

**City of Culver City, California  
Agenda Item Report**

Meeting Date: 05/11/2015	Item Number: <u>C-6</u>
<b>CITY COUNCIL AGENDA ITEM: 1) Approval of an 18-Month Agreement with NRG for 1A) the Installation of Electric Vehicle Charging Stations in the Ince Parking Structure for Public Use, and 1B) the Installation of Electric Vehicle Charging Stations at City Hall for Employee Use; 2) Approval of a Five-Year Agreement with NRG for the Installation of Electric Vehicle Charging Stations at City Hall for Public Use; and 3) Approval of Providing an Incentive from Non-General Funds to Employees who Charge their Electric Vehicles at Work as Part of the City's Existing Rideshare/Emission Reduction Program (which Incentive would Replace an Existing Incentive to Purchase an Electric Vehicle).</b>	
Contact Person/Dept.: Joe Susca/Public Works-Administration	Phone Number: 310-253-5636
Fiscal Impact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	General Fund: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Public Hearing: <input type="checkbox"/>	Action Item: <input type="checkbox"/> Attachments: <input type="checkbox"/>
Commission Action Required: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Date: _____
Public Notification: (E-Mail) Agenda and Meetings – City Council (05/06/15); NRG (04/21/15); 107 City employees who responded to the electric vehicle survey (05/06/15).	
Department Approval: Charles D. Herbertson (05/05/15)	City Attorney Approval: Carol Schwab (by H. Baker) (05/05/15)
Chief Financial Officer Approval: Jeff Muir (by M. Noller) (05/05/15)	City Manager Approval:

**RECOMMENDATION:**

Staff recommends the City Council:

1. Approve an 18-month agreement with NRG to:
  - A. install three electric vehicle charging stations at the Ince Parking Structure (located at 9099 Washington Boulevard) for shared public use; and
  - B. install eight electric vehicle charging stations at City Hall for employee use; and
2. Approve a five year agreement with NRG to install two electric vehicle charging stations at City Hall for public use; and
3. Approve providing City employees an incentive to charge their electric vehicles at work as part of the City's Emission Reduction Program.

**BACKGROUND:**

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An Electric Vehicle (EV) is powered exclusively by an electric motor using batteries that are charged primarily from electricity supplied by the electric grid. A Plug-In Hybrid Electric Vehicle (PHEV) is powered by an electric motor with the vehicle's batteries being charged by the electric grid and/or a gasoline engine. The electric motor in a PHEV may or may not work in conjunction with a gasoline engine to propel the vehicle. Depending on the make and model, the battery-only range of most PHEV's is 21-38 miles and an EV is 84 to 300 miles.

Most EVs and PHEVs receive their electricity from Level 1, 2, or 3 charging stations. A Level 1 charging station is a standard 120-volt circuit found in all homes and offices. A Level 2 charging station is a 240-volt circuit that many houses use to power their central air conditioning systems. A Level 3 charging station is a 480-volt circuit that is typically used in manufacturing.

The average time to fully charge the batteries of a fully depleted EV/ PHEV battery varies as follows:

<b>Vehicle Type</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
EV	8-14 hours	4-8 hours	15-50 minutes
PHEV	4-8 hours	2-4 hours	4-7 minutes

Nearly all EV/PHEVs on the road are designed to charge their vehicles with either a Level 1 or 2 station. However, not all make/models are equipped to use a Level 3 station.

**DISCUSSION:**

Staff evaluated two other firms that provide EV/PHEV charging station installations and determined that NRG was the most qualified and the least costly to the City. Unlike their competition, NRG received a grant from the California Public Utilities Commission (CPUC) to cover most of the capital cost required to install the EV/PHEV charging stations (Charging Stations), which significantly reduces the City's out of pocket contribution for their installation and use.<sup>1</sup> Headquartered in Princeton, New Jersey, NRG was formed in 2003 and has over 7,700 employees. NRG's primary mission is to install Charging Stations nationwide for employee and shared public use. Currently NRG has 36 Charging Stations installed in Southern California with plans to increase the amount to 150 within the next five years.<sup>2</sup> Using the PlugShare Smart Phone Application, individuals are able to view where NRG and other public Charging Stations are located and to determine if they are currently available to use.

Following is a summary of the terms and conditions of three NRG agreements to install Charging Stations at the Ince Parking Structure and City Hall.

