

