

**Written Testimony**  
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Thank you Mr. Chairman (Lampson) and Ranking Member Inglis.

My name is Lynda Ziegler and I am senior vice president of customer service at Southern California Edison. Thank you for the opportunity to lend our support today to your important efforts to promote advanced battery technology.

My company has been committed to the electrification of transportation for twenty years. We operate the nation's largest and most successful fleet of electric vehicles, a fleet that has traveled nearly 15 million miles on electric power. Our Electric Vehicle Technical Center, unique in the utility industry, is one of only several facilities recognized by the Department of Energy to evaluate all forms of electro-drive technology. We have ongoing research collaborations with major auto makers, battery suppliers, and both the federal and state governments.

We believe that with continued engineering advances and appropriate public policy support, the widespread use of advanced batteries in plug-in vehicles and in stationary storage applications will become one of the nation's most effective strategies in the broader effort to address energy security, reduce greenhouse gas emissions and reduce air pollutants.

In fact, the Electric Power Research Institute and the Natural Resources Defense Council recently partnered to publish one of the most comprehensive studies to date on plug-in hybrid electric vehicles. One key finding was that widespread adoption of plug-in hybrids could reduce annual emissions of greenhouse gases by more than 450 million metric tons by 2050, or the equivalent of removing 82 million passenger cars from the road. That kind of reduction is obviously a long way off, but it provides all the more incentive for us to begin today.

Electricity is virtually petroleum free, is about 25-50% the cost of a gallon of gasoline equivalent and is the only alternative transportation fuel today with a national infrastructure already in place. A recent study by the U.S. Department of Energy estimated that a little over 70% of the light duty cars and trucks on the road today could be fueled by the excess off-peak capacity that exists in the electricity system - without building a single new powerplant.

For utilities such as Southern California Edison, the challenge and the opportunity is to integrate electric transportation and their advanced batteries into a total energy system.

**Near Term**

In the near-term, the advanced high-energy battery in a plug-in vehicle could serve as a source of temporary emergency power for the home, or to occasionally help customers avoid high electricity costs during peak pricing times. We call this "vehicle-to-home".

These same advanced high-energy batteries could also be used in stationary applications. Home owners could fill a home energy battery at night using low-cost electricity and then draw from it during the high-cost part of the day to help lower their monthly utility bill.

### **Mid-term**

In the mid-term as plug-in vehicles increase in volume, using the grid's off-peak capacity at night to charge these vehicles may actually help lower customer rates by increasing the utilization of our generating plants - in effect utilities would spread their fixed costs over more kilowatt hour sales.

To evaluate new business models on these and other applications, Edison recently launched a partnership with Ford Motor Company to demonstrate and evaluate "purpose built" plug-in-hybrid Ford Escapes. Our goal is to explore the future customer values delivered through plug-in vehicles and stationary energy storage.

At the same time as the emergence of plug-in vehicles and home energy storage is the advent of advanced utility meters. Over the next five years SCE will install 5 million "next generation" advanced meters called *Edison SmartConnect* in the home of every customer in our service territory. These meters will offer our customers better information and enhanced control over their electricity usage. Our Electric Vehicle Technical Center is working with industry stakeholders to integrate the vehicle and the home and the advanced meter.

### **Long Term**

Finally, in the long-term we can imagine the potential of so-called "vehicle-to-grid" systems or the ability to move stored energy from many plug-in vehicles back up to the grid. The potential however of vehicle-to-grid is many years away and will depend on the development of all-new control technologies as part of the "smart grid" of the future.

### **The role of the federal government**

Now let me conclude with our view on the important role the federal government can play to bring the promise of electric transportation closer to reality.

In our opinion, large-scale domestic manufacturing capacity for high-energy advanced batteries is critical to the expansion of plug-in hybrid vehicle applications and complementary stationary energy storage uses. There currently exists no such capacity on a significant scale in the United States today. The federal government should provide near-term incentives to help nurture U.S. production of this critical technology.

And earlier this year HR 670, the DRIVE act, included important measures to support research, development and demonstration of advanced batteries in plug-in hybrids, battery EVs and stationary applications, as well as R&D for other aspects of electric drive technology. This language was then improved this summer by battery makers, automakers and other stakeholders, and has now passed the Senate as HR 6, and parts of the DRIVE Act have passed the House as HR 3221.

We support this language and look forward to working with your Committee to explore other effective national manufacturing and consumer incentives to set the stage for the breakthrough of plug-in vehicles and energy storage in the U.S. marketplace.

Mr. Chairman and members of the Committee, we stand committed to partnering with all auto makers, battery suppliers, stakeholders and government to help realize the vision I have laid out before you today.

Thank You.