AIA Nevada

July 14, 2021

David Bobzien, Director
Nevada Governor's Office of Energy

Re: Support for Adoption of IECC and EV Ready Appendices

Dear Director Bobzien:

The American Institute of Architects (AIA) serves as the leading voice for architecture and design professionals and aids in advancing architects as an indispensable resource in the climate crisis fight. On behalf of AIA Nevada and its local components in Las Vegas and Northern Nevada, we strongly express our support for the adoption of the 2021 International Energy Conservation Code (IECC) in addition to adding Electric Vehicle (EV) ready Appendices.

The adoption of IECC and EV ready appendices serve as a vital step towards combating one of the biggest threats to our community, climate change. The AIA has pledged to make climate action and climate justice a national priority through the AIA 2030 Commitment, which transforms the practice of architecture to work toward carbon neutral projects. Locally, we have established a Committee on the Environment (COTE) to provide a solution-driven approach to creating design focused on sustainability and an equitable future.

We commend the Governor's office of Energy for its commitment to include greenhouse gas emissions as well as storage of energy as part of the code update to ensure we have data readily available to inform us of how we can continue to improve design in the future. We also applaud the move to include EV appendices which help create a blueprint of EV charging infrastructure which help incentivize the use of EV and allows the state to cut back and reduce greenhouse gases.

As architects we are devoted to offering our expertise and passion to this cause to make our communities more equitable and Nevada a healthier place to live. We look forward to collaborating with the Governor's Office of Energy, local government, the business community, and non-profit entities to implement these important codes on local levels in Nevada.

Sincerely,

Lance J. Kirk, AIA
AIA Nevada President

James Horvath, AIA
AIA Las Vegas President

Bradley Carlson, AIA
AIA Northern Nevada President

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From: Robert Feibleman
To: Robin Yochum
Subject: EV Ready
Date: Monday, July 12, 2021 7:00:17 AM
Attachments: image051584.png
image335804.png
image732434.png
image463127.png

Hi Robin. Is it too late to submit information for your inclusion? We did some costing analysis of and determined that the basic preparation for a parking stall is $850. That includes trenching and conduit. To complete the installation add another $1,870 per parking space. This includes wire, power distribution, service gear, and chargers. Together with contractor profit assume $3,000 minimum, in today's dollars per parking space. On a recent project used for analysis, that would have added $409,000 and $1,227,000 respectively. Presumably you already have similar data, but we wanted to see the impact to property of ours.

Also, the meeting on the 14th conflicts with another so I may not be able to listen in.

Thanks

NEVADA HAND
MORE THAN A HOME

Robert Feibleman
Executive VP of Construction

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STEVE SISOLAK
Governor

STATE OF NEVADA

DAVID BOBZIEN
Director

JENNIFER TAYLOR, ESQ.
Deputy Director,
Intergovernmental Relations

600 E. William Street, Suite 200
Carson City, NV 89701
(775) 687-7180

GOVERNOR'S
OFFICE OF ENERGY
energy.nv.gov

PUBLIC COMMENT FORM

To provide public comment, please complete and submit the following form:

- Via email to: info@energy.nv.gov OR
- Via mail to: 600 E. William Street, Suite 200
  Carson City, NV 89701

Reason for comment (meeting or regulation change, as applicable): Regulation change

Name of person commenting: Joel Levin Date: 07/14/21

Name of organization (if applicable): Plug In America

Address: 1270 S Alfred St., No. 351268

Los Angeles, CA 90035

Phone Number: 323-372-1236 Email address: jlevin@pluginamerica.org

Do you wish to be placed on the email service list for this matter to receive further notices?
( ) Yes (•) No

COMMENT:
Note: If more space is required, attachments may be included, but the top portion of this form must be completed and submitted with all comments.

Plug In America strongly supports the adoption of the proposed Electric Vehicle Ready Provisions for the 2021 International Energy Conservation Code (IECC). Inclusion of these appendices are an important step toward helping increase the access, convenience, and affordability of electric vehicles for Nevadans. We applaud the Governor's Office of Energy for paving the way for local governments to take the lead on adopting and implementing one of the recommendations in Nevada's State Climate Strategy to combat emissions from the transportation sector, and to bring the benefits of EVs to its citizens.

Note: Submitted comments are part of the public record for the rulemaking and may be posted online.

