrete waste generated in construction.
- Follow construction practices that maintain or improve air quality during construction, both for workers and people living in the air basin in which the project is being constructed.
- Require life cycle performance of components, systems, and materials where practicable. Adaptively reuse existing structures and facilities whenever feasible.
- Reduce potable water use in design, construction, and operation to the maximum extent practicable.
 - ~~☐ Use 100 percent renewable energy for operation.~~
 - ~~☐ Minimize GHG emissions through design and requirements and achieve net-zero GHG and criteria air pollutant emissions in construction~~
 - ~~☐ Design and construct high-performance facilities that achieve net-zero energy for operations and are~~
- ~~LEED certified at the Platinum level.~~ Develop and implement ~~Maintain a community and stakeholder engagement plan throughout design, construction, and operation of the system.~~
- ~~☐ Use 100 percent renewable energy for system operation.~~
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- Maximize station access for pedestrians, cyclists, and transit riders.
- ~~☐ Require Environmental Product Declarations for construction materials, including steel products and concrete mix designs, to improve disclosure of materials' information and incentivize the selection of better environmental performing products.~~

- ~~☐ Require optimized life cycle scores for major materials, including global warming potential, while maintaining durability and quality.~~
- ~~☐ Make the use of non-hazardous materials a priority and minimize the use of those harmful to human health or the environment.~~
- ~~☐ Investigate appropriateness of groundwater recharge along the alignment and make it a priority where appropriate.~~
- ~~☐ Make groundwater recharge at sites a priority and/or detain water for reuse in irrigation, while maintaining water quality.~~
- Require consideration of Consider equitable system access, investments and benefits through design, construction, and operation of the system.s
- Progressively refine sustainability requirements in design and construction contracts to achieve improved outcomes.
 - ~~☐ Sequester in situ hazardous material (where feasible and cost effective).~~
 - ~~☐ Follow construction waste practices that divert at least 75 percent of waste from landfill, unless the local regulation is higher.~~
 - ~~☐ Recycle all steel and concrete waste generated in construction.~~
 - ~~☐ Follow construction practices that maintain or improve air quality during construction, both for workers and people living in the air basin in which the project is being constructed.~~
 - ~~☐ Follow operations practices that maintain or improve air quality.~~
 - ~~☐ Make life cycle performance of components, systems, and materials a priority.~~
- ~~☐ Adaptively reuse existing structures and facilities whenever feasible.~~ Integrate climate adaptation and resilience principles into the design, construction, and operation of the system.
- Follow operations practices that maintain or improve air quality.

RELATED DOCUMENTS

The purpose of this document is to describe the Authority’s sustainability policy and its sustainability commitments, priorities and objectives. Supporting policies, procedures, actions, and monitoring and reporting methods that implement the Authority’s policy are presented in the *Sustainability Implementation Plan*. ~~n internal document public document.~~

FINANCIAL IMPACT

Incorporating sustainable design, ~~and construction,~~ and operations practices, ~~as well as renewable energy development and deployment,~~ into a project or program from its inception the beginning avoids several of the factors identified as adding cost to infrastructure projects, ~~the historic concern that sustainability requires a higher up front capital investment than more traditional business as usual practices.~~ ~~The Authority has factored current reported renewable energy prices for renewable energy into its operations and business plans, and considered potential premiums for high performance facilities into its cost estimates.~~ ~~The benefits of these sustainability investments will be realized in reduced ongoing operating and maintenance costs for these facilities.~~ The Authority is committed to pursuing sustainability strategies ~~and a renewable energy procurement method~~ that will be as close to cost-neutral as possible or that will have positive operating cost effects.

REPORTING AND CONTINUOUS IMPROVEMENT

The Authority will produce a sustainability report annually. Following the example of peer organizations (high-speed rail agencies and major transportation agencies), the report will contain a subset of indicators recommended by the Global Reporting Initiative (GRI), the world's most widely-used framework for sustainability reporting. ~~If required by regulation or other stakeholder interest, the Authority will undertake the steps and procedures necessary to enable its environmental and sustainability claims to be audited and verified in compliance with the International Standards Organization (ISO) 14001 standard.~~

The Authority ~~completed updated its~~ materiality assessment in ~~2015-2019~~ which engaged a range of stakeholders on ~~sustainability topics and indicators to~~ define reaffirm which topics are of high significance to the stakeholders. ~~The Authority's annual report will reflect and will publish a report that respondsrespond~~ to the indicators stakeholders identified as significant.

