



# DESERT BREEZE

VOLUME X ISSUE IV

DECEMBER 2022

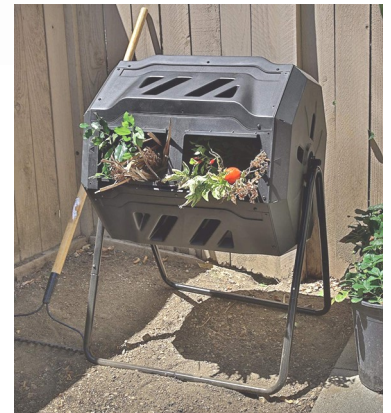
## Composting

**C**omposting organic waste (e.g. banana peels, lawn clippings, leaves...) can reduce more than 50% of carbon dioxide-equivalent greenhouse gas emissions. There are two types of composting: aerobic (typically the type that is done at home) and anaerobic (typical of landfills). Aerobic composting works with oxygen and is a quicker process that produces carbon dioxide (CO<sub>2</sub>); methane (CH<sub>4</sub>) is not a product because methane-producing microbes are not active in the presence of oxygen. Anaerobic composting works without oxygen, is a slower method, and produces both CO<sub>2</sub> and CH<sub>4</sub>. Over a one-hundred-year period, CH<sub>4</sub> is twenty-five times more powerful as a greenhouse gas than the carbon dioxide that is produced by composting. CH<sub>4</sub> holds more heat than CO<sub>2</sub>; therefore, contributing exponentially more to global warming than CO<sub>2</sub>.

There are several types of aerobic composting:

- ◇ **Open pile** – a system that uses naturally occurring microbes that feed on organic material.
- ◇ **Windrow** – an industrial composting method.
- ◇ **Static pile** – no physical manipulation of the pile is done during primary composting.
- ◇ **Vermicomposting** – the use of earthworms to convert organic waste into fertilizers.

- ◇ **In-vessel** – a closed composting reactor in which waste is fully contained. In-vessel composting may be the best option for composting at home. It is less likely to attract pests and vermin.



At-home-composters now have the option to purchase a counter-top composter, which is a small machine designed to process food waste in a matter of a few hours. Take heed when purchasing a countertop composter; some dehydrate and shred food waste rather than producing ready-to-use dirt that can be used for indoor and outdoor plants. The product derived from composting can be added to the garden. A little-known tip is to add the composted material and coffee grounds to the garden to create a nutrient rich soil. The most important thing to keep in mind when composting at home is air. Without the presence of oxygen, the at home composting will not differ from that of a landfill.

*By: Heather Handy, Air Quality Specialist*

Every year, U.S. landfills and trash incinerators receive **167 MILLION TONS** of garbage.

Landfills and incinerators are dangerous. Every bag thrown out contributes to:



Pollution of surrounding soil, air, and water



Climate change



Health hazards to humans and animals



**> 50%** of typical municipal garbage set out at the curb is compostable.

**21%** is food scraps alone

**15%** paper/paperboard

**8%** yard trimmings

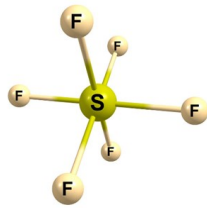
**8%** wood waste

To learn more, visit: [isr.org/compost-impacts](https://www.isr.org/compost-impacts)



## Pollutant of the Quarter: Sulfur Hexafluoride

**S**ulfur Hexafluoride (SF<sub>6</sub>) is a colorless, odorless, non-flammable, and non-toxic gas. SF<sub>6</sub> is also a greenhouse gas (GHG) that is 23,500 times more potent than carbon dioxide (CO<sub>2</sub>) at trapping infrared radiation, and has an atmospheric lifetime estimated to be 3,200 years (compared to 5 years for CO<sub>2</sub>). However, the concentration of SF<sub>6</sub> in the atmosphere is relatively small (11 parts per trillion, compared to 400 parts per million for CO<sub>2</sub>).