Section C108

REFERENCED STANDARDS

C108.1 Referenced Codes and Standards. The codes and standards referenced in this code shall be those listed in Chapter 6, and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections C108.1.1 and C108.1.2. Where the International Mechanical Code is referenced, the Uniform Mechanical Code may also be used. Any reference to the International Plumbing Code shall be replaced by the Uniform Plumbing Code.

Section R108

REFERENCED STANDARDS

R108.1 Referenced Standards. The codes and standards referenced in this code shall be those indicated in Chapter 5 and such codes and standards shall be considered as part the requirements of this code to the prescribed extent of each such reference and as further regulated in Section R108.1.1 and R108.1.3. Where the International Mechanical Code is referenced, the Uniform Mechanical Code may also be used. Any reference to the International Plumbing Code shall be replaced by the Uniform Plumbing Code.

June 21, 2021

Robin Yochum
Energy Program Manager
Governor's Office of Energy
600 E William Street
Carson City, NV 89701

RE: Request for Comments – Proposed 2021 International Energy Conservation Code (IECC)

Dear Ms. Yochum:

The Southern Nevada Home Builders Association (SNHBA) is the oldest and largest local trade association representing the residential construction industry in the state of Nevada. On behalf of our members and the thousands of Nevadans who work in the homebuilding industry, I extend my appreciation for the opportunity to address some of our key concerns in advance of the upcoming workshop.

SNHBA supports the adoption of International Code Council family of codes and has been an active participant in every state and local adoption of the IECC since the code's inception. The Governor's Office of Energy adoption of a model energy code is useful for jurisdictions and ensures that the development community and regulators are always discussing the latest advancements in building practices to increase efficiency. Now that the state has set greenhouse gas emission reduction targets, finding commonsense ways to reduce the purchase power needs of structures is more important than ever. However, SNHBA does have concerns with the proposed adoption of the 2021 IECC appendix that was rejected by the ICC Board of Governors and would like to ensure that there is no precedent set for the state to adopt of amendments that have been rejected by ICC.

Following the recommendation of the ICC Appeals Board, the Code Council Board determined that the electric vehicle addendum is outside the current scope and intent of the energy provisions of the IECC and should be removed from the code. Several stakeholders, including the Nevada Governor's Office of Energy participated in the appeals process. The adoption of a code amendment explicitly rejected by the ICC Board is not a precedent we would like to see in future state code adoptions. Our understanding is that the optional appendix is being adopted to provide model language that can be customized or otherwise modified by local governments seeking to adopt ordinances to increase access to electric vehicle charging. For that reason, and with the appropriate context our Association does not oppose the consideration and adoption of the code by the Governor's Office of Energy as presented.

Sincerely,

Nat Hodgson, CEO
Southern Nevada Home Builders Association

STEVE SISOLAK
Governor

STATE OF NEVADA

DAVID BOBZIEN
Director

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PUBLIC COMMENT FORM

To provide public comment, please complete and submit the following form:

- Via email to: info@energy.nv.gov OR
- Via mail to: 600 E. William Street, Suite 200
  Carson City, NV 89701

Reason for comment (meeting or regulation change, as applicable): meeting

Name of person commenting: Matt Frommer Date: 7/14/21

Name of organization (if applicable): Southwest Energy Efficiency Project

Address:

Phone Number: 908-432-1556 Email address: mfrommer@swenergy.org

Do you wish to be placed on the email service list for this matter to receive further notices?

(●) Yes ( ) No

COMMENT:

Note: If more space is required, attachments may be included, but the top portion of this form must be completed and submitted with all comments.

(See attached)

Note: Submitted comments are part of the public record for the rulemaking and may be posted online.

SWEEP
SOUTHWEST ENERGY EFFICIENCY PROJECT
Saving Money and Protecting the Environment Through More Efficient Energy Use

July 13, 2021

Robin Yochum, Energy Program Manager
Governor's Office of Energy
600 E. William St., Suite 200
Carson City, NV 89701

RE: Southwest Energy Efficiency Project Support for the Adoption of the 2021 International Energy Conservation Code and EV Ready Appendices

Dear Robin,

The Southwest Energy Efficiency Project (SWEEP) appreciates this opportunity to submit comments on the Governor's Office of Energy's efforts to adopt the 2021 International Energy Conservation Code (IECC), which is the latest, most efficient version of the IECC, for commercial and residential construction in Nevada. SWEEP also urges the state to take this opportunity to adopt electric vehicle (EV) amendments which in turn supports local municipalities with adopting local EV requirements with their building code updates.

