



# TOWN OF DRYDEN – BORGER STATION OPERATIONS

April 21, 2022

# 2021 Review



# WHO WE ARE



# CORE PRINCIPLES



**CUSTOMER SERVICE**



**EMPLOYEE COMMITMENT**



**ENVIRONMENTAL RESPECT**



**FINANCIAL STRENGTH**



**OPERATIONAL EXCELLENCE**



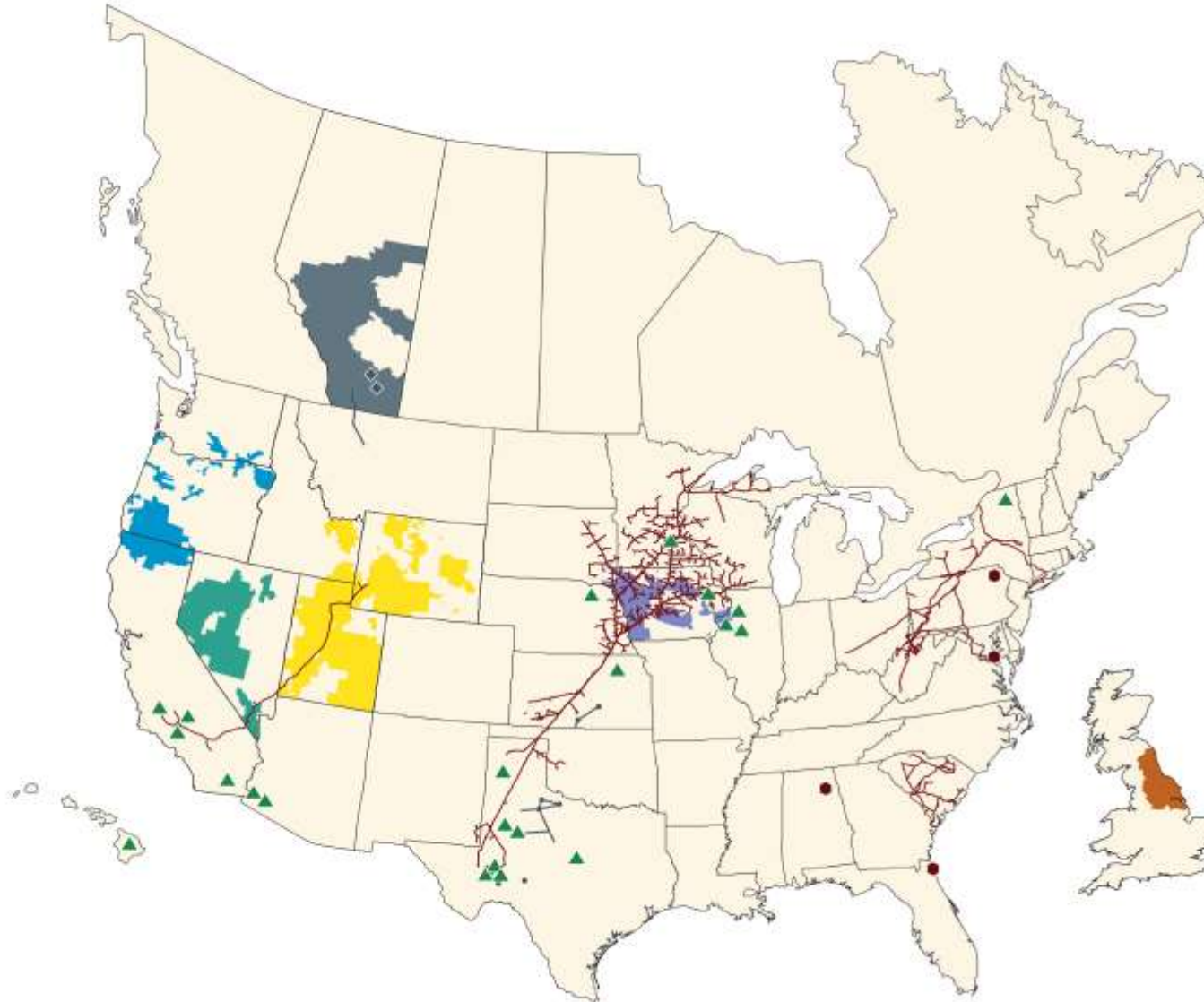
**REGULATORY INTEGRITY**

 **BHE GT&S**  
A BERKSHIRE HATHAWAY ENERGY COMPANY

# Berkshire Hathaway Energy



- PACIFICORP
- PACIFIC POWER
- ROCKY MOUNTAIN POWER
- BHE TRANSMISSION
- ALTALINK
- BHE U.S. TRANSMISSION
- BHE CANADA
- MIDAMERICAN ENERGY COMPANY
- NVEnergy
- NORTHERN POWERGRID
- BHE PIPELINE GROUP
- BHE RENEWABLES



- 12 million customers and end-users
- Top-rated service provider within the industry



- OSHA Recordable Incident Rate of 0.35



- 45% renewable/noncarbon generation



- 33% below national average prices at MidAmerican Energy
- 23% below national average prices at PacifiCorp
- 19% below national average prices at NV Energy



