

## The Nation's Foremost Utility Champion of Electric Transportation

For more than 20 years, Edison International's electric utility, Southern California Edison (SCE), has been the nation's leading utility champion of electric transportation advancement. SCE



*Southern California Edison has the nation's largest private fleet of electric vehicles.*

operates the largest private electric vehicle fleet, including almost 300 vehicles that have logged more than 17 million miles, reducing greenhouse gas emissions by more than 9,100 tons and pollutants by more than 2,100 tons.

### The Future – Cleaner, More Secure Transportation Fuel

Recent product announcements by Ford, GM, Toyota, Chrysler, Nissan, Mitsubishi and others have made clear that the transportation industry is turning to plug-in vehicles – battery electric vehicles and hybrids – to enhance fuel efficiency, help achieve environmental goals and address the nation's energy security challenges.



*SCE and Ford have teamed up to evaluate the Escape plug-in hybrid.*

Currently, the U.S. transportation sector is responsible for 20 percent of the nation's greenhouse gas emissions – 40 percent in California. Plug-in hybrid electric vehicles could reduce such emissions by 50 to 60 percent.

### Why Use Electricity?

- Electricity is a secure, domestic fuel.
- It costs about one-half the price of gasoline.
- Transportation with electric fuel produces far lower greenhouse gas emissions than relying on the internal combustion engine alone.
- It is generated with multiple energy sources, including renewable generation such as wind and solar.
- The nation's electric grid is the only source of alternative transportation fuel with a ready-made infrastructure connecting every home and business.
- According to a recent U.S. Department of Energy study, 73 percent of all the light-duty cars and trucks on the road today could be fueled during off-peak hours without building a single power plant or stringing one new power line.

### SCE's Vision – Filling Up at the Plug Instead of the Pump

SCE electric transportation engineers lead the national evaluation of how the U.S. might someday fuel light cars and trucks from the power grid. SCE supported independent research released by the Electric Power Research Institute and the Natural Resources Defense Council. The study concluded that by 2050 the widespread adoption of plug-in hybrid electric vehicles could reduce annual vehicle emissions of greenhouse gases by more than 450 million metric tons, the equivalent of removing one-third of today's light duty cars and trucks from the road.

### Advancing Electric Transportation Research

**Light-Duty Plug-In Hybrid Development** – SCE is collaborating with Ford, GM and Daimler AG, the University of California, Irvine, the Electric Power Research Institute, the Department of Energy and the South Coast Air Quality Management District to evaluate the potential impact and help support the development of the next generation of electric transportation technologies.

**Medium-Duty Plug-In Hybrid Development** – SCE has joined forces with the Electric Power Research Institute, Ford and Eaton to establish a plug-in hybrid utility bucket truck evaluation and demonstration program with prototypes-built on the Ford F550 chassis - now in prototype evaluation at SCE.

**Heavy-Duty Hybrid Utility Bucket Truck Development** – SCE helped create the nation's first plug-in hybrid heavy-duty utility bucket truck. The project spurred a 14-utility consortium that partnered with industry to develop a diesel hybrid production version delivering a 30 percent reduction in fuel consumption. SCE will acquire up to 20 of these hybrid utility bucket trucks in 2009 for use in its street light maintenance fleet.

### Hydrogen Fuel Cell Development

SCE has joined with Chevron, Hyundai and UTC Fuel Cells in a Department of Energy program to advance the technologies needed for producing, storing and delivering hydrogen to fuel transportation.



*The SCE-Chevron hydrogen energy station opened in May 2007.*

**Technology Testing** – SCE's Electric Vehicle Technical Center is a nationally recognized, ISO 9001 Registered testing facility for all forms of electro-drive and advanced energy storage systems.

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