The Authority has included general references to sustainability in its planning, design, and construction documents, and placed specific requirements in the contract for design-build services and other contracts. The general ~~statements will be continuously refined to reflect~~ cost-effective and high-speed-rail-specific implementation strategies to be undertaken by various divisions of the Authority and its consultants. The contract requirements will be undertaken by the design-build contractor and will be monitored throughout construction. Performance data will be collected through the Authority's Environmental Mitigation Monitoring Assessment (EMMA) database. ~~This~~ These data, as well as Authority performance information, ~~will be assembled into the annual report.~~

APPLICABILITY

The Authority will apply its sustainability policy across all aspects of the planning, siting, design, construction, operations, maintenance, management, ~~and~~ governance of the high-speed rail program.

The Authority developed a Sustainability Implementation Plan to clarify how sustainability priorities will be embedded in future procurement documents, technical memoranda, design criteria, and Authority business planning and operation. This policy and the implementation plan will be communicated to all

parties involved in program implementation, [in conformance with the Authority’s adopted program management plan](#). This will help ensure that decision-making incorporates [appropriate sustainability considerations](#) in a timely fashion and that sustainability is integrated without schedule disruptions or cost escalation.

Elements of success include the following:

- Clearly understanding the system’s sustainability requirements throughout the Authority and its delivery team.
- Communicating and incorporating the above requirements into design, analysis, scopes of work, and procurement documents.
- Clearly understanding the sustainability actions required in the delivery of the system by the Design-Build (DB) contractors [and other contractors and consultants](#).
- Tracking key performance indicators throughout the design, construction, and operation to establish baselines for continuous improvement.
- [Attention Monitoring](#) during the design and construction procurement process to ensure that critical decisions are carried through, implementation is monitored, and performance is measured using indicators that can be clearly communicated to stakeholders.

Exceptions to this policy can be introduced by the Chief Executive Officer.

TERMS AND DEFINITIONS

Term	Definition
Biomass	Plant material such as trees, grasses, and crops that can be converted to heat energy to produce electricity .
CALGreen	The California Green Building Code (Title 24, Part 11) for Residential and Non-residential buildings . All eligible buildings must comply with minimum criteria (Tier 1); buildings may voluntarily demonstrate improved performance by complying with further criteria (Tier 2) .
Carbon Neutral	A designation indicating that carbon dioxide equivalent (CO₂e) emissions are identified, inventoried, and managed (reduced and/or offset) in a product, process, or action over its life cycle to ensure that there is no net release of carbon dioxide equivalent (CO₂e) .
Carbon Offsets	A financial unit of measurement (also known as a carbon credit) that represents the removal of carbon dioxide equivalents (measured in tonnes metric tons, or tCO₂e) from the atmosphere . Carbon offsetting enables organizations to compensate for their greenhouse gas emissions by funding certified GHG emissions reduction projects that either destroy, prevent or sequester emissions elsewhere.
EcoDistrict	A framework used by a neighborhood or district to implement broad commitments that accelerate neighborhood-scale sustainability . Neighborhoods using the EcoDistrict Framework commit to achieving ambitious sustainability performance goals by guiding district investments and community action, action and tracking the results over time.
Embodied Energy/Embodied Carbon	Embodied energy is the total primary energy consumed during the lifetime of a product, from extraction of raw materials, including fuels, to the end of a product’s lifetime . Different boundaries include the following:

	<p>Cradle to Grave: Includes energy <u>used</u> from manufacturing, transportation, <u>installation, deconstruction, demolition, and disposal of a product, as well as</u> energy <u>used</u> to manufacture capital equipment, <u>installation, deconstruction, demolition and disposal.</u></p> <p>Cradle to Gate: Energy, in primary form, <u>used</u> until the product leaves the factory gate.</p> <p>Cradle to Site: All energy consumed until the product has reached the point of use.</p>
Fuel Cell	A technology that uses an electromagnetic process to convert energy into electrical power. Often powered by natural gas, fuel cell power is cleaner than grid-connected power sources. In addition, hot water is produced as a by-product that can be used as a thermal resource for the building.
Greenhouse Gas (GHG)	A gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds (ISO 14064-1:2006(E)). GHGs include carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF ₆), and nitrogen trifluoride (NF ₃). GHG emissions are commonly converted into carbon dioxide equivalent (CO ₂ e)
Leadership in Energy and Environmental Design (LEED)	LEED certification is administered by the U.S. Green Building Council (USGBC) and provides independent, third-party verification that a building, home, or community was designed and built using strategies aimed at achieving high performance in the following key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.
Life Cycle Assessment (LCA)	An LCA evaluates the environmental impacts of a particular material, process, product, technology, service or activity over its entire life cycle.
Life Cycle Cost	The amortized annual cost of a product, including capital costs, installation costs, operating costs, maintenance costs, and disposal costs discounted over the lifetime of the product.
Living Building Challenge	The built environment's most rigorous sustainability performance standard developed and administered by the International Living Future Institute. Living Building Challenge is a philosophy, advocacy tool, and certification program that promotes regenerative sustainability at all development scales. It comprises seven mandatory performance areas: Place, Water, Energy, Health & Happiness, Materials, Equity, and Beauty. These are subdivided into 20 imperatives, each of which focuses on a specific sphere of influence. The emphasis is on actual and absolute performance metrics, such as net-zero water and energy, as a means of assessing performance of a building or neighborhood.
Net-Zero Energy (or Zero-Net Energy)	Net-zero (or zero-net) energy refers to a facility or system that produces as much energy through on-site renewable energy systems as it uses over the course of a year (or other defined period), and most commonly applies to buildings.
Photovoltaic (PV)	PV devices use semiconductor material to directly convert sunlight into electricity. Power is produced when sunlight strikes the semiconductor material and creates an electric current.
Post-consumer recycled content	Post-consumer material is material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item.
Pre-consumer recycled content	Pre-consumer material is material diverted from the waste stream following an industrial process, excluding reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process. Synonyms include post-industrial and secondary material.

Recycling	The series of activities—collection, separation, and processing—by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion.
Renewable Energy	Energy resources such as wind power or solar energy that can be produced indefinitely without being depleted.
Sustainability	Sustainability is the capacity to endure. Practical application of sustainable thinking recognizes how current decisions affect the capacity of current and future generations to lead healthy and rewarding lives.
Sustainable Transportation	Transportation that does not rely on the use of fossil fuels.
Volatile Organic Compounds (VOCs)	VOCs are chemicals that contain carbon molecules and are volatile enough to evaporate from a material's surface into indoor air at normal room temperatures (referred to as off-gassing). Examples of building materials that may contain VOCs include, but are not limited to solvents, paints, adhesives, carpeting, and particleboard.

SOURCES OF AUTHORITY

State Administrative Manual. Chapter 1800. Energy and Sustainability.

Executive Order B-30-15

CONTACT

Sustainability Director

REGULATIONS & MANDATORY REQUIREMENTS

The following section summarizes several of the laws and codes under which the Authority operates. This section also includes commitments and memoranda of understanding that the Authority has signed, committing it to partnerships and engagement with several stakeholders.

Laws & Codes

Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century (Proposition 1A) (2008).

Proposition 1a, which was approved by the voters of California in November 2008, contains several references that relate to sustainability:

“(g) In order to reduce impacts on communities and the environment, the alignment for the high-speed train system shall follow existing transportation or utility corridors to the extent feasible and shall be financially viable, as determined by the authority.

(h) Stations shall be located in areas with good access to local mass transit or other modes of transportation.

(i) The high-speed train system shall be planned and constructed in a manner that minimizes urban sprawl and impacts on the natural environment.

(j) Preserving wildlife corridors and mitigating impacts to wildlife movement, where feasible as determined by the authority, in order to limit the extent.”

2013 California Green Building Standards Code (CALGreen). Title 24 Part 11. CALGreen is the building code for residential and non-residential buildings. It has mandatory (Tier 1) and optional (Tier 2) elements that correspond to critical areas of high-performance design, construction, and operation. Design documents prepared by the Authority are required to meet CALGreen requirements. While the project will be a statewide system—generally planned and designed in accordance with relevant state standards, regulations and codes—many system facilities will also require coordination with local jurisdiction design requirements.

Assembly Bill 32: Global Warming Solutions Act (AB 32, Nunez). This California state law, adopted in 2006, directs the California Air Resources Board (CARB) to begin developing solutions to reduce statewide GHG emissions to 1990 levels by 2020. The high-speed system is included as a transportation measure to help achieve statewide emissions reduction.