- \$132.1 b in total assets
- Exceptional cyber and physical protection



- 2021 net income > \$3.9b
- Operating cash flows > \$8.7b

# Eastern Gas Transmission & Storage

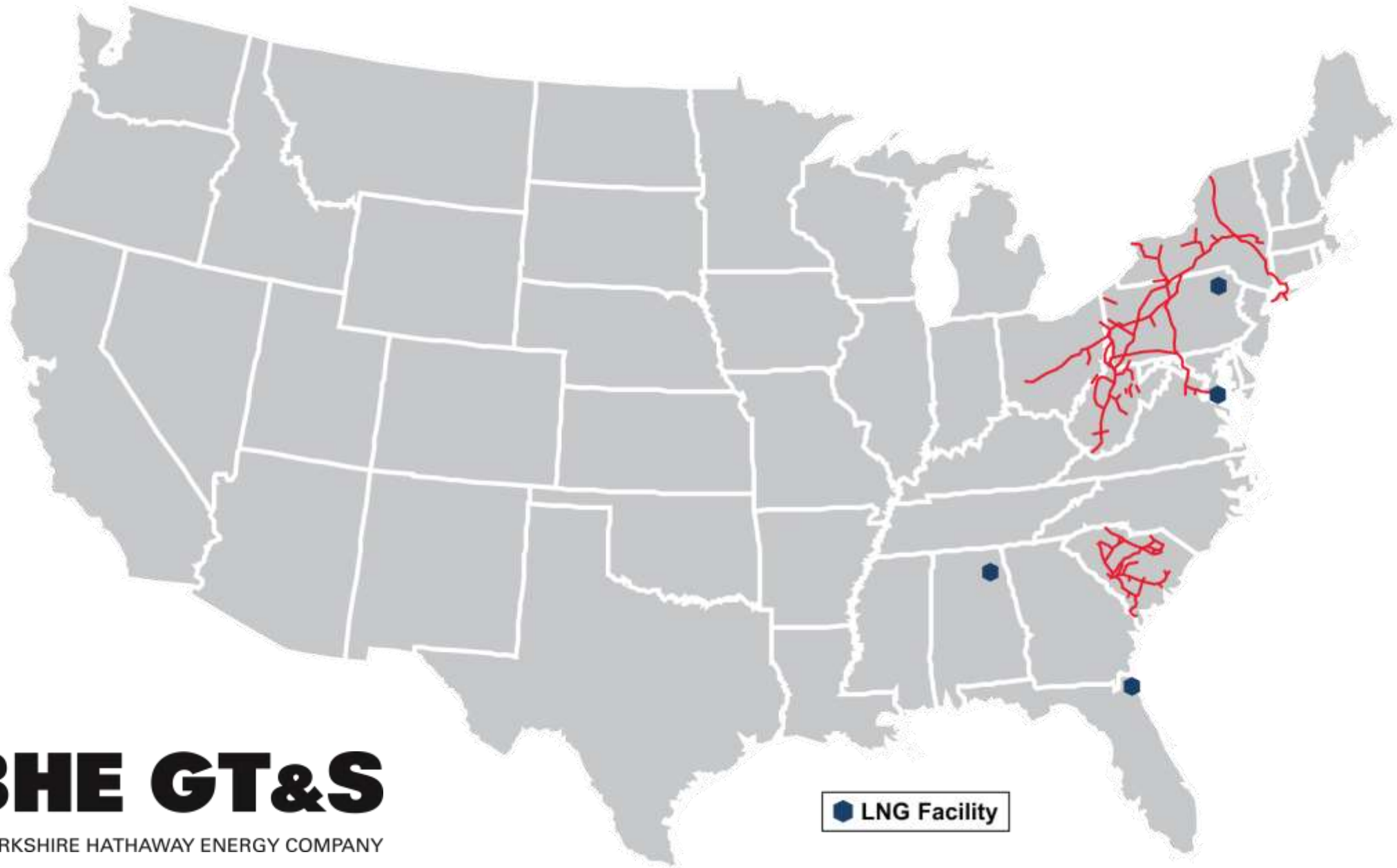
## Who We Are

**BHE GT&S, through its local operating company Eastern Gas Transmission and Storage (EGTS), provides gas transportation and storage services with one of the largest underground natural gas storage systems in the United States with 756 bcf of storage capacity.**

**Headquartered in Bridgeport, West Virginia, this multi-state pipeline system links to other major pipelines and to markets in the Midwest, Mid-Atlantic and Northeast regions.**

**We safely maintain nearly 3,600 miles of pipeline in six states: Ohio, West Virginia, Pennsylvania, New York, Maryland and Virginia. We reliably supply natural gas for large customers, such as major utilities and power plants, and to local distribution companies to heat homes, hospitals, nursing homes, & run small businesses.**





 **BHE GT&S**  
A BERKSHIRE HATHAWAY ENERGY COMPANY

 LNG Facility

# EMISSIONS DATA

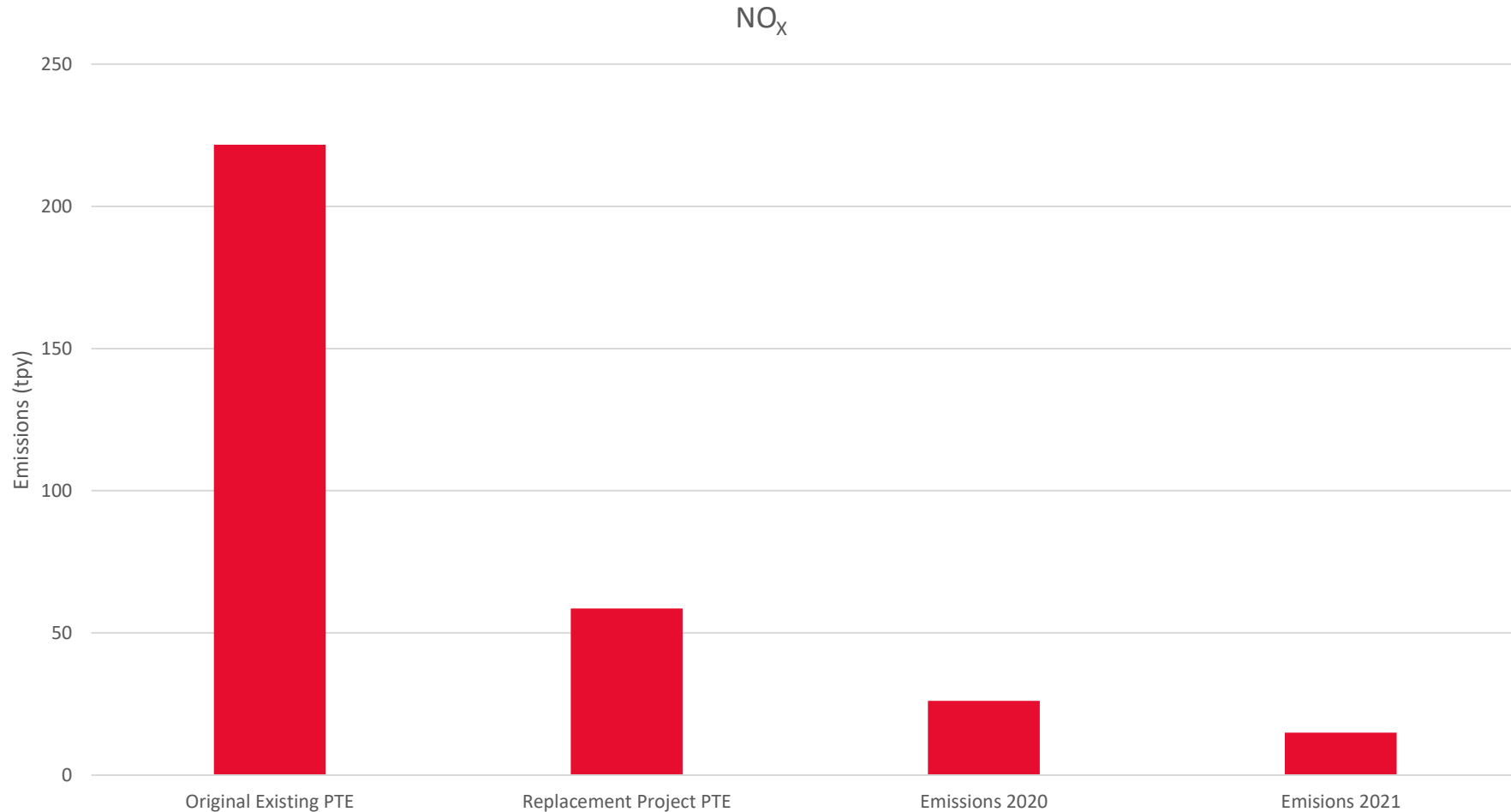




# Emissions Reductions - NO<sub>x</sub>

In atmospheric chemistry, NO<sub>x</sub> is a generic term for the nitrogen oxides that are most relevant for air pollution, namely nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>).

