Vehicle - Grid Integration (VGI) is a key concept that can flip the integration of 5 million cars onto California’s grid from a problem to an opportunity. California’s VGI Working Group describes VGI as “the many ways in which a vehicle can provide benefits or services to the grid, to society, the EV driver, or parking lot site host by optimizing plug-in electric vehicle (PEV) interaction with the electrical grid.”1 VGI includes:

* active management of electricity (e.g., bi-directional management, such as vehicle-to-grid power flow [also known as V2G];
* unidirectional management such as managed charging [also known as V1G]) and/or active management of charging levels by ramping up or down charging; and
* passive solutions such as customer response to existing rates, design of improved utility rates (e.g. time-of-use (TOU) charges, demand charges and customer fees), design of the grid to accommodate EVs while reducing grid impacts to the degree possible, and education or incentives to encourage charging technology or charging level (e.g. rebates for lower level charging, modifying current allowance policy).