# air emissions

protecting air quality

Chevron is committed to protecting air quality by managing emissions from our operations. Our air emissions Corporate Core Environmental Aspect* includes criteria pollutants [oxides of nitrogen (NOx), oxides of sulfur (SOx) and particulate matter (PM)], volatile organic compounds (VOCs) and hazardous air pollutants. Not part of our definition of air emissions are greenhouse gases (GHGs), including methane. GHGs are included as a separate environmental aspect: energy efficiency and greenhouse gas.

**learn more about greenhouse gas management >**

## management of air emissions

The expectations in our updated Operational Excellence Management System (OEMS) include that our organizations reduce air emissions using a risk-based approach that addresses potential acute and cumulative impacts across the life of our assets. Organizations monitor and analyze performance to verify that the safeguards designed to reduce air emissions are in place and functioning. Our Environmental Stewardship (ES) process, our Environmental, Social and Health Impact Assessment (ESHIA) process and our Upstream-specific Air Emissions Environmental Performance Standard (Air Emissions EPS) are three examples of how the air emissions-related expectations of our OEMS are executed.

The ES process directs our businesses to create an inventory of how their activities interact with the environment. These environmental aspects, including air emissions, and their related potential impacts are then used to identify, assess and prioritize environmental risk and improvement opportunities.

The ESHIA process is used by capital project teams early in the life of a project to assess the potential impacts of our activities on air quality. An important part of this process is assessing existing environmental and social conditions, such as local air quality. This information is used during project planning to help us consider and address potentially significant air emissions from our operations in relation to air quality.

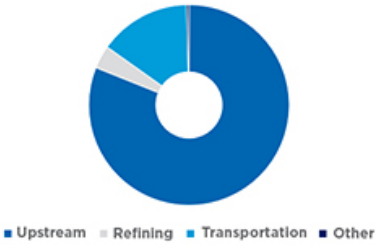
Our Air Emissions EPS is applied across our Upstream businesses and capital projects and sets an expectation to conduct an air quality impact assessment for certain equipment. If needed, based on the results of the impact assessment, the Air Emissions EPS specifies design requirements, such as equipment emission standards and control technologies, to reduce air emissions from our new capital projects. Our Air Emissions EPS also sets forth leak detection and repair programs to reduce emissions of VOCs from sources that meet the applicability requirements of the standard.

We have also made significant investments in equipment to reduce air emissions associated with our refinery operations and to meet regulatory requirements.

# reporting our performance

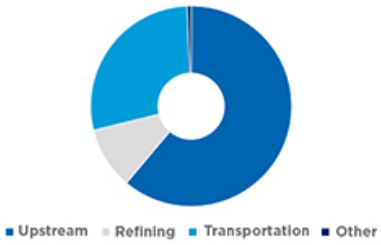
We collect data on our air emissions, which enables us to make informed business decisions around protection of air quality. We are committed to annually reporting performance data on the common reporting elements in the 2015 edition of the IPIECA/API/IOGP** Oil and gas industry guidance on voluntary sustainability reporting, as follows:

**2018 $NO_x$ emissions by sector*****
142 thousand metric tons



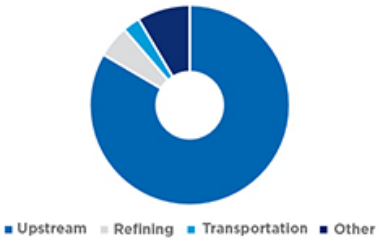

enlarge NOx emissions chart

**2018 $SO_x$ emissions by sector*****
40 thousand metric tons




enlarge SOx emissions chart

**2018 VOC emissions by sector*****
101 thousand metric tons




enlarge VOC emissions chart

# success stories

## Singapore

The Singapore Refining Company, a joint venture in which Chevron holds a 50 percent interest, completed a major capital project in 2017 that resulted in a reduction in SOx emissions and increase in energy efficiency. The $500 million project involved constructing gasoline clean fuels units and a dual-train cogeneration plant ("Mogas Cogen"), as well as retrofits to existing furnaces to burn cleaner natural gas. The project supports the Singapore government's goals of a cleaner environment and a more efficient energy industry. In addition, the refinery is now producing higher-quality and cleaner-burning gasoline for the Singapore and Malaysia markets.

## richmond, california

**Refinery modernization project**
In 2016, we restarted construction activity for the Refinery Modernization Project, a $1 billion investment to replace some of our Richmond Refinery's oldest processing equipment with more modern technology. Benefits of the project include an annual NOx reduction equivalent to removing more than 11,000 cars from Richmond streets and an annual PM10 reduction equivalent to removing 172 big rig trucks from the Richmond Parkway. New air pollution control equipment will be installed, and upgrades will be made to improve energy efficiency, including:

- two new crude oil delivery ships with engines that go beyond current environmental requirements;

- the addition of domes to fuel storage tanks;
- low-nitrogen oxide burners, furnaces and wet electrostatic precipitators to protect air quality and reduce pollution.

In 2017, Chevron worked with Foss, a tugboat operator, to commission a new multipurpose boat as part of the refinery's commitment under the modernization project. The Caden Foss tugboat is one of the first of its kind and complies with the Environmental Protection Agency's Tier 4 emission standards for new nonroad diesel engines. Use of this new tugboat is expected to result in a decrease in particulate matter and NOx emissions from Chevron's Richmond Long Wharf.

**Community air monitoring program in California**
Air monitoring is one of the tools used to measure emissions and help the public better understand local air quality. Since 2013, our refinery in Richmond, California has funded a community air monitoring program. The program, which is operated by independent expert Argos Scientific, provides real-time data 24 hours a day about air quality in the community. Data are collected and reported from three stations along the Richmond Refinery's fence line and three neighborhood stations – North Richmond, Atchison Village and Point Richmond.

Since the launch of the program, the air monitors have continuously tracked air quality. Results show that air quality in Richmond is on par with other Bay Area communities, including the city of San Francisco and Marin County.

› learn more about the air monitoring program

*Consistent with ISO (International Organization for Standardization) 14001, we defined seven types of environmental activities, or Corporate Core Environmental Aspects: accidental release prevention and response, air emissions, energy efficiency and greenhouse gas, natural resources (including land, water and biodiversity), site residual impacts, waste, and wastewater.

**IPIECA (the global oil and gas industry association for environmental and social issues)/American Petroleum Institute/International Association of Oil & Gas Producers.

***Operated basis. Transportation includes Chevron Pipe Line Company and Chevron Shipping Company. Other includes Americas Products, International Products, Chevron Lubricants, Chevron Oronite Company, and Chevron Power and Energy Management Company. Air emissions from Chevron Business and Real Estate Services and Chevron Environmental Management Company are excluded from this reporting. For compiling and reporting air emissions data, Chevron follows regulatory definitions of VOCs. SOx emissions include SO2 and SO3, reported as SO2-equivalent. NOx emissions include NO and NO2 (reported as NO2-equivalent) and exclude N2O. Information regarding air emissions from Chevron Phillips Chemical Company LLC can be found at www.cpchem.com.


**downloads**


› 2018 Annual Report


› 2018 Corporate Responsibility Report


› The Chevron Way - English

**links**

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