These gases contribute to the formation of smog and acid rain, as well as affecting tropospheric ozone.



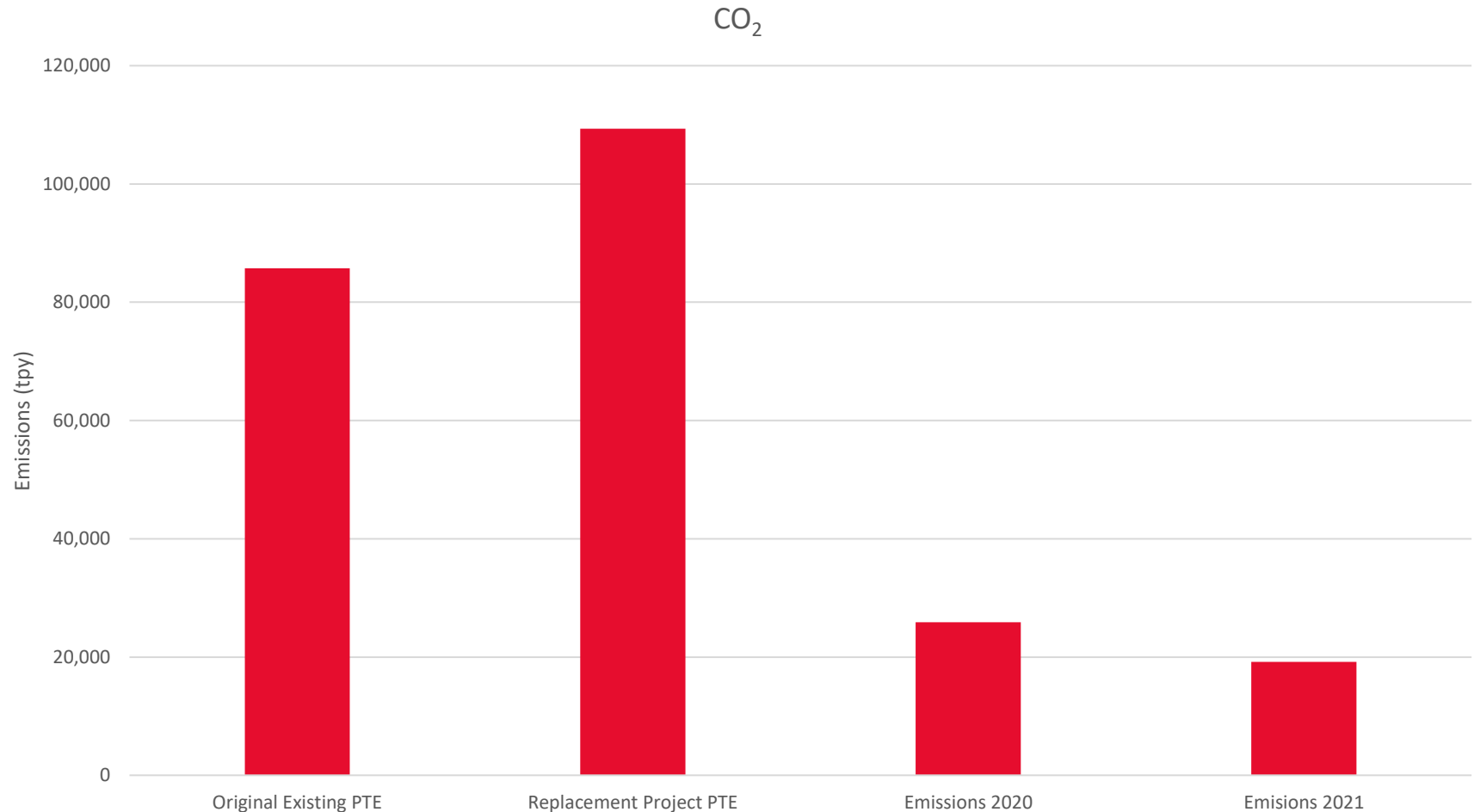
*PTE = Potential to Emit*



# Emissions Reductions - CO

**CO** is a colorless, odorless gas that can be harmful when inhaled in large amounts. **CO** is released when something is burned. The greatest sources of **CO** to outdoor air are cars, trucks and other vehicles or machinery that burn fossil fuels.

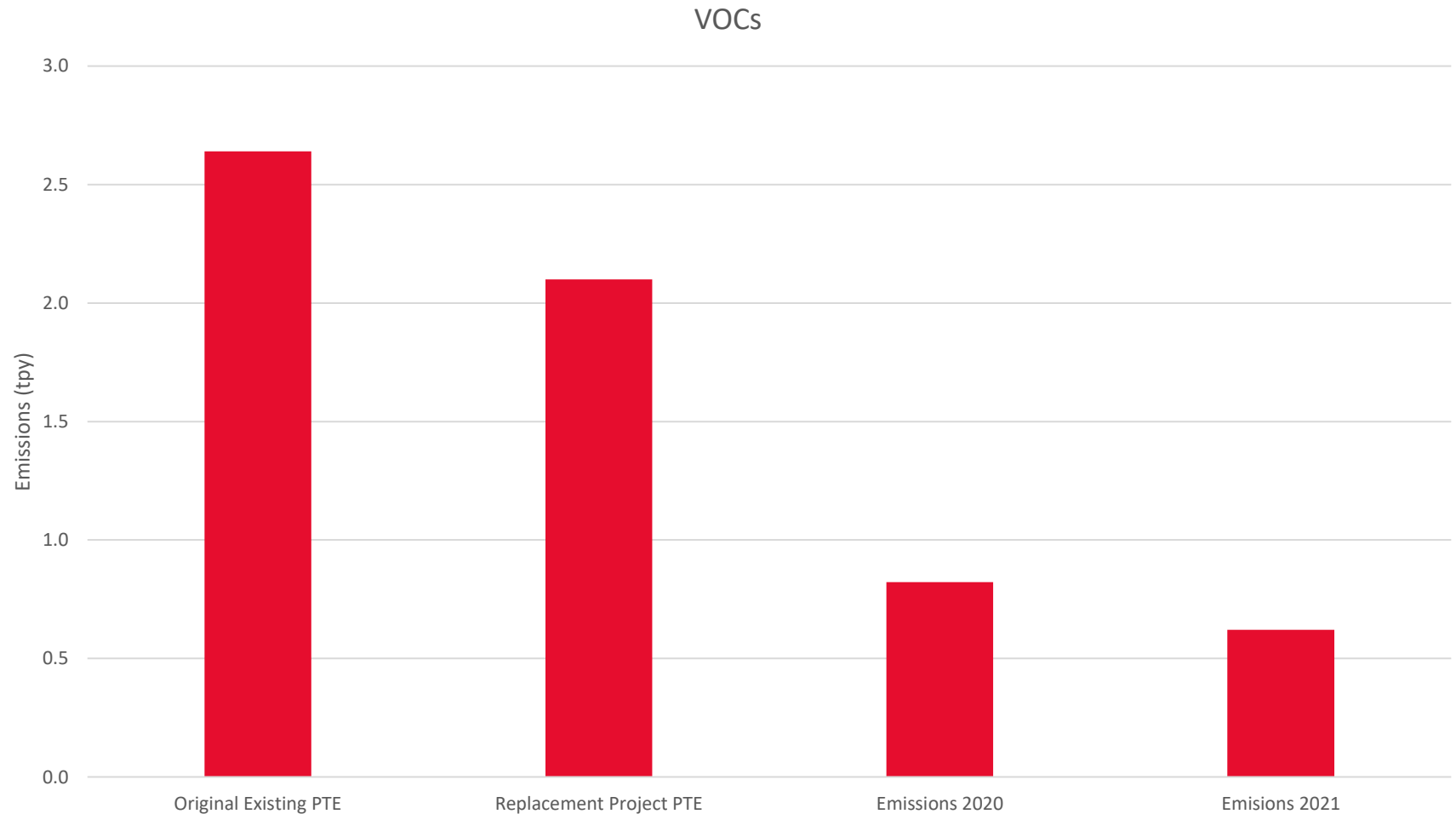
A variety of items in your home such as unvented kerosene and gas space heaters, leaking chimneys and furnaces, and gas stoves also release **CO** and can affect air quality indoors.



