DESERT BREEZE

VOLUME VII ISSUE II JUNE 2019

Zero Emission Vehicle - Incentives -

Part 2 of 4

The market for Electric Vehicles (EVs) is now mainstream. Every year, new models are introduced, feature the latest technology, and more EVs are sold. This is good news for states and regions searching for ways to curb emissions of air pollution, including Greenhouse Gases. In order to foster accelerating progress toward compliance with several different but somewhat overlapping regulatory requirements, the State of California is actively promoting, with incentives, the electrification of the California fleet. Plug-in Electric Vehicles (PEVs) include Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs). BEVs may also be referred to as Zero Emission Vehicles (ZEVs).

The Clean Vehicle Rebate Program (CVRP) is developed and approved by the California Air Resources Board (CARB), and currently administered by the Center for Sustainable Energy (CSE). Some local entities, such as air districts and utility companies also offer incentives. Aggregated, these incentives can be significant, lowering the financial barrier to entry for the less affluent. The following is a list of some (not all) of the available programs (with a focus on ZEVs, and the local Eastern Kern APCD region).

State Approved Financing Programs

Property-Assessed Clean Energy (PACE) - PACE financing allows property owners to borrow funds to pay for energy improvements, including purchasing and installing Electric Vehicle Service Equipment (EVSE). The borrower repays over a defined period of time through a special assessment on the property.

National Vehicle Incentives

Federal Tax Credit – up to $7,500 for PHEVs; Tesla and General Motors have already sold enough PHEVs to enter a year-long tax credit phase-out period.

Employee Corporate Incentives

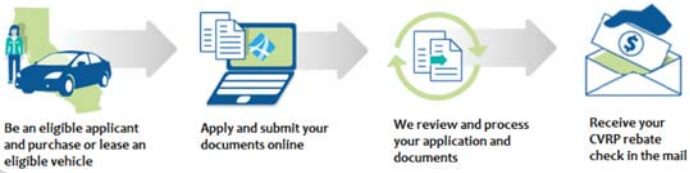
State Issued Grants

Clean Vehicle Assistance Program – provides grants up to $5,000 and financing to help low-income Californians purchase a new or used hybrid or electric vehicle.

State Issued Rebates

Clean Vehicle Rebate Program – Up to $5,000 for the purchase or lease of ZEVs or PHEVs and an additional $2,000 for low-income households.

The Consumer Assistance Program (CAP) – Up to $1,500 for qualified vehicle retirement.



Locally Issued Rebates

Antelope Valley Air Quality Management District - $1,000 for Alternative Fuel Vehicles

Southern California Edison - $450 for New or Used EVs

Pacific Gas and Electric - $800 for PEVs

San Joaquin Valley APCD - Up to $3,000 for eligible vehicles

The City of Riverside provides eligible residents a rebate of up to $500 who purchase or lease new electric vehicles, motorcycles, or Neighborhood Electric Vehicles (NEVs).

Both the **South Coast AQMD** and the **San Joaquin Valley APCD** provide qualifying residents up to $9,500 to help low-income consumers replace older vehicles.

Locally Issued Vouchers

Eastern Kern APCD - Up to $3,000 for the purchase of a new, eligible vehicle.

The District's DMV Grant Vehicle Voucher Program is ongoing and provides incentive for the purchase of a new, eligible lower-emitting vehicle. The District is considering upgrading the existing program to include Super Ultra-Low Emission Vehicles (SULEV) for the 2019-2020 fiscal year. Applications are processed first-come first-served and vouchers are issued accordingly, until the yearly funding allocation is exhausted. Voucher awards and associated new vehicle emission classification requirements are as follows:

$3,000 for purchase of a Zero Emission Vehicle (ZEV)

$2,000 for purchase of a Transitional Zero Emission Vehicle (TZEV) or Partial Zero Emission Vehicle (PZEV), which includes hybrids and plug-in hybrids with a California Smog Score of 8 or 9.

$1,000 for purchase of a SULEV (California Smog Score of 8 or 9).

Utility Rate Discounts – Available at Burbank Water & Power, LA Department of Water and Power, Pacific Gas and Electric, Riverside Public Utilities and Southern California Edison.

Special Decals & Permitting — Available at the DMV for High Occupancy Vehicle (HOV) lane exemption and the City of Los Angeles which expedites permitting for EV's.

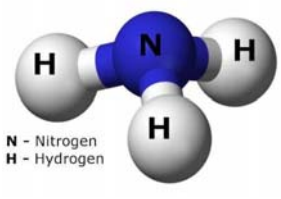
Parking — Free parking and charging at participating hotels, free metered parking in Hermosa Beach and Santa Monica, free EV charging at the Los Angeles International Airport (LAX), Ride for Free in Toll Lanes and Metro Express Lanes (FasTrak) access.