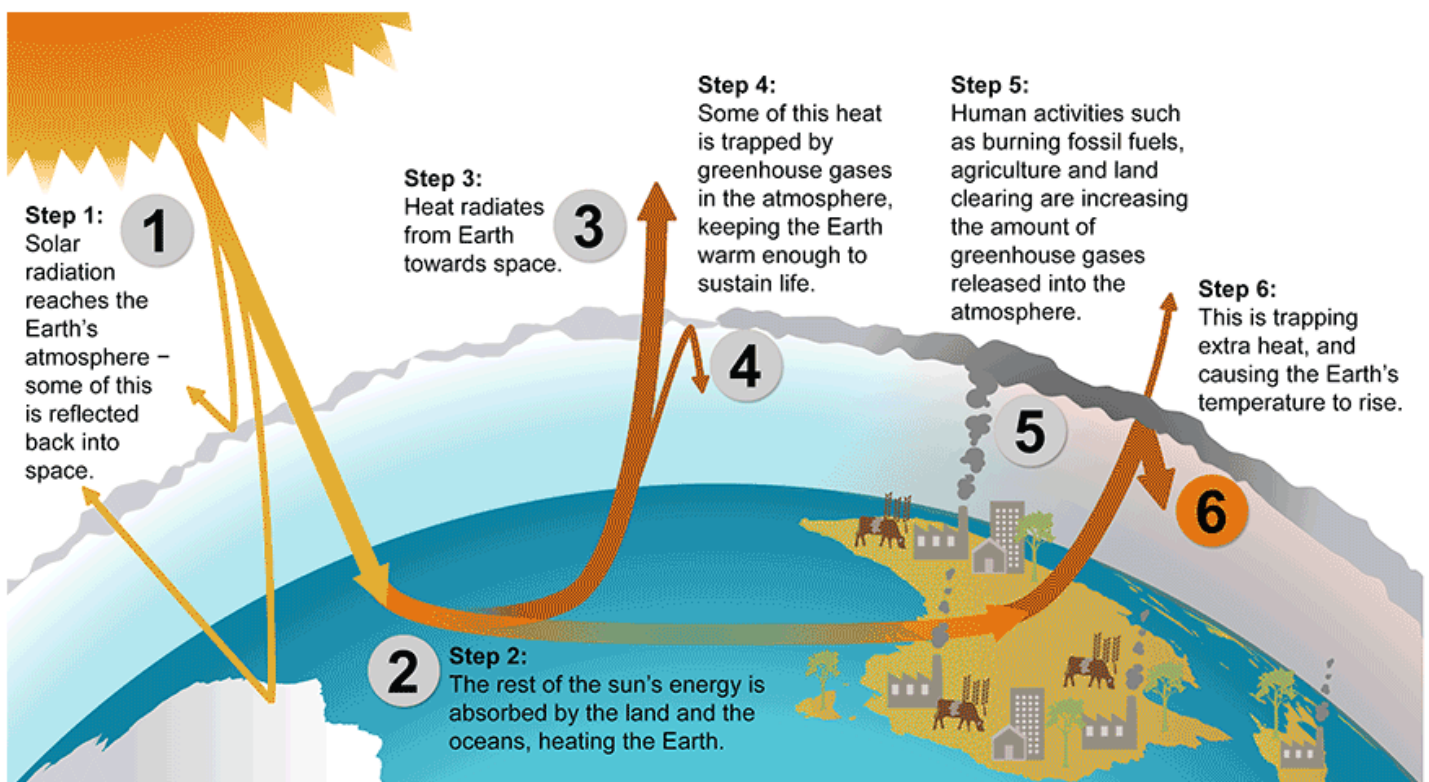
SF<sub>6</sub> is synthetic fluorinated compound that exists largely as a man-made industrial gas, commonly prepared by exposing sulfur to fluorine gas. It is an excellent electrical insulator and has been used in high-voltage circuit breakers and switchgear since the 1950's, where the high dielectric strength of SF<sub>6</sub> allows it to quench dangerous electrical discharges. SF<sub>6</sub> has also been used in the manufacture of magnesium, as a contrasting agent in ultrasound testing to better see blood vessels, and as a tracer gas for determining building and fume hood ventilation testing, and to calibrate air dispersion models of roadways developed by the US Environmental Protection Agency (EPA). Additionally, because SF<sub>6</sub> is denser than air, it can lower the resonance frequency of the vocal tract, pitching the voice

down (to sometimes humorous effect). While SF<sub>6</sub> is non-toxic, it is heavier than air & can settle in low-lying areas, where it can displace oxygen in the lungs and presents a significant risk of asphyxiation.

Since SF<sub>6</sub> has such a large warming potential and long life span, even a relatively small amount can have a significant climate impact. As the largest user of SF<sub>6</sub> is the electrical power industry (~80% of SF<sub>6</sub> produced), the greatest opportunities for preventing emissions of SF<sub>6</sub> are within this sector. Replacement or refurbishment of aging electrical equipment with equipment having better seals and containing less SF<sub>6</sub>, implementing a leak detection and repair program, and the use of more efficient operation and maintenance techniques can all help to reduce emissions of SF<sub>6</sub> into the atmosphere.