# Emissions Reductions - VOCs

Volatile organic compounds, **VOCs** for short, are a common type of EPA-regulated drinking water contaminant.

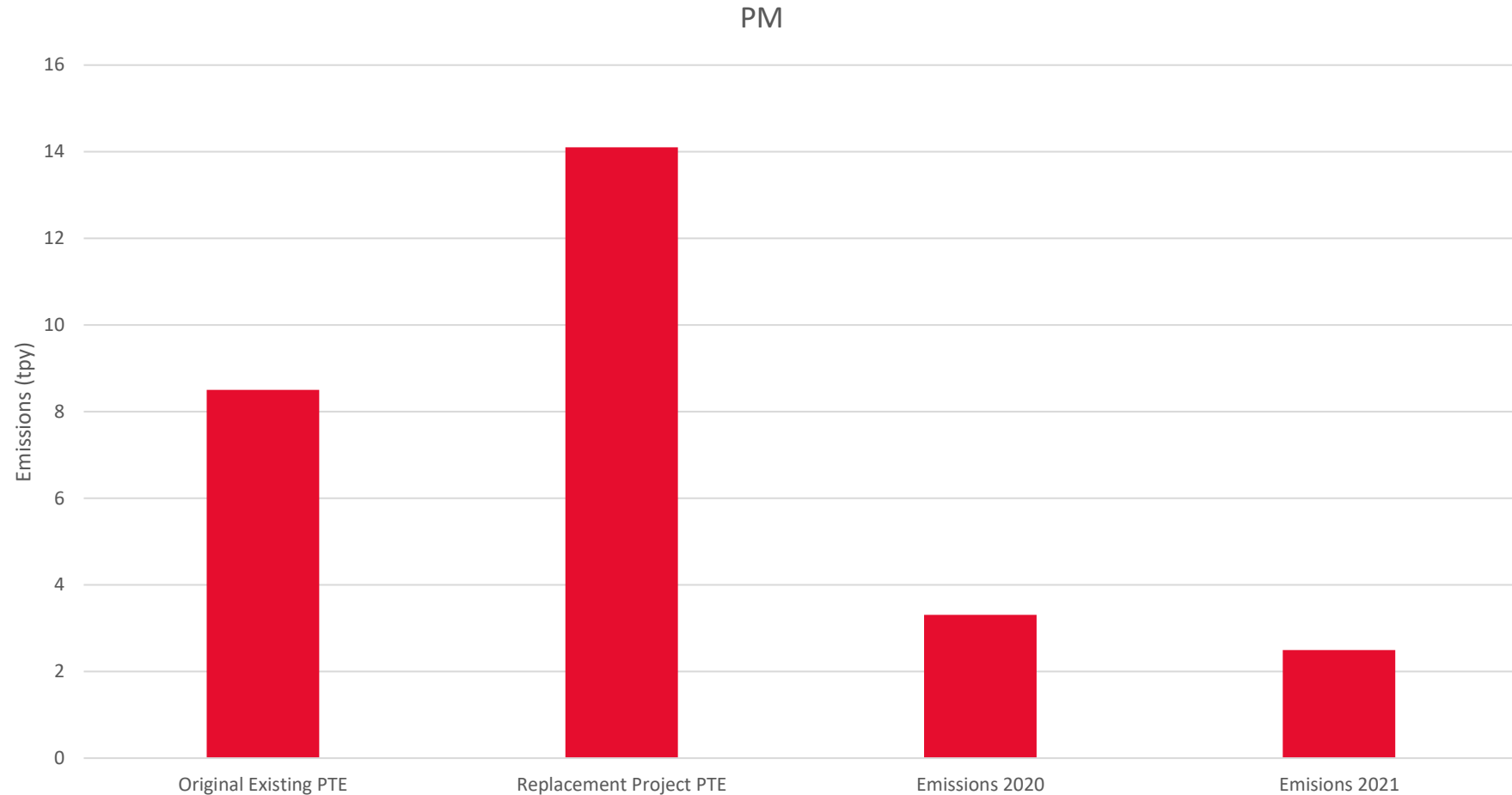
Even today, **VOCs** can be found in a number of products that are used on a daily basis, like paint thinners, pesticides and insect sprays.