Senate Bill 32: Global Warming Solutions Act of 2006 (SB 32, Pavley). This California state law, adopted in 2016, requires CARB to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.

Senate Bill 375: Sustainable Communities and Climate Protection Act (SB375) (Steinberg). This California state law, adopted in 2008, requires CARB to develop regional reduction targets for GHGs, and prompts the creation of regional plans to reduce emissions from vehicle use throughout the state. California’s 18 Metropolitan Planning Organizations (MPOs) have been tasked with creating Sustainable Community Strategies (SCS). The MPOs are required to develop the SCSs through integrated land use and transportation planning and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035. The Authority’s station area planning activities support and reinforce SCS planning.

Assembly Bill 75: Waste Management for State Agencies (AB 75) (Strom-Martin). This California state law, adopted in 1999, requires each state agency and each large state facility, as defined, to divert at least 25 percent of the solid waste generated by the state agency or large state facility from landfill disposal or transformation facilities by January 1, 2002, and at least 50 percent by January 1, 2004. Agencies must also designate at least one solid waste reduction and recycling coordinator to oversee the implementation of waste management plans and recycling/reuse programs and submit an annual report, for the prior calendar year, including disposal amounts and explanation of diversion activities. Reports are due by May 1 of each year. The business services manager at the Authority is the designated coordinator.

The California Long-term Energy Efficiency Strategic Plan was published in 2008 and updated in 2011 by the California Public Utilities Commission. It sets ambitious efficiency goals for the state, including achieving ~~zero-zero~~ net energy new construction in the residential sector by 2020 and commercial sector by 2030. Setting a ~~zero-zero~~ net energy goal for the design of high-speed rail facilities aligns the project with current California planning to achieve state energy targets.

Senate Bill 1029, Budget Act of 2012. This California state budget bill, which appropriated funding for the high-speed rail system, passed in July 2012. It directs the Authority to submit on or before June 30, 2013, a report approved by the Secretary of Business, Transportation and Housing, consistent with the criteria ‘in this provision’ that provides an analysis of the net impact of the high-speed rail program on the state’s GHG emissions. This report was completed and delivered to the State Legislature and can be viewed at:

http://www.hsr.ca.gov/docs/about/legislative_affairs/HSR_Reducing_CA_GHG_Emissions_2013.pdf

Senate Bill 862, Greenhouse gases: emissions reduction. This California state bill continuously appropriates 25% of the annual proceeds of the Greenhouse Gas Reduction Fund to the [authority](#) [Authority](#) for -specified components of the initial operating segment and the Phase I Blended system of the high-speed -rail project.

SB 535, De León. California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund. Is a California state bill that requires the allocation of monies from the Greenhouse Gas Reduction Fund to benefit disadvantaged communities.

AB 1352, John A. Pérez. California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund. This California state bill requires the development of a three-year Investment Plan to identify funding priorities for investing auction proceeds, and that those investments shall be used to facilitate the achievement of reductions of GHG emissions in the state and direct investment toward the most disadvantaged communities and households in the state.

AB 262, Bonta. Public contracts: bid specifications: Buy Clean California Act. This California state bill requires the Department of General Services to establish, and publish in the State Contracting Manual, a maximum acceptable global warming potential for each category of eligible materials. The bill, by January 1, 2022, and every 3 years thereafter, requires the department to review the maximum acceptable global warming potential for each category of eligible materials established, and would authorize the department to adjust that number downward for any eligible material to reflect industry improvements, as provided. Eligible materials are defined as Carbon steel rebar, Flat glass, Mineral wool board insulation, and Structural steel.

SB 350, De León. Clean Energy and Pollution Reduction Act of 2015. This California state bill requires that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50% by December 31, 2030, as provided.

SB 100, De León. California Renewables Portfolio Standard Program: emissions of greenhouse gases. This California state bill requires that the program is to achieve that 50% renewable resources target by December 31, 2026, and to achieve a 60% target by December 31, 2030. This bill also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers and 100% of electricity procured to serve all state agencies by December 31, 2045.

Executive Order B-18-12, April 2012. This executive order directs state agencies to green the state’s buildings, requiring all new state buildings and major renovations beginning design after 2025 to be constructed as [zero-zero](#)-net energy facilities and to reduce agency GHG emissions by 10%.

