

## DOCKETED

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**2017 Draft IEPR - Tesla Comments**

*Additional submitted attachment is included below.*



November 13, 2017

Chair Weisenmiller and Energy Commission Staff  
California Energy Commission  
Dockets Office  
Re: Docket No. 17-IEPR-01  
1516 Ninth Street  
Sacramento, CA 95814-55 12

**RE: Draft 2017 Integrated Energy Policy Report (IEPR)**

Dear Chair Weisenmiller and Energy Commission Staff:

We are writing on behalf of Tesla to share our comments in response to the draft 2017 Integrated Energy Policy Report (IEPR) that was released on October 16, 2017. Tesla commends the California Energy Commission (CEC) on developing the 2017 IEPR in a timely manner, as the report covers a number of complex transportation and energy policy issues facing California. Our comments below primarily focus on sections of the draft IEPR related to Electric Vehicles (EV) and charging infrastructure deployment as well as the mechanism for calculating the expected statewide Behind-the-Meter (BTM) solar Photovoltaic (PV) capacity as part of the Energy Demand Forecast.

As the draft IEPR points out, “the transportation sector is the most significant emitter of Greenhouse Gases (GHGs) in California, accounting for more than 38 percent of in-state emissions.”<sup>1</sup> In order for California to meet many of its climate goals, transportation electrification will have to be a key strategy. Throughout the draft 2017 IEPR, there are several sections where this need is highlighted and an overview of the current and recommended policy drivers is provided. Generally, we support many of policy recommendations provided within the draft IEPR and are pleased with the emphasis on transportation electrification as envisioned by Senate Bill (SB) 350 and other state polices. To strengthen the discussion on EV charging infrastructure, we recommend adding the following items:

- Emphasize the continued need for investment in Level 2 charging infrastructure especially in Multi-Unit Dwellings (MUD) and workplaces
- Highlight opportunities for local government leadership to spur the deployment of charging infrastructure
- Underscore the importance of streamlining planning and permitting to reduce installation timelines for EV charging stations
- Discuss the potential higher power charging infrastructure needed for scaling the deployment of Heavy-Duty (HD) EVs

Distributed Energy Resources (DERs) also continue to play an important role in meeting California’s GHG emissions reductions and clean energy deployment goals. Within this context, the Energy Demand Forecast, as developed through the IEPR, provides a basis for and informs the implementation of several

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<sup>1</sup> 2017 Draft IEPR, p.32.

key California energy policies. Therefore, it is important that the underlying estimates for solar PV adoption, among other items, are based on the correct assumptions. We recommend re-evaluating the solar PV forecast within the Energy Demand Forecast to consider policy developments that may have a significant impact on the trajectory of BTM solar PV adoption in California, which currently are not reflected in the draft IEPR.

## **I. EV Deployment - Existing Recommendations**

There are a number of policy recommendations within the draft IEPR that continue to be important for spurring EV deployment. These include ongoing partnerships and coordination between state agencies, customer outreach and education, load research infrastructure cost tracking capabilities, and enhancing accessibility to charging infrastructure programs, among other items.<sup>2</sup> Specifically, we are pleased to see a recommendation for the CEC to provide a database of available incentives and programs for EVs and charging infrastructure.<sup>3</sup> With the increasing number of programs being deployed by various state agencies and utilities, it will be important to have a central resource that provides an overview of all the various infrastructure and EV deployment investments being undertaken in California. As the draft IEPR points out, “at the state level, infrastructure funding needs to be used as strategically as possible... better coordination will help leverage the results of prior infrastructure funding efforts, enable more strategic procurement, advance infrastructure development, and share best practices.”<sup>4</sup>

The draft IEPR also includes a lengthy section on Vehicle Grid Integration (VGI). VGI is a complex topic to address and as the IEPR notes “although California is on a trajectory to rapidly increase deployment of electric vehicles, its potential for use in grid management is still at least several years out.”<sup>5</sup> Additionally, there is still a need to further explore the business case for VGI, which could be done as part of the VGI Roadmap Update recommended by the draft IEPR.<sup>6</sup> Finally, there are several sections of the IEPR that pertain to VGI that reference standardized communications protocols. Since this is an ongoing discussion within the VGI Communications Protocol Working Group, some of these statements within the draft IEPR regarding agreement on standards may be premature.<sup>7</sup>