# Emissions Reductions - PM

**“Particulate matter” (PM) is the general term used to describe solid particles and liquid droplets found in the air. The composition and size of these airborne particles and droplets vary.**

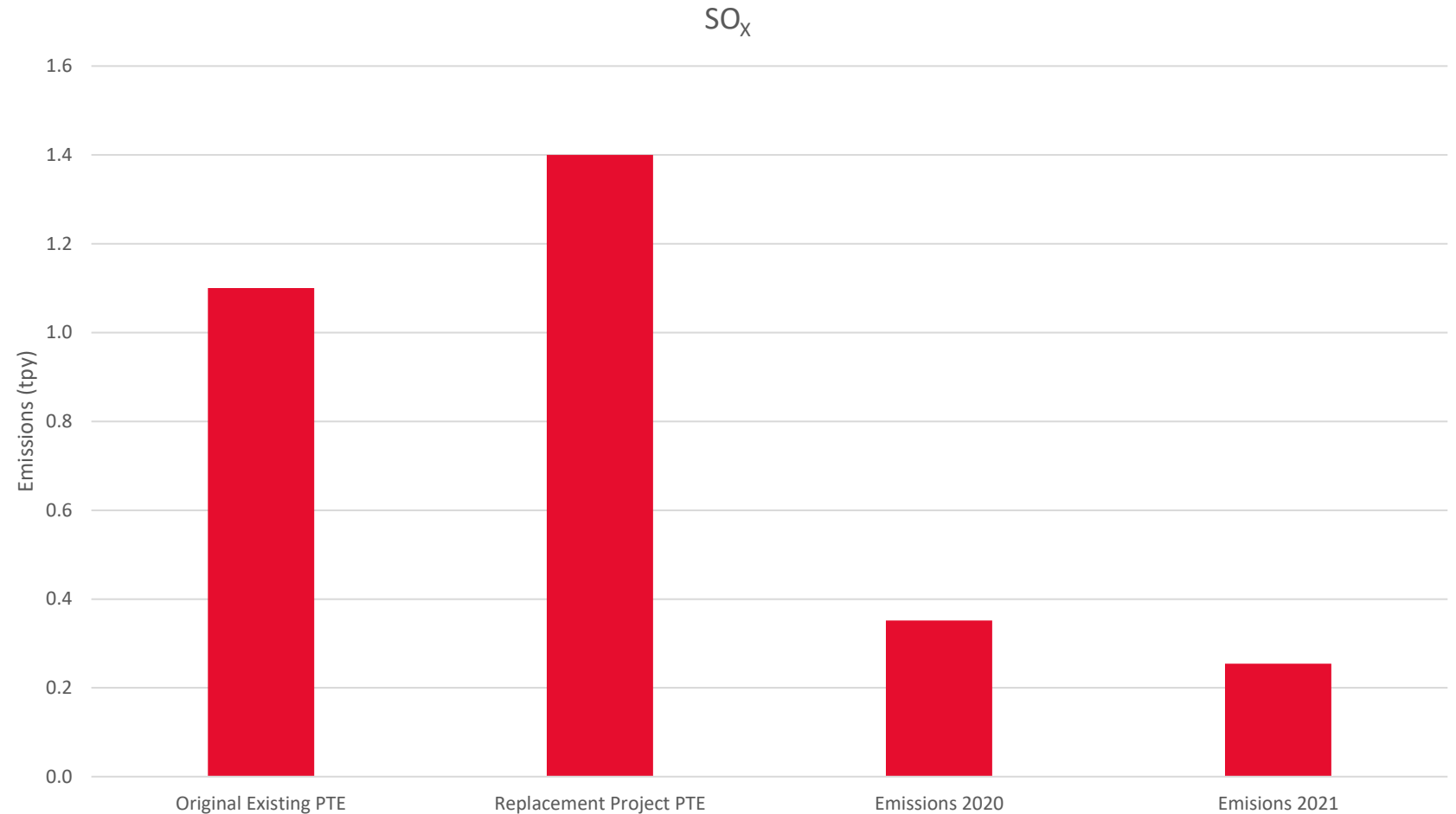
**PM can be emitted directly or formed in the atmosphere. “Primary” particles are those released directly to the atmosphere. These include dust from roads and black and/or elemental carbon from combustion sources.**



# Emissions Reductions - SO<sub>x</sub>

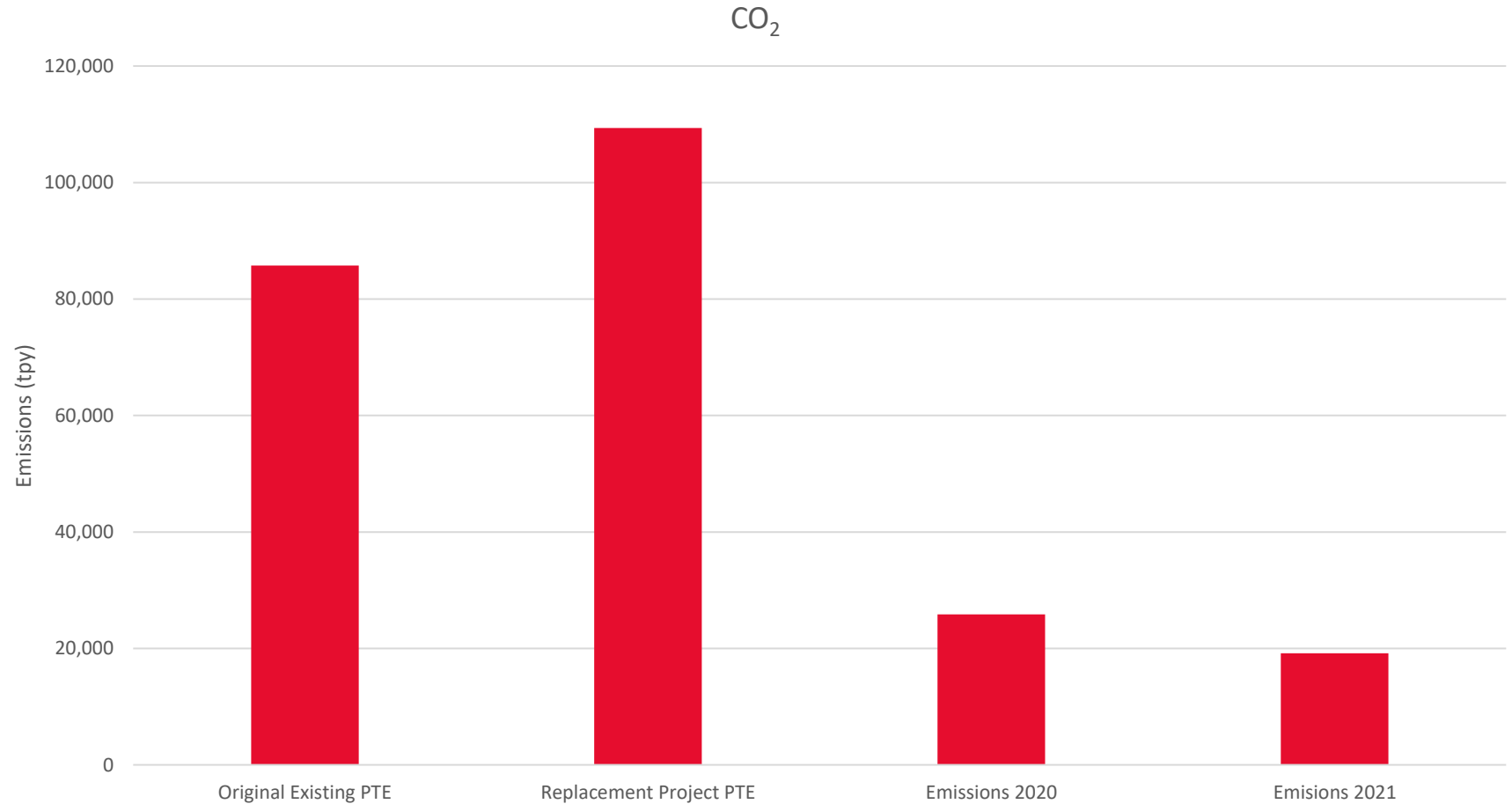
Sulfur oxides (SO<sub>x</sub>) are compounds of sulfur and oxygen molecules. Sulfur dioxide (SO<sub>2</sub>) is the predominant form found in the lower atmosphere.