Climate pollutants are subject to reporting under the Mandatory Reporting Rule of the California Global Warming Solutions Act of 2006 (commonly referred to as Assembly Bill (AB) 32), and the US EPA's Mandatory Greenhouse Gas Reporting regulation (Code of Federal Regulations, Title 40, Part 98). Under these regulations, certain types of facilities are required to report their GHG emissions, and may be subject to fees or purchasing emission offsets for their GHG emissions.

*By: Sam Johnson, Air Quality Engineer*





## 2023 RULE DEVELOPMENT



### Rules

The Federal Clean Air Act required the United States Environmental Protection Agency (EPA) to develop health-based National Ambient Air Quality Standards (NAAQS) for several categories of air pollutants including the following six common criteria pollutants: particulate matter (PM), ozone (O<sub>3</sub>), sulfur

dioxide (SO<sub>2</sub>), oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), and lead (Pb). Each state is required to adopt and submit a State Implementation Plan to the EPA that provides a mechanism for the implementation, maintenance, and enforcement of the NAAQS. Ultimately, this responsibility is tasked to local air districts.

#### **Did you know there are 35 Air Districts in California?**

The Eastern Kern Air Pollution Control District (District) is one of thirty-five air districts located in California. Each air district is faced with its own set of unique challenges that can affect attainment. Such challenges can include geography, topography, climate, emissions transport, types of emitting sources, and the actual pollutants being

emitted. All of these things are considered when drafting air quality rules and regulations. The District currently has 133 enforceable rules in its rulebook designed to attain and maintain the NAAQS.

#### **Did you know Eastern Kern Amended & Adopted 15 Rules in 2022?**

As technology and air quality standards change and progress, rules will need to be revised accordingly, and occasionally new source category rules will need to be adopted. In 2022, the District was required to amend 14 existing rules and adopted one new draft rule. Rule development is generally a very lengthy process that involves many guiding principles and procedural steps. Section 40923 of the California Health and Safety Code, requires the District to give notice of the regulatory control measures that may be considered for amendment or adoption in the upcoming calendar year. Many years have passed where no rule amendments were necessary. However, 2023 is beginning to appear as another busy rule development year similar to 2022. The District already has plans to draft a new asbestos rule, in addition to amending the Stationary Gas Turbines, Fugitive Dust, Cement Kilns, Wood Products Coatings, and Graphic Arts rules.

*By: Jeremiah Cravens, Senior Air Quality Specialist*

## NEW VARIANCE HEARING BOARD MEMBER

The Eastern Kern Air Pollution Control District would like to welcome Brenton G. Smith as the newest member of our Variance Hearing Board. Mr. Smith joins the District with over 29 years of air quality experience working closely with permitted facilities, air pollution rules, regulations, and policies. Throughout his career, Mr. Smith has worked on “both sides of the rulebook” including three air regulatory agencies and over 10 years of experience in the private sector as a representative of regulated industries. During his career, Mr. Smith has worked for the California Air Resources Board (CARB) and the following local air districts: Eastern Kern Air Pollution Control District, San Joaquin Valley Air Pollution Control District, and the Bay Area Air Quality Management District. His extensive expertise both as an air quality regulator and a member of general industry is invaluable to his role as a hearing board member. Hence, the District is excited to work with Mr. Smith to help bridge the gap between the Air District and Private industry in order to attain and maintain the air quality standards.

*By: Miguel Sandoval, Air Quality Engineer*

### **Board of Directors**

Michael Davies, Chairman (Councilman, Tehachapi)  
Zack Scrivner, Vice-Chair (KC 2nd District Supervisor)  
Phillip Peters (KC 1st District Supervisor)  
Kyle Blades (Councilman, Ridgecrest)  
Jim Creighton (Councilman, California City)

Board of Directors usually meet once every two months starting in January at the District's Board Room, 414 W. Tehachapi Blvd., Suite D, in Tehachapi. The Meeting Agenda can be located on the District website [www.kernair.org](http://www.kernair.org), under the "Board" tab.

### **Air Pollution Control Officer**

Glen E. Stephens, P.E.

### **Hearing Board Members**

Doris Lora  
Chris Ellis  
Benjamin Dewell  
Brett Moseley  
Brenton Smith



For news updates and other information, please visit the Eastern Kern APCD website at [www.kernair.org](http://www.kernair.org)

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