Envision a time when 1,000 charging stations for electric cars sprout at parking garages, shopping centers and other public spots across the Bay Area. Some taxis, rather than filling up with gas or waiting for a recharge, will simply swap their battery out at a changing station. Home chargers will be able to monitor utility rates while you sleep and recharge your electric car's battery at the lowest price.

That time, San Francisco environmental officials say, is one year away, thanks in part to almost $14 million in grants for regional electric vehicle projects that the Metropolitan Transportation Commission is expected to award at its meeting today.

Paired with matching funds from private businesses, nonprofits and state and local governments, the grants will pay for more than $30 million worth of projects designed to make driving electric cars convenient, practical and common, backer say.

"Years from now, when electric vehicles and the infrastructure to support them have become commonplace, I believe we will look back on the Bay Area's leadership and investment today as a tipping point for electric vehicles in America," San Francisco Mayor Gavin Newsom said.

The idea is to make the Bay Area the national demonstration model for such vehicles - installing charging stations, increasing electric vehicle use and fueling public interest - as automakers prepare to roll out cars such as the all-electric Nissan Leaf and the plug-in hybrid Chevrolet Volt.

The grant money is federal dollars channeled through the Metropolitan Transportation Commission. It's part of a broader series of programs the Bay Area's transportation planning and financing agency is backing to cut greenhouse gas emissions, including a regional bike sharing plan.

Local government officials hope to educate the public on the use and benefits of electric vehicles while consumers grapple with concerns about their range, charging options and cost.

"Once people see they can fill their car for $3 as opposed to $55, this will start to take off," said Johanna Gregory Partin, Newsom's point person on climate protection initiatives.

**Cheaper to operate**

Electric vehicles costs about 3 cents a mile to operate compared with 13 cents or more a mile for a combustion-engine car fueling up on gas at $3 per gallon, according to utility industry and other studies.
The initiatives come almost two years after Newsom and his counterparts from San Jose and Oakland, Chuck Reed and Ron Dellums, announced at San Francisco City Hall they intended to back the creation of the nation's first electric vehicle network with the help Palo Alto company Better Place, which said its network of battery-swap stations will cover the Bay Area by 2012.

Transportation accounts for more than half of the Bay Area's greenhouse gas emissions.

Full-electric vehicles create no emissions and can be charged by renewable energy sources such as solar or wind. Their true environmental footprint depends on the source of the energy used to power them, and there are concerns about their practicality.

Fully recharging a battery can take hours, depending on the type of station, and the vehicles can go varying distances on a charged battery. Nissan, for example, says that depending on speed, weather and air conditioning use, the Leaf will get anywhere from 62 to 138 miles per charge.

**Charging stations**

The grant money will go toward adding electric vehicles to taxi and municipal government fleets while establishing a network of charging stations, starting on publicly owned property such as parking garages, said Robert Hayden, the electric vehicle guru at San Francisco's Department of the Environment. Officials plan to have 500 to 1,000 publicly accessible charging stations by the end of 2011, he said.

The grant money also includes $7 million to fund 61 electric taxis with switchable batteries and four battery switch stations in San Francisco and San Jose - technology pioneered by Better Place.

**By the numbers**

Almost $14 million in grants from the Metropolitan Transportation Commission, matched by more in government and private funds, are to fund $30 million in electric vehicle projects, including:

- $7 million grant ($20 million total) for 61 switchable-battery electric taxis and four battery switch stations, including at least one each in San Francisco and San Jose and at San Francisco International Airport. Includes public education on the technology.

- $2.8 million grant ($5 million total) for 90 electric vehicles for 11 local government agencies to install 90 chargers accessible to those agencies and the public. Includes analysis of vehicle performance and other elements.

- $2.4 million grant (total value to be determined) for regional strategies for electric vehicles infrastructure, such as permit streamlining for charger installation and electrifying car share programs.

- $1.7 million grant ($2.4 million total) to help electrify City CarShare service, including buying 12 full-electric Nissan Leafs, 12 plug-in hybrid Priuses and five neighborhood electric vehicles, and installing 24 chargers at a dozen or so locations.

Source: Metropolitan Transportation Commission

E-mail John Coté at jcote@sfchronicle.com.