Insurance Discounts – Available at Farmers Insurance and Travelers Insurance

By: Brenton Smith

Pollutant of the Quarter: Ammonia

Ammonia (NH_3) at room temperature is a colorless gas with a distinctive pungent smell. We all know ammonia from its use in our everyday cleaning products. However, most of Ammonia in the environment occurs naturally from the breakdown of organic matter and from excretions of fish and animals. Over the years, ammonia has become one of the most synthetically produced chemicals in the United States. Man-made ammonia is used in a variety of applications including fertilizers for crop production, as a refrigerant in the food and beverage industry, and a reducing agent in the exhaust of diesel engines. Ammonia can also be found in smaller applications including the manufacture of synthetic fibers, plastics, cleaning products, and explosives. Although common in nature and widely used in everyday applications, ammonia in high concentrations is both highly corrosive and extremely hazardous to human health.



Refrigeration - The use of ammonia as a refrigerant also known as R717 has been the backbone of the cold storage and food processing industries since the early 1900s. For industrial applications, ammonia refrigeration is the most cost effective and energy efficient method of storing frozen and unfrozen foods. Because of ammonia's vaporization properties along with its low freezing (-108 °F) and boiling (-28 °F) points, it is a useful refrigerant that can absorb substantial amounts of heat from its surroundings. Anhydrous ammonia is widely used in industrial refrigeration applications such as hockey rinks and industrial cold storage rooms for the food and beverage industry. The only downside to using ammonia as a refrigerant is its toxicity. However, the popularity of ammonia as a refrigerant has increased due to the discovery that other popular refrigerants, vented chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), are extremely harmful greenhouse gases that can live in the atmosphere for hundreds of years, thus depleting the stratospheric ozone layer. Ammonia on the other hand, has zero Stratospheric Ozone Depletion Potential (SODP) and zero Global Warming Potential (GWP).

Fertilizer - Nitrogen (N) is an essential source of nutrition for growing plants. Although nearly 78 percent of the earth's atmosphere is comprised of nitrogen, plants are unable to use or take nitrogen directly in this form. However, plants can absorb nitrogen from ammonia (NH_3), which has the highest nitrogen concentration in any commercial fertilizer. Ammonia for fertilizer can be applied as a liquid (aqueous ammonia) or anhydrously (without water) by injecting ammonia gas directly into the soil. Ammonia for fertilizer is synthetically made through a method called the Harber-Bosh process in which hydrogen (H) and nitrogen (N) are captured from the atmosphere and synthesized to produce anhydrous ammonia. Ammonia was first synthesized in 1823 by reacting air and hydrogen. However, the first commercial production of synthetic ammonia did not begin until 1913. Today, more than 80% of all man-made ammonia is used for fertilizer; a third of this is applied directly to soil as pure ammonia. The rest is used to make other fertilizers that contain ammonium compounds, usually ammonium salts.

NOx Reducer - The burning of fossil fuels, including in diesel engines, creates harmful Nitrogen Oxides (NOx). NOx emissions are known to cause local and global health problems, and are considered an ozone precursor. An ozone precursor is a substance (NOx in this case) that reacts with another compound (Volatile Organic Compounds {VOCs} in this case) to create ozone; thus resulting in ground level ozone (see Desert Breeze, Tropospheric Ozone, June 2013 for more information). Ammonia is the key ingredient in many NOx reducing solutions including Diesel Exhaust Fluid (DEF), which is used to reduce NOx emissions through a process called Selective Catalytic Reduction (SCR). NOx emissions are reduced by injecting the liquid-reductant agent through a special catalyst into the exhaust stream of the diesel engine. The liquid-reducing agent usually contains automotive-grade urea or ammonia. The ammonia or urea needs to be injected at a point in the exhaust path that is within a specific temperature range: too hot and the ammonia decomposes into more NOx; too low, and the ammonia "slips" through without reacting, which can be toxic to humans. In the perfect application, the ammonia mixes with the exhaust gas and reacts with the NOx molecules on the catalyst surface to form harmless Nitrogen Gas (N_2) and water (H_2O).