It is a colorless gas that can be detected by taste and smell in the range of 1,000 to 3,000 micrograms per cubic meter (µg/m<sup>3</sup>).



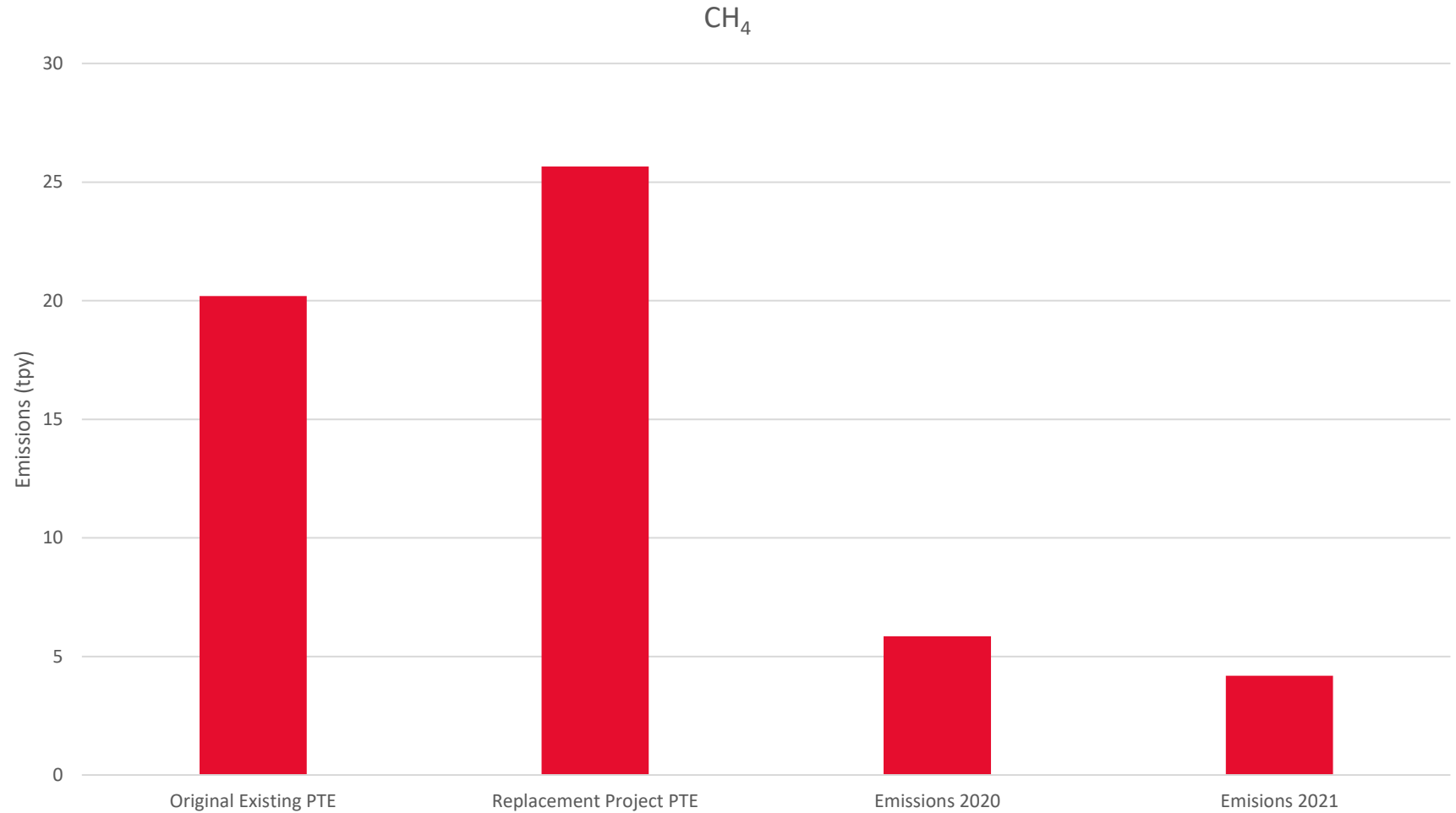
# Emissions Reductions – CO<sub>2</sub>

Carbon dioxide is an acidic colorless gas with a density about 53% higher than that of dry air.