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Ince Parking Structure for Shared Public Use:

1. An 18-month initial term that continues month-to-month thereafter until either party terminates.
2. NRG will install, own, operate, and maintain the Charging Station equipment at NRG expense.
3. NRG will install a separate electrical meter and will receive and pay their SCE invoices directly for their use of electricity.
4. Three parking spaces will be reserved on the first level for the installation of one Level 2 and one dual Level 3 Charging Station.
5. Parking signs will be posted that limit parking to two hours for the Level 2 space and 1 hour for each Level 3 space.
6. The Charging Stations may be used by NRG subscribers or any member of the public who has a debit or credit card.<sup>3</sup>
7. NRG agrees to indemnify and hold the City harmless from liability and will name the City as additional insured in their insurance policy.
8. NRG will include the Ince Parking Structure in their marketing materials and will provide the stations' real time availability via the PlugShare Smart Phone Application.

City Hall for Shared Public Use:

The CPUC grant provides NRG funding to install one set of shared public Charging Stations every five square miles. As City Hall is less than five miles away from the Ince Parking Structure, it is disqualified from receiving funds from the same grant program. However, given the current and expected increase in demand for Charging Stations, staff has negotiated the following terms with NRG:

1. A 5-year lease at a City cost of \$39.95 per month (\$2,397 over the term).
2. NRG will install the dual Charging Station at a one-time cost of \$4,850 to the City.
3. NRG will install a single use Level 2 Charging Station that is accessible by two adjacent parking spaces (one ADA compliant and the other a regular space) that is located in City Hall's visitor parking area.
4. NRG owns, operates, and maintains the Charging Station equipment at NRG expense.
5. NRG will share use of the City's electric meter, and the City will receive 90% of all revenue generated by the two charging stations. The amount of total revenue received will depend on the volume of vehicles that use the Charging Stations. However, NRG anticipates that at a minimum, the City will recover its electrical and monthly leasing costs.
6. The Charging Stations may be used by NRG subscribers or any member of the public who has a debit or credit card.
7. NRG agrees to indemnify and hold the City harmless from liability and will name the City as additional insured in their insurance policy.

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8. NRG will include the Charging Station location in their marketing materials and will provide their real time availability via the PlugShare Smart Phone Application.

City Hall for Employees:

- An 18-month initial term that continues month-to-month thereafter until either party terminates.
- NRG will share use of City Hall's electric meter. However, NRG will track and reimburse the City for 100% of the cost for their use of electricity.
- Eight parking spaces will be pre-wired to accommodate Level 2 Charging Stations with dedicated NRG electrical circuits. However, the Charging Station equipment will not be installed until and unless an employee subscribes to NRG.
- NRG will charge each employee a \$99 one-time activation fee, a \$30/month subscription fee, and \$1.00 per hour for their use of electricity.<sup>4</sup> NRG will remit 100% of the employee's electrical use fees to reimburse the City. NRG estimates that an employee who lives 16 miles from work will pay approximately \$20 per month for electricity in addition to the \$30 per month subscription fee for a total of \$50 per month.

Emission Reduction Program:

According to Southern California Edison (SCE), 20% of California's electricity is currently generated by renewable sources. By law, SCE's renewable sources will increase to 50% by 2030.<sup>5</sup> As a result, using the electrical grid to charge EV/PHEV batteries emits significantly less pollutants into the air when compared to running a gasoline engine.

In recognition of the reduced emissions that EV/PHEV's generate and to decrease the nation's dependence on foreign oil, EV/PHEV buyers receive State rebates of up to \$2,500 and a Federal tax credit ranging from \$2,500 to \$7,500, depending on the size and range of the battery.<sup>6</sup> In California, some PHEV and all EV drivers are allowed use of High Occupancy Vehicle (HOV aka Car Pool Lanes) driving lanes through the issuance of decals from the Department of Motor Vehicles (DMV).<sup>7</sup> Under the current program that expires in 2019, the DMV will issue green decals to up to 70,000 PHEV drivers and an unlimited amount of white decals to EV drivers that when affixed to their rear bumper, allows them use of HOV driving lanes.<sup>8</sup>

In Southern California, Rule 2202 of the Southern California Air Quality Management District (SQAQMD) requires employers with more than 250 employees to pay a fee per employee or to implement an Employee Commute Emission Reduction Program (Emission Reduction Program). Rule 2202 was adopted by the SCAQMD in 1995 and is designed to meet the ambient air quality standards mandated by the Federal Clean Air Act of 1963. An additional benefit of an Emission Reduction Program is reduced traffic congestion as it decreases the number of single occupancy vehicles

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on the road. As a mobile source emission control strategy, Rule 2202 is intended to reduce vehicle miles traveled and increase the Average Vehicle Ridership (AVR) of work related trips. The City's Emission Reduction Program AVR target is 1.5 and currently, the City maintains an AVR of nearly 1.6.

The City's Emission Reduction Program currently provides the following incentives to employees:

1. \$60 per quarter to individuals who walk, bike, or carpool to work a minimum of six times over each two-week pay period.
2. Up to \$200 per quarter for monthly bus and train passes.
3. A \$50 one-time incentive to employees who lease or purchase an EV.

In recognition of the reduced air pollution generated by EV/PHEV vehicles, the SCAQMD allows employers to receive emission reduction credits for all EVs and some PHEVs as part of an employer's Emission Reduction Program. Currently, only those PHEVs with a battery-only range equal to or exceeds an employee's one-way trip to work qualify to receive an emission reduction credit. In recognition that many employers have or will soon be installing EV/PHEV Charging Stations for employee use at the workplace, the SCAQMD is currently developing an additional method of calculating emission reduction credits as an option for employers to use. The alternative method of calculating emission reduction credits is expected to include a credit for all PHEVs, regardless of their battery-only range, and is expected to be adopted by the SCAQMD Board over the next several months. Once adopted, employers with Emission Reduction Programs will be notified and trained on how to calculate emission reduction credits using the alternative method.

Employee Survey:

According to the 2013 Best Practices for Workplace Charging Report, 90% of employees commute a distance of 35 miles or less to work.<sup>9</sup> EVs range from 84 to 300 miles when fully charged. However, a PHEV's battery-only range averages 21 to 38 miles when fully charged.<sup>10</sup> If a PHEV arrives to work each day with no battery charge left, then the average cost to fully charge it at work would be \$25 per month.<sup>11</sup>

Staff released an EV/PHEV survey to all employees to determine who currently drives an EV/PHEV and who is contemplating their lease or purchase within the next three years. 107 employees responded and, of those, 2 currently drive an EV and 6 drive a PHEV and all 8 currently charge their vehicles at home. An additional 17 employees indicated they are considering the lease or purchase of an EV and 42 a PHEV within the next three years for a total of 59. All 59 respondents indicated they were interested in charging at work. Of those, 32 indicated a willingness to pay the associated NRG subscription fees (6) or the \$25 per month PHEV charging fee (26).

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Generally speaking, the survey revealed that those employees with longer commuting distances were interested in charging at work and are willing to pay the associated fee to do so, particularly those PHEV drivers whose batteries are depleted by the time they arrive to work.

PHEV Level 1 Charging Stations at City Hall:

NRG indicates that their public and employee subscription programs are designed to meet the needs of EV drivers. Due to their limited battery storage capability, NRG's subscription based fees are not economically feasible for many PHEV drivers. In addition to implementing the NRG program for EV drivers, staff recommends the City Council implement an additional employee charging station program specifically designed to meet the needs of PHEV drivers. Such a program would be administered by staff.

Currently, City Hall's P2 parking level has six existing Level 1 circuits that are available to charge up to six PHEV vehicles simultaneously with a maximum of only one car per circuit. To minimize trip hazards from power cords that may be strewn along pedestrian walkways, however, additional conduits that create outlets for these circuits to P2's perimeter walls will need to be installed. This work can be completed by the City's in-house electrician.

The City has no mechanism in place to meter the actual use of electricity at each of the proposed Level 1 stations. However, given the limited battery capacity of PHEVs, staff recommends the City Council establish the average cost of \$75 per quarter as the fee for their use by employees, which rate will be adjusted by staff on July 1 of each year to reflect SCE rate changes.

Option:

- Staff recommends the City Council approve a \$60 per quarter incentive to EV and eligible PHEV drivers who drive their vehicle to work a minimum of six times over each two week pay period as part of the City's Emission Reduction Program. If the City Council elects to implement this incentive, staff recommends it replace the existing \$50 one-time incentive provided to employees who lease or purchase an EV.<sup>12</sup> Incentives would be available on a first-come, first served basis and be subject to discontinuation upon exhaustion of funding from the SCAQMD.

Staff recommends the City Council approve the three NRG agreements and to implement a PHEV pilot program whose participation is limited to City Hall's six PHEV charging stations. Total participation by employees will be limited to 14 (eight EV and six PHEV). If over time, participation wanes or a waiting list is created, SCAQMD rules change, SCE usage fees increase, or EV/PHEV technology advances, staff will return to the City Council with a recommendation to alter, expand, or discontinue the EV/PHEV charging station program.<sup>13</sup>

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Establishing an EV/PHEV charging station program will encourage members of the public and City employees to purchase EV/PHEV vehicles that reduce greenhouse gases and advances the City's sustainability objectives.<sup>14</sup>

If approved as recommended, the City Manager shall issue an Administrative Procedure Related to EV/PHEV Charging Station Use by Employees that addresses Charging Station assignments, waiting lists, fees, and usage restrictions.

**FISCAL ANALYSIS:**

There is no cost to approve the two NRG agreements for eight EV charging stations for employee use at City Hall and three EV charging stations at the Ince Parking Structure for shared public use. The NRG agreement for two shared public charging stations at City Hall's visitor parking area will cost \$39.95 per month over 60 months for a total of \$2,400. NRG estimates that the 90% revenue received from these stations by the City will meet or exceed the City's initial installation cost and ongoing lease payments.

The NRG agreement for the two public charging stations at City Hall will have an initial \$4,850 equipment and installation cost. A minor amount of conduit and electrical outlet material costs will be necessary to activate City Hall's six PHEV circuits on P2. Sufficient funds exist in CIP No. PF003-City Hall EV Charging Stations to cover these costs.

Incentives provided to employees as part of the City's Emission Reduction Program are provided by Prop C Local Return funds (no City General Funds are used). The City's Emission Reduction Program incentives currently amount to \$35,000 annually and each year, nearly all the funds are depleted. If the City Council elects to implement the optional \$60/quarter incentive to employees as part of its Emission Reduction Program, staff anticipates the incentive budget will increase by \$1,920 to approximately \$37,000 in Fiscal Year 2015/2016. If all 14 EV/PHEV charging stations become occupied however, the incentive could increase by \$3,360 annually to a total of \$38,360 in future fiscal years.<sup>15</sup>

**MOTIONS:**

That the City Council:

1. Approve an 18-month agreement with NRG for Three Electric Vehicle Charging Stations at the Ince Parking Structure for public use; and,
2. Approve an 18-month agreement with NRG for Eight Electric Vehicle Charging Stations at City Hall for employee use; and,

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3. Approve a five year agreement with NRG for Two Electric Vehicle Charging Stations at City Hall for shared public use; and,
4. Approve an In-House Plug-In Hybrid Electric Vehicle program providing up to six employees the ability to charge their vehicles at City Hall at an employee cost of \$75 per quarter, which is adjusted annually to reflect SCE rate increases; and
  - a. Approve an EV and PHEV Emission Reduction Program incentive amounting to \$60 per employee per quarter in replacement of the existing \$50 one-time EV purchase incentive.
5. Authorize the City Attorney to review/prepare the necessary documents; and
6. Authorize the City Manager to execute such documents on behalf of the City.

**NOTES:**

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<sup>1</sup>Under an Enron settlement agreement (NRG purchased Enron) with the CPUC, NRG agreed to invest \$102.5 million in EV charging projects in California, primarily:

- \$50.5 million for public EV charging (Level 2 and 3 stations) at 200 sites in Los Angeles, San Francisco, San Diego and the San Joaquin Valley; and
- \$40 million to perform electrical upgrades supporting 10,000 parking spaces at apartment communities, workplaces and certain other locations.

<sup>2</sup>Currently, through an NRG agreement with Nissan and BMW, Nissan Leaf owners are provided two years of free charging and BMW i3 owners are provided one year of free charging at public NRG stations.

<sup>3</sup>NRG's rates for a 30-minute charging session at a **Level 3** station (which will provide many empty EV's an 80% charge) is \$9.95 for non-subscribers. Depending on their monthly subscription plan, NRG subscribers' will pay from \$3.00 to \$6.00. NRG's rates for charging at a **Level 2** station are \$2.00 per hour for non-subscribers and depending on their plan, from \$1.00 to \$1.50 per hour for NRG subscribers.

<sup>4</sup>The rate an employee pays to charge at home is tiered and will vary by provider (SCE or LADWP). The \$1.00 per hour rate to charge at a Level 2 station however, is comparable to the cost to charge at home and is equivalent to the City's cost to charge at work.

<sup>5</sup>Currently, the remaining 80% of electricity in California is generated primarily by natural gas fired plants. The increase in renewable sources of electricity to 50% will be accomplished primarily through new solar and wind farms located in the Tehachapi Mountains and the Mojave Desert.

<sup>6</sup>According to the U.S. Energy Information Administration, in the United States, the net import of crude oil and petroleum products (imports minus exports) accounted for 27% of the petroleum consumed in the United States, the lowest annual average since 1985. For more information on Federal and State incentives visit: <http://www.plugincars.com/federal-and-local-incentives-plug-hybrids-and-electric-cars.html>

<sup>7</sup>For more information about California's HOV program, visit: <http://www.arb.ca.gov/msprog/carpool/carpool.htm>

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<sup>8</sup>The State's distribution of the original yellow decals for hybrid vehicles was discontinued in 2011 and was subsequently replaced by the green (PHEV) and white (EV) decal program.

<sup>9</sup>The 2013 Best Practices for Workplace Charging Report was prepared by CALSTART, a non-profit organization that works to develop advanced transportation technologies to help clean the air, lessen the nation's dependence on foreign oil, reduce global warming and create jobs. Preparation of the Report was funded by grants received from the Air Quality Management Districts of Southern California and the San Francisco Bay Area.

<sup>10</sup>An outlier when compared to other PHEV's, the BMW i3 REX has a battery-only range of 72 miles.

<sup>11</sup>Assuming an individual arrives to work in a PHEV whose battery is fully depleted each day, then a 21-mile range battery would use 7.6 kWh to fully charge.  $7.6 \text{ kWh} \times 14 \text{ cents per kWh} = \$1.06 \text{ per day} \times 18 \text{ workdays (a 9/80 schedule)} = \$19.08 \text{ per month}$ . A 38-mile range battery uses 13.68 kWh to charge  $\times 14 \text{ cents per kWh} = \$1.92 \text{ per day} \times 18 \text{ workdays} = \$34.56 \text{ per month}$ .  $\$19.08 (7.6 \text{ kWh}) + \$34.56 (13.68 \text{ kWh}) = \$51.58 \text{ divided by } 2 = \$25.79 \text{ per month on average}$ . Excludes a reduction in the number of charging days due to absenteeism caused by holidays, sick time and vacations.

<sup>12</sup>80% of employers who responded to the Department of Energy's 2014 Workplace Charging Challenge Annual Survey provided free charging access to their employees. The remaining 20% required employees to pay a fee, which was either fixed (5%) or based on usage, such as electricity or time (15%).

<sup>13</sup>It is recognized that EV and PHEV technology is rapidly changing and that advancements in battery design will increase a PHEV battery-only range that may result in staff recommending the City Council alter the proposed \$25 per month PHEV usage fee. Additionally, SQAQMD rules and regulations for employer EV/PHEV emission reduction credits are currently under review that will provide employers an additional option when calculating EV/PHEV emission reduction credits. Further, the rate the City pays SCE per kWh is subject to regular rate increases that are approved by the CPUC. As such, staff may recommend the City Council consider amending, expanding or eliminating the PHEV program to more accurately reflect the City's cost to continue to offer this program to its employees.

<sup>14</sup>In support of the Federal Clean Air Act of 1963, on October 12, 2012, the City Council passed a Resolution in support of reducing carbon dioxide and greenhouse gases that contribute to climate change, which the Environmental Protection Agency's authority to regulate was being challenged in court at the time. On November 27, 2006 the City Council established a City Council Sustainability Subcommittee, directed staff to prepare a Sustainable Community Plan (SCP) as part of the City's General Plan update and approved submission of a \$25,000 grant application with the American Institute of Architects to hire a Sustainable Design Assessment Team (SDAT) to participate in development of the SCP. The grant was awarded and SDAT worked with staff and the Sustainability Subcommittee to prepare an outline for the SCP that was presented to the public through a series of community meetings to obtain their feedback. The goal of a SCP is to guide policy decisions while considering long-term impacts to the natural environment and economic health of the Culver City community. Elements of an SCP include conservation of renewable and non-renewable resources and though a SCP has not been adopted by the City Council, the SCP outline SDAT prepared has provided the City guidance when considering projects and adopting policies that further the City's sustainability objectives. Installation of electric vehicle charging stations will encourage the lease or purchase of EV/PHEV vehicles that will result in reducing fuel consumption, greenhouse gases and air pollution.

<sup>15</sup>\$60 per quarter  $\times$  four quarters = \$240 annually per employee. If all eight existing EV/PHEV drivers participate in the program, then  $\$240 \times$  eight employees = \$1,920. If all 14 charging stations are occupied, then  $14 \times$  \$240 annual incentive = \$3,360.