We support the goals of Governor Sisolak and the state to achieve their climate strategy goals. The need for significant action to reduce energy demands and the production of greenhouse gases is stronger than ever before, and the 2021 IECC provides a solution that will not only address this important policy objective, but will also make buildings more resilient, reduce costs for owners and occupants, help promote local job creation, and improve the state's building infrastructure for generations to come. Updating the energy code from the 2018 IECC to the 2021 IECC presents an important leadership opportunity that will place Nevada on the forefront of building efficiency.

The IECC is the most widely adopted model energy code for residential and commercial construction, and earlier versions have been adopted in Nevada and nearly every state that has a statewide energy code. For the last fifteen years, the IECC has improved in efficiency with every new edition, providing straightforward energy and cost savings for the owners of homes and commercial buildings, and providing an important policy tool for state and local governments to achieve energy and carbon reduction goals.

Like previous editions of the code, the 2021 IECC incorporates ASHRAE Standard 90.1 by reference as a compliance option for commercial buildings, providing additional flexibility for design professionals and builders without sacrificing energy efficiency.

By federal law, the U.S. Department of Energy analyzes and provides information about energy savings for each new edition of ASHRAE Standard 90.1 for commercial construction and the IECC for residential construction. National energy savings are expected as 8% to 14% for residential construction and 12% for commercial construction.

The adoption of EV infrastructure requirements will save Nevadans millions of dollars in avoided retrofits and lower fuel and maintenance costs of EVs compared to gasoline vehicles.

EVs have emerged as a key climate strategy to reduce greenhouse gas (GHG) emissions from the transportation sector, which is largest source of carbon pollution in Nevada. Interest in EVs has grown alongside greater model availability and expanded vehicle range, and there are now well over 1.8 million EVs on the road in the U.S. In Nevada, the EV market share doubled from 1.6% in 2018 to over 3% in 2020 – the 8th highest adoption rate in the country. Most industry experts agree that we are entering a big market transformation from gas-powered vehicles to electric in the next 5-10 years.

This transformation is being accelerated by state and federal policy – over a dozen countries plus California and Massachusetts have announced plans to ban the sale of gasoline and diesel vehicles by 2035 or 2040. Twelve other states have adopted California's Zero-Emission Vehicle (ZEV) Standards requiring an increasing percentage of new vehicle sales to be electric each year and at least 3 others – Nevada, New Mexico, and Minnesota – plan to adopt the ZEV Standards in 2021 or 2022.

These government commitments have encouraged the biggest global auto manufacturers to electrify their vehicle models. By 2022, the U.S. market will have a selection of over 100 electric models including over 20 electric SUV and pickup truck models. The auto industry is investing $435 billion in electric transportation over the next decade.

Figure 1: Automaker Commitments to Electric Vehicles.

Automaker	Electrification Commitment
Audi	20 new EV models by 2025. 800,000 EV sales annually (1/3 of all sales).
BMW	25 electrified vehicle models by 2025. 15 - 25% of annual sales are electric.
Ford	40% of sales are EVs by 2030
General Motors	100% EVs by 2035
Honda	2/3 of all sales to be EV by 2030. Every model to have EV option by 2022.
Hyundai Motor Group	44 EV models by 2025
Nissan	8 new EVs by 2022. EVs make up 20-30% of US sales by 2025.
Tesla	Sold 500,000 EVs in 2020.
Toyota	Half of sales are EVs by 2025. Every model to have electric/hybrid option.
Volkswagen Group	70 new electric models by 2028. 1 million EVs sold by end of 2023.
Volvo	50% of sales are electric by 2025 (5 new BEVs by 2021)

Based on a 2019 survey, 63% of Americans are interested in EVs and 31% would consider one for their next vehicle purchase. However, the lack of access to EV charging stations continues to be a critical barrier to EV adoption. More specifically, there are significant financial and logistical hurdles for residents of multi-unit dwelling (MUD) and commercial building tenants to install EV charging stations.