Executive Order B-30-15, April 2015. This executive order established a California greenhouse gas emissions target of 40% ~~of~~[below](#) 1990 levels by 2030 and requires state agencies to take climate change into account in their planning and investment decisions and employ full life-cycle cost accounting in assessing investments.

Executive Order B-55-18. This executive order set a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and maintain net negative emissions thereafter.

Commitments and MOUs

The Authority has signed the following Memoranda of Understanding and sustainability commitments.

Memorandum of Understanding (MOU) for Achieving an Environmentally Sustainable High-Speed Train System in California. In 2010, the Authority signed an MOU with partners at the federal and state levels pledging an environmentally conscious approach to the planning, design, construction and operation of the high-speed rail system.

The Authority, with the Federal Railroad Administration, U.S. Department of Housing and Urban Development (Region 9), U.S. Department of Transportation, and U.S. Environmental Protection Agency (EPA Region 9), established a partnership for sustainable system development.

The Sustainability MOU encourages the Authority to consider:

- The need to plan, site, design, construct, operate, and maintain a high-speed train system in California using environmentally preferable practices in order to:
 - Protect the health of California’s residents and preserve California’s natural resources
 - Minimize air and water pollution, energy usage, and other environmental impacts
- The signatory agencies also recognize the significant and far-reaching benefits of a well-planned system in California and share a common vision for a system that, when combined with other planning efforts to:
 - Promote sustainable housing and development patterns which recognize local goals and interests
 - Integrate station access and amenities into the fabric of surrounding neighborhoods
 - Stimulate multimodal connectivity and thereby increases options for affordable, convenient access to goods, services, and employment
 - Reduce per passenger transportation emissions across California, thereby reducing associated environmental and health impacts
 - Protect ecologically sensitive and agricultural lands

The signatory agencies work together in six specific areas: sustainable livable communities; materials selection; design and construction; renewable energy and energy efficiency; water resource management; and the development of a systemwide sustainability policy.

This MOU was referenced in the 2012 Business Plan and is included in the Authority's procurement documents. The Authority's application of the MOU objectives are further refined and defined in this- sustainability policy.

MOU for the Development of Renewable Energy on State Property. This MOU was originally adopted on December 15, 2010, by the California Energy Commission with the California Department of General Services, Department of Corrections and Rehabilitation, Department of Transportation (Caltrans), Department of Water Resources and the Department of Fish and Game. Later, the California State Lands Commission, the University of California, and California State University systems also signed the MOU (which includes an option for additional agencies to join in the future). The Authority became a signatory on April 2, 2012.

The MOU is effective through June 30, 2014. The signatories, working as a collective group, will study, plan, and develop energy-generating infrastructure on state government premises. They will work on a consistent procurement strategy and contract language for Requests for Proposals (RFP) and develop one or more statewide RFP solicitations for developers of green power on state property.

American Public Transportation Agency (APTA): APTA Sustainability Commitment

The Authority signed this commitment July 2013.

APTA stresses that sustainability comprises practices that make good business and environmental sense, balancing the economic, social and environmental needs of a community. Signatories commit to a core set of actions that include the following:

- Make sustainability a part of the organization's strategic objectives.
- Identify a sustainability champion in the organization with the requisite human and financial resources and mandates.
- Establish an awareness-raising and education program on sustainability for agency staff.
- Undertake a sustainability inventory of the agency, reporting on some basic indicators, including: water usage, criteria air pollutant emissions, GHG emissions and savings, energy use, recycling levels.

All of the core set of actions have already been undertaken and will be reported on annually.

International Union of Railways (UIC). Railway Climate Responsibility Pledge.

The Authority signed this commitment in August 2015.

This pledge included commitments to:

- reduce the Authority's specific energy consumption and CO₂ emissions, and through this contribute to the UIC "Low Carbon Rail Transport Challenge" and its global 2030/2050 targets, presented in 2014 at the UN Climate Summit;

- stimulate modal shift to rail in national and international markets, by working in partnership with key stakeholders;
- actively communicate ~~climate~~-friendly initiatives undertaken by the Authority during the year 2016 and beyond, in order to raise awareness, acceptance, and recognition of the role of sustainable transport as a part of the solution to climate change; report data on the Authority's specific energy consumption and CO₂ emissions to UIC on a regular basis, in order to promote and demonstrate the continuous improvement of railway sector at international level.

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