## **II. EV Deployment - Additional Recommendations**

### **A. Level 2 Charging Infrastructure Investment**

As supported by the discussion in the draft IEPR, the majority of charging today takes place at home either at Level-1 or Level-2 capacities.<sup>8</sup> The draft IEPR also notes that “this convenient access to home charging is not the norm; as only about 45 percent of all personal vehicles are parked within 20 feet of a residential electrical outlet in California.”<sup>9</sup> Tenants of MUDs often do not have access to charging and it may fall onto the building owner or the Homeowners’ Association to consider how to make their building EV-ready to the benefit of residents. In general, it is often cost-prohibitive for a single user in a multi-unit

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<sup>2</sup> 2017 Draft IEPR, p.51, p.81.

<sup>3</sup> 2017 Draft IEPR, pp.81-82.

<sup>4</sup> 2017 Draft IEPR, p.51.

<sup>5</sup> 2017 Draft IEPR, p.120.

<sup>6</sup> 2017 Draft IEPR, p.141.

<sup>7</sup> 2017 Draft IEPR. p.121,p.141.

<sup>8</sup> 2017 Draft IEPR, p.117.

<sup>9</sup> 2017 Draft IEPR, p.117.

building to get the building to install the electrical capacity (usually to Level-2) in addition to the Electric Vehicle Supply Equipment (EVSE), just to be able to charge a single car in the building parking garage. Considering when and how many spaces in a parking structure should be made EV-ready, it is more cost-effective to build during the construction phase, and allocate as many spaces as possible.<sup>10</sup> Therefore, we would like to see greater emphasis in the draft IEPR on the continued importance of investing in Level 2 charging infrastructure for existing buildings in addition to a direct recommendation for local governments to adopt local reach ordinances that can help spur EV readiness.

## **B. Local Government Leadership for EV Readiness**

There are number of efforts being undertaking by local governments across the state to spur EV readiness. Efforts include a variety of initiatives such as developing EV readiness plans and passing local ordinances to increase EV adoption and ensure sufficient infrastructure is built out. Some of these efforts are being stimulated by grants and collaboratives provided through the CEC and others are brought about through local leadership interest and climate action plans. Within the draft IEPR there is a specific recommendation for the state agencies to “partner with local utilities and governments” on transportation electrification outside of the formal regulatory process.<sup>11</sup> This recommendation should be expanded or an additional recommendation should be included that calls on local governments to continue to develop and update EV readiness plans as EV deployment increases within their communities. Furthermore, local governments have the unique opportunity to focus specifically on reach ordinances for EV readiness where appropriate and cost effective.

As it pertains to EV readiness ordinances, one approach that cities across the state are already exploring is increasing their EV make-ready requirements for new construction.<sup>12</sup> For multi-unit and non-residential projects, there are significant cost savings for deploying EV make-ready charging infrastructure during initial construction (\$300-\$800 per space) versus during retrofit (\$2,000 - \$6,000 per space).<sup>13</sup> As a result, several cities including Fremont, Oakland, and San Francisco have adopted more stringent EV make-ready ordinances that expand beyond the current 3 percent standard for MUDs proposed by the CalGreen code and are closer to 20 percent.<sup>14</sup>

## **C. EV Charging Station Permitting**

When the permitting process is complicated or time-consuming for installing an EV charging station, it directly and adversely impacts the cost, timing, and customer experience.<sup>15</sup> In 2015, California passed Assembly Bill (AB) 1236 (Chiu) to help address this issue. AB 1236 requires local jurisdictions to create an expedited permitting and inspection process for EV charging stations. Yet permitting and

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<sup>10</sup> Generally, Tesla recommends capacity to support a minimum of 20% of total parking spaces.

<sup>11</sup> 2017 Draft IEPR, p.82.

<sup>12</sup> EV make-ready refers to the ‘full circuit’ infrastructure (i.e. electrical capacity, raceway, wiring and termination points) required for EV chargers to be connected when required.

<sup>13</sup> Energy Solutions, *Plug-In Electric Vehicle Infrastructure Cost-Effectiveness Report* (2016). Available at: [http://fremontcityca.iqm2.com/Citizens/Detail\\_LegiFile.aspx?Frame=&MeetingID=1472&MediaPosition=&ID=2835&CssClass=](http://fremontcityca.iqm2.com/Citizens/Detail_LegiFile.aspx?Frame=&MeetingID=1472&MediaPosition=&ID=2835&CssClass=) .

<sup>14</sup> CALGreen Code, Residential Chapter 4, p.20. Available at: <https://codes.iccsafe.org/public/chapter/content/2057/>

<sup>15</sup> PEV Collaborative, *Streamlining the Permitting and Inspection Process for Plug-In Electric Vehicle Home Charger Installations Version 2* (2012), p.15. Available at: [http://pevcollaborative.org/sites/all/themes/pev/files/PEV\\_Permitting\\_120827.pdf](http://pevcollaborative.org/sites/all/themes/pev/files/PEV_Permitting_120827.pdf).

inspections remain an ongoing challenge, especially for commercial charging stations and Direct Current Fast Charging (DCFC) stations, and can sometimes be the longest part of a project’s overall process.

Given permitting can directly impact the deployment rate and scale of charging infrastructure and thereby EVs, we recommend adding a brief discussion within the IEPR reflecting this challenge and the continued need to implement AB 1236 more comprehensively across the state.

#### **D. Heavy Duty Vehicles**

As the draft IEPR points out, “freight vehicles present unique opportunities for target improvement—even though they represent just 3 percent of the vehicle stock in California, they are responsible for 23 percent of on-road GHG emissions.”<sup>16</sup> We agree that electrifying the HD sector including Class 8 trucks will be critical to meeting the state’s climate goals. While there are limited details available today on the future HD Class 8 electric truck market, the draft IEPR could benefit from additional focus and discussion of the HD sector.

For instance, the draft IEPR includes a discussion on higher power infrastructure for fast charging in the context of decreasing charging times for light duty vehicles.<sup>17</sup> This topic could also be applied to the future charging needs for HD electric vehicles. These vehicles have different charging needs in terms of charging power required and necessary timing for charging. It is therefore important to recognize the unique charging needs for trucks and buses.

### **III. Statewide Solar PV Installed Capacity**

Figure 32 on page 181 indicates that staff anticipates faster growth in BTM solar PV compared with the 2016 IEPR forecast, based on monthly electricity bill savings rather than lifetime net costs. While the “lifetime net costs” approach may have underestimated adoption in the past, there are several reasons to believe that the new approach significantly overestimates BTM solar PV adoption going forward, as explained in the comments submitted by the California Solar Energy Industries Association (CALSEIA).

In addition, it appears there are two errors in the draft IEPR. First, Figure 32 on page 181 is labeled “Statewide PV Installed Capacity,” which implies that it represents the capacity of all solar PV installed statewide. In reality, the chart appears to show only *behind-the-meter* installed solar PV capacity, so labels and references should be modified to indicate this distinction. Second, the text on page 181 states that “the new mid case shows an increase in capacity of around 1,800 megawatts by 2027.” Based on Figure 32, the text should read “18,000 megawatts,” not 1,800 megawatts, and it should be described as the “total installed capacity” rather than an “increase” in capacity.

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As the CEC finalizes the 2017 IEPR, Tesla recommends adding additional recommendations to spur EV deployment. These include the emphasizing the continued need for Level 2 charging infrastructure investments, providing opportunities for local government leadership on EV readiness, and highlighting the future charging infrastructure needs for HD EVs. Additionally, we recommend modifying the new approach for estimating BTM solar PV growth because it significantly overestimates adoption going forward.

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<sup>16</sup> 2017 Draft IEPR, p.34.

<sup>17</sup> 2017 Draft IEPR, p.51.

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We appreciate the opportunity to comment on the 2017 draft IEPR and look forward to continuing to work in partnership with the CEC to provide additional input.

Sincerely,

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