A lack of pre-existing EV charging infrastructure, such as electrical panel capacity, raceways, and pre-wiring can make the installation of a new charging station cost-prohibitive for a potential EV-owner, so it's essential this equipment be required during new construction. The installation of an EV charging station is up to six times more expensive to install as a stand-alone retrofit ($905 per space) compared to new construction ($5,540 per space). In the absence of safe and convenient EV charging infrastructure, EV drivers are forced to improvise, running extension cords across sidewalks and parking lots to recharge their vehicles. By requiring EV charging infrastructure near the parking space, Nevada will address a critical safety hazard while giving consumers more choice of which vehicle they drive.

EV charging access is also an equity issue. According to the ICCT, 92% of charging ports used in metropolitan areas across the U.S. are located at the residence, but MUD residents are often left out. Such discrepancies are appearing in the data. For example, in California, the largest EV market in the U.S., nearly 50% of residents live in MUDs, yet only 20% of all EVs in the state are located at these residences, indicating a significant gap in access to EVs depending on one's living situation.

Over 40 municipalities around the country have already adopted EV infrastructure requirements for new residential and commercial buildings including Atlanta, Seattle, Denver, Boston, Fort Collins, New York, Sedona, Honolulu, Chicago, and Tucson. However, the absence of standards has created a patchwork of definitions and requirements. By adopting EV Appendices in the 2021 IECC model code, the Governor's Office of Energy will give local jurisdictions a framework to develop their own EV infrastructure parking requirements. Standards will also give builders, architects, and building officials much-needed guidance and clarity on the technical requirements for EV charging infrastructure.

EV infrastructure requirements will increase the cost of initial construction, but provide long-term savings for EV owners and commercial building owners through the avoided costs of installing EV charging infrastructure during a stand-alone retrofit.

For single-family homes, the cost to install an EV-Ready space during new construction is $50-300 depending largely on the distance between the electrical panel and the parking space. A report for the California Department of Housing and Community Development broke down the infrastructure costs for EV-Ready spaces and assuming the electrical panel has enough capacity to fit a 40A circuit, and most do, the cost to provide EV-ready infrastructure for one space is around $180. These costs decrease dramatically with economies of scale as home builders and developers purchase things like copper wire, wall outlets, conduit, and circuit breakers in bulk.

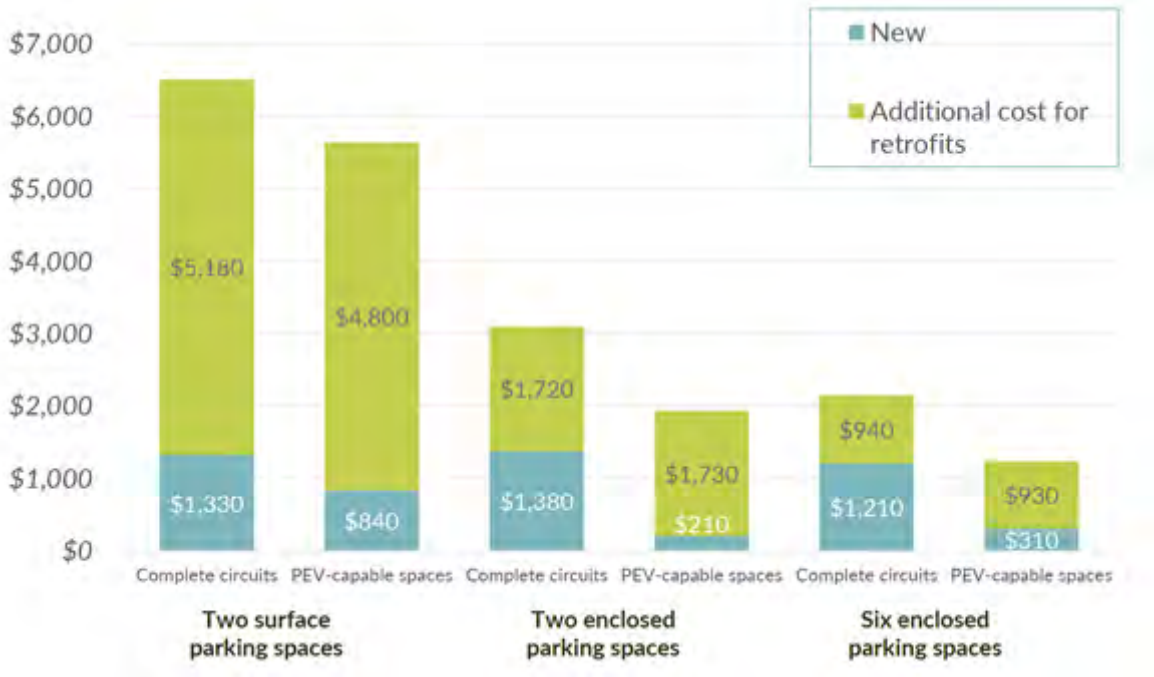
For multifamily residential and commercial buildings, the installation of an EV charging station is up to six times more expensive to install as a stand-alone retrofit compared to new construction. Several factors contribute to higher costs:

- Demolition and repair of surface parking.
- Breaking and repairing walls.
- Longer conduit runs (also referred to as raceways) – Removing and repairing 100 - 300 linear feet of surface parking to add conduit can cost $11,500 to $32,000 in demolition and repair costs.
- Upgrading electric service panels.
- Soft costs: permits, plans, inspections, and project management.

Given the momentum toward widespread EV adoption, the cost to pre-wire new buildings with EV charging infrastructure should be compared to the cost of installing the same equipment at a later date during a retrofit, rather than the cost of avoiding such equipment altogether.
One study analyzed the cost implications of California's EV infrastructure building codes, which have been in place for 5 years, and found that each EV-Capable parking space installed in a multi-unit dwelling during new construction saves $2,040 - $4,635 over the retrofit scenario. Multiply those savings by the number of new EV charging stations required to provide charging access for millions of MUD residents and the potential savings amounts to billions of dollars that can be spent elsewhere in the economy.

These costs are highly dependent on the parking lot configuration, design, and number of EV-Capable or EV-Ready parking spaces. For their code update, the City of Oakland developed a detailed cost-effectiveness report with a range of cost savings estimates for different parking scenarios:

Figure 4. Cost Savings for the City of Oakland (2020)



Definitions:
"Complete circuits" = EV-Ready parking space

"PEV-capable space" = EV-Capable parking space

The cost of EV-Capable infrastructure also varies by building size. A report prepared for the California Electric Transportation Commission measured the cost impact of a 10% EV-Capable parking requirement for small, medium, and large office and retail buildings, including cost estimates for alterations and additions. Larger buildings with more parking spaces reported a lower cost per EV-Capable parking space with economies of scale, but across all building sizes, the cost to install EV-Capable infrastructure during new construction is four to six times less expensive than during a stand-alone retrofit.

Figure 5. Estimated Cost of Installing EV Capable Parking per EV Capable Parking Space. Refer to Table 7 in the report for a more detailed breakdown of the costs by type of expense.

	Potential CALGreen 2019 Supplement - 10% of parking spaces		
	New Construction	Alterations & Additions	Stand-Alone Retrofit
Small Office/ Retail Surface Parking	$905	$925 to $1,178	$5,540
Medium Office/ School Surface Parking	$901	$928 to $1,322	$4,155
Large Office/ Retail/ Hospital Enclosed Parking	$739	$741 to $1,052	$2,779

The EV infrastructure costs may seem high, but the overall impact on building costs is low. An analysis done by the California Air Resources Board in 2018, examined the costs of adding EV Ready requirements for new multi-family developments. It found that adding panel capacity and conduit during new construction would add between 0.1% and 0.2% to the total building cost.

New residential and commercial buildings are constructed to last for 100 years or more, and so it is critical that charging infrastructure is incorporated at the pre-construction stage to ensure that new buildings can accommodate the charging needs of future EV-owners. Governments and automakers around the world have announced plans to move toward 100% electric transportation over the next two decades. It's time for Nevada to support the transition by adopting EV Appendices into the 2021 IECC model code.

SWEEP has been involved in energy code development and adoption for over 20 years and we offer assistance and experience as you work to maximize energy efficiency in Nevada. Please contact us if you have any questions or would like to discuss how SWEEP can be of assistance.

Sincerely,

SWEEP

SOUTHWEST ENERGY EFFICIENCY PROJECT

Saving Money and Protecting the Environment Through More Efficient Energy Use

Jim Meyers
Director of Buildings Program
Southwest Energy Efficiency Project (SWEEP)

Matt Frommer
Senior Transportation Associate
Southwest Energy Efficiency Project (SWEEP)