# Emissions Reductions – CH<sub>4</sub>

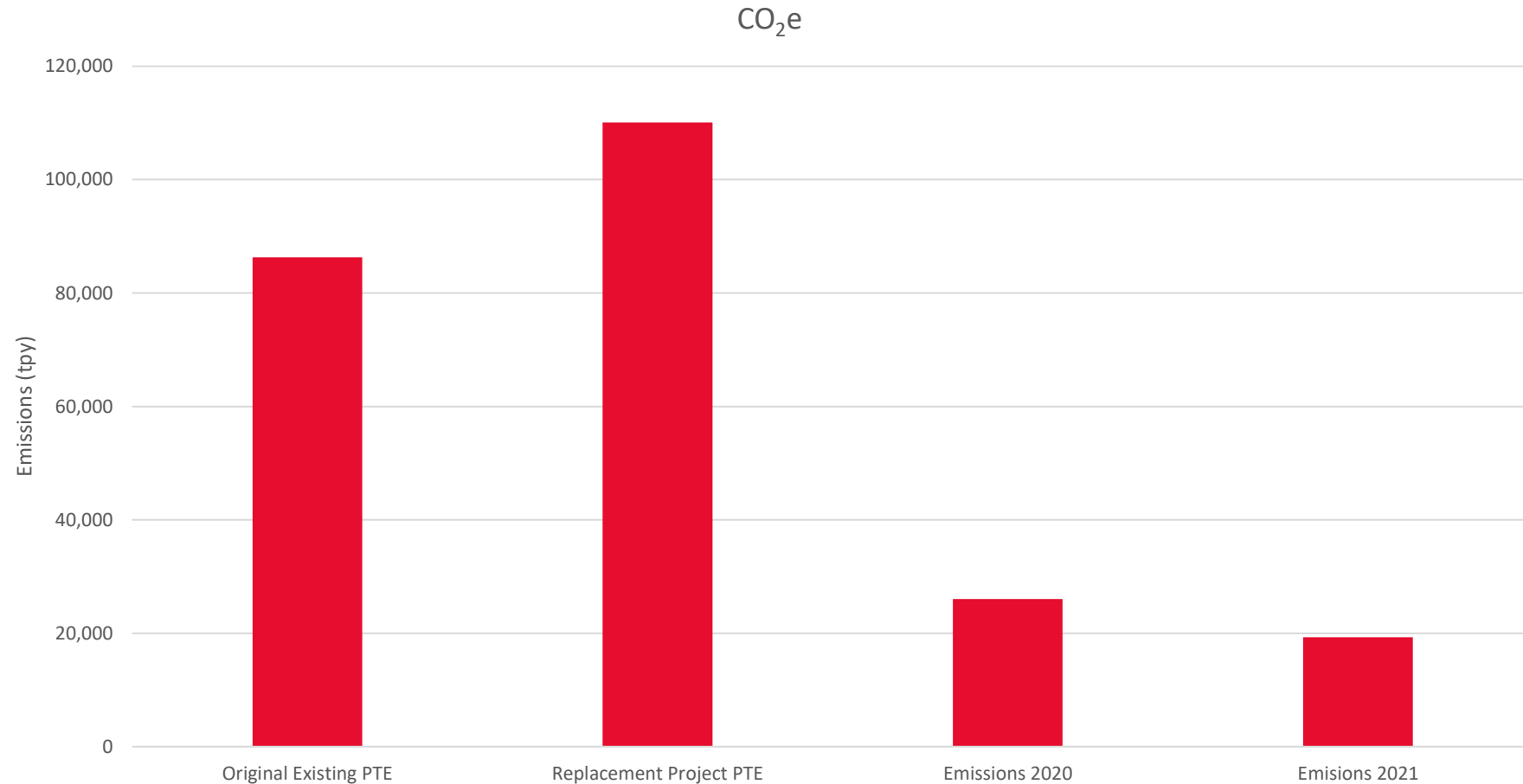
## Methane



# Emissions Reductions – CO<sub>2</sub>e

**CO<sub>2</sub>e is the shorthand for carbon dioxide equivalents.**

**It is the standard unit in carbon accounting to quantify greenhouse gas emissions**



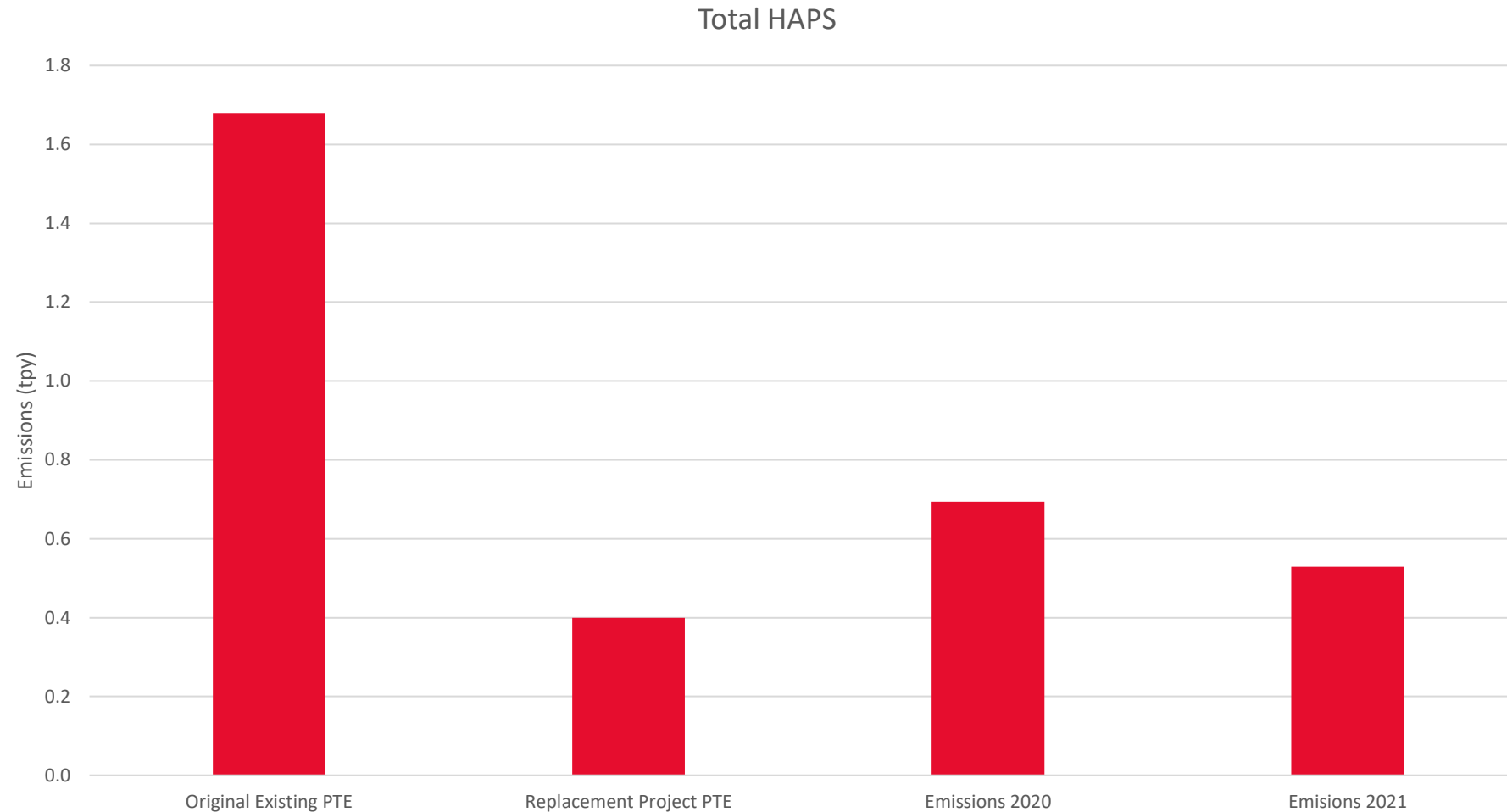


# Emissions Reductions – Total HAPs

**Hazardous air pollutants, also known as toxic air pollutants or air toxics.**

**Examples of toxic air pollutants include**

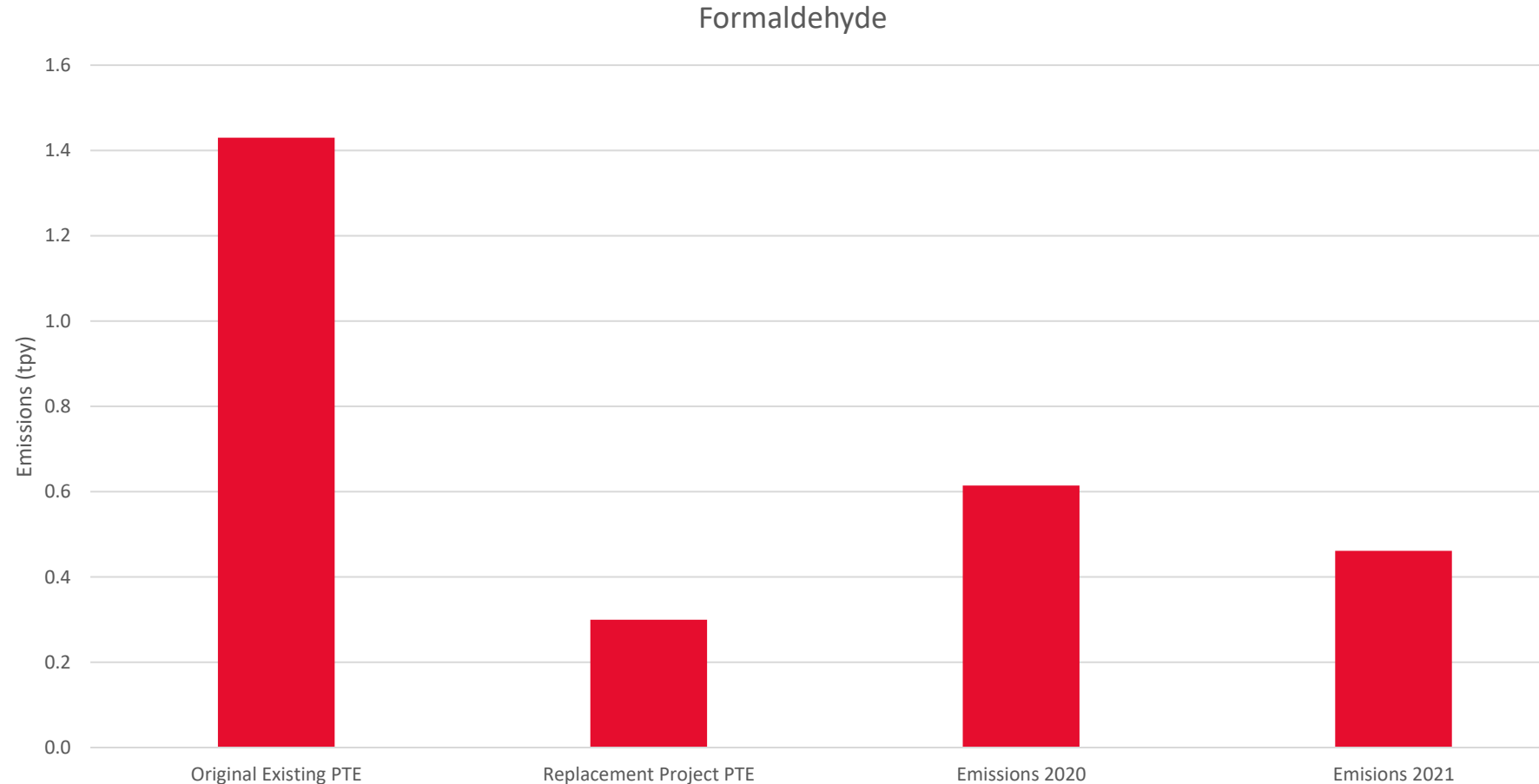
- **benzene, which is found in gasoline;**
- **perchloroethylene, which is emitted from some dry cleaning facilities; and**
- **methylene chloride, which is used as a solvent and paint stripper by a number of industries.**



# Emissions Reductions – Formaldehyde

A colorless, pungent-smelling gas; an important hazardous air pollutant.

Sources include environmental tobacco smoke and other combustion sources; pressed wood products (such as particle board); and certain textiles, foams, and glues.



# HOW MUCH GAS?



# How Much Gas is Flowing Through the Station?

## Total Gas Through Borger Station



**OPERATIONAL  
EXCELLENCE**

**139,436,204.19 mscf of natural gas through the station in 2020.**

**99,248,749 mscf of natural gas through the station in 2021.**

***\*\* mscf = thousands of standard cubic feet of gas***



# REDUCE METHANE



# Borger Station Methane Reduction

## Proactive Controls



**ENVIRONMENTAL  
RESPECT**

**The company began a program in 2019 of conducting voluntary leak detection and repair (LDAR) surveys for facilities that are not otherwise required to do so. Over 1,100 voluntary surveys of compressor stations, wells and M&R facilities have been conducted.**

**Borger Station is subject to quarterly LDAR survey requirements and was surveyed in January and February of 2022.**

**The company purchased a seal gas boost system for Borger Unit #4 in 2020 which allows the unit to remain in pressurized hold (minimizing the frequency of unit blowdowns). Although purchased in 2020, installation of the system was completed in 2021 due to operating conditions.**

**The Borger 2/3 Replacement Project that began in 2021 is nearly completed**  
*(see slide 24 for discussion).*