Exposure - Handling NH_3 requires careful attention to safety. At storage facilities and during field application, appropriate personal protection equipment (PPE) must be used. Since NH_3 is highly soluble in water, free NH_3 will rapidly react with body moisture, such as lungs and eyes, to cause severe damage. In high concentrations, ammonia may cause irritation to the nose and throat, leading to coughing and difficulty breathing. Prolonged exposure can cause the lungs to fill with fluid, leading to death. If concentrated ammonia touches bare skin, it can cause burns, and if it gets into the eyes, it can cause permanent eye damage. The United

Continued on Page 3

Continued from Page 2

States Occupational Safety and Health Administration (OSHA) has set an 8 hour exposure limit for gaseous ammonia of 25 ppm by volume. Any direct contact with gaseous ammonia with concentrations greater than 25 ppm is strongly discouraged. Fortunately, ammonia's potent odor makes it easy to identify. Usually, you are able to smell ammonia at levels higher than 5 ppm. Therefore, you will probably smell ammonia before you are exposed to a concentration that may harm you. If you are able to smell ammonia move outside or to a well-ventilated area and seek medical attention if necessary. The Eastern Kern Air Pollution Control District has agricultural and industrial facilities that utilize ammonia; therefore, be vigilant and careful when you see containers labeled "ammonia."

By: Miguel Sandoval

> NEW STAFF MEMBERS <

Gary Ray - A Bakersfield native, Gary attended CSU Bakersfield and earned a Master's Degree in Public Administration and a Bachelor's Degree in Chemistry. Employed by the County for almost 15 years in the Waste Management Department, Gary worked with groundwater monitoring, environmental monitoring and landfill gas monitoring. Gary joins the District as the Air Quality Administrative Manager.

Miguel Sandoval – From McFarland, California, Miguel attended UC Merced and earned a Bachelor's Degree in Mechanical Engineering. After college, he participated in a 6 month internship with the Turlock Irrigation District where he assisted Civil Engineers with designing improvements towards maintenance on levy water pumps. Miguel was employed with Wonderful Citrus for 4 years where he operated equipment and later promoted to Production Team Supervisor. Miguel joins the District as an Air Quality Engineer and is happy to contribute a small part towards improving air quality.

David Arokiasamy – David graduated CSU San Bernardino with a Bachelor's Degree in Biochemistry and a Minor in Biology with an Ecology focus. He has worked for over 15 years in the environmental field, with the majority of his experience upholding regulatory compliance as a contractor for the Air Force and NASA at Edwards Air Force Base. David joins the District as an Air Quality Specialist and is glad to be working with the District's Inspectors with whom he collaborated with in his previous employment.

Katie Lantz – Originally from Tehachapi, California, Katie attended Cuesta College and received an Associate's Degree in General Education. She was employed with the Kern County Sheriff's Office for 5 years before transferring to the District as an Air Quality Support Specialist. Katie has always held an interest in environmental concerns and will continue her education at CSU Bakersfield this fall, majoring in Environmental Resource Management. Although living in Bakersfield, Katie is pleased to be a part of the Districts' mission to improve the air quality of the Eastern Kern communities of her childhood.

CA Proposition 65

In 1986, California voters approved Proposition 65 (Prop 65), officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986. Prop 65 is designed to reduce the public's exposure to toxic chemicals known to cause cancer, birth defects, or reproductive harm. Prop 65 requires California to publish, update, and maintain a list of known toxic chemicals; there are currently more than 900. Businesses are also required to provide warnings when they knowingly or intentionally cause significant exposures. It does not ban or restrict the sale of a listed chemical, just requires warnings be applied to help the public make informed decisions about potential exposures from the products they use and the places they go. Prop 65 also prohibits California businesses from knowingly discharging significant amounts of listed chemicals into sources of drinking water.

In 2018, the Office of Environmental Health Hazard Assessment (OEHHA) implemented new Prop 65 requirements to change the safe harbor warnings in several important ways. New warnings for consumer products must state that the product can "expose you to" a Proposition 65 chemical, rather than the product "contains" a chemical. Warnings labels must also include the name of at least one listed chemical that prompted the warning, the Prop 65 warnings website (www.P65Warnings.ca.gov), and a triangular yellow warning symbol.

There are also specific warnings tailored for products and places that can affect the public's proximal air quality. This includes but is not limited to wood dust, furniture products, diesel engines, vehicles, recreational vessels, enclosed parking facilities, petroleum products, service stations, vehicle repair facilities, and designated smoking areas.

Board of Directors

Don Parris, Chairman (Councilman, California City)
Zack Scrivner , Vice Chair (KC 2nd District Supervisor)
Mick Gleason (KC 1st District Supervisor)
Mike Mower (Councilman, Ridgecrest)
Michael Davies (Councilman, Tehachapi)

Board of Directors usually meet once every two months starting in January at the Tehachapi Police Department Community Room.

Air Pollution Control Officer

Glen E. Stephens, P.E.

Hearing Board Members

William Deaver
Doris Lora
Chris Ellis
Charles Arbaut

For news updates and other information, please visit the Eastern Kern APCD website at www.kernair.org

EASTERN KERN APCD
2700 M STREET, SUITE 302
BAKERSFIELD, CALIFORNIA 93301