# STATION UPGRADES



# Borger Replacement Project

## Borger 2/3 Replacement Project – In Service February 2022



**OPERATIONAL  
EXCELLENCE**



**ENVIRONMENTAL  
RESPECT**

- ✓ Replace two (2) existing turbines with more efficient new units that will reduce air emissions.
- ✓ Install an oxidation catalyst on an existing turbine to further reduce air emissions.
- ✓ Install three (3) new microturbines.
- ✓ Replace blowdown silencers/vents to allow for capped emergency shutdowns to further reduce air emissions.
- ✓ Replace an aging boiler system and install other minor station piping and updates
- Replace the existing fencing with a new dark-green vinyl-coated chain link fence & upgrade landscaping.



# Customer Satisfaction



CUSTOMER  
SERVICE

**MASTIO recently published the 2022, 26th Edition of the industry-wide Natural Gas Pipeline Customer Value / Loyalty Benchmarking Study.**

**BHE Pipeline Group finished with the top ranking in the Major Organizational Group category in the latest edition of the Mastio & Company Customer Satisfaction Survey.**

**The Mastio & Company pipeline customer satisfaction survey is conducted annually and is considered by many in the industry as a benchmark of pipeline customer service. BHE Pipeline Group has finished in first place for 17 consecutive years.**



# Employee Safety



Continuing BHE GT&S' strong track record for safety, two of the company's businesses recently received the American Gas Association's high honors for motor vehicle safety performance in 2021:

Medium Transmission Company Category:

- ***BHE GT&S Carolina Gas Transmission*** – Medium Transmission Company: Safety Achievement Award earned by experiencing the lowest incident rate for the number of Days Away from work, Restricted or Transferred (DART) among companies of their size and type, based on a normalized number of annual hours worked per employee.

All Transmission Companies Category:

- ***BHE GT&S Carolina Gas Transmission*** - Safety Achievement Award earned by experiencing the lowest motor vehicle accident rate for companies of their type.

Large Transmission Company Category:

- ***BHE GT&S Eastern Gas Transmission & Storage*** - Accident Prevention Certificate earned by achieving a DART-incident rate below the industry average for their company type.



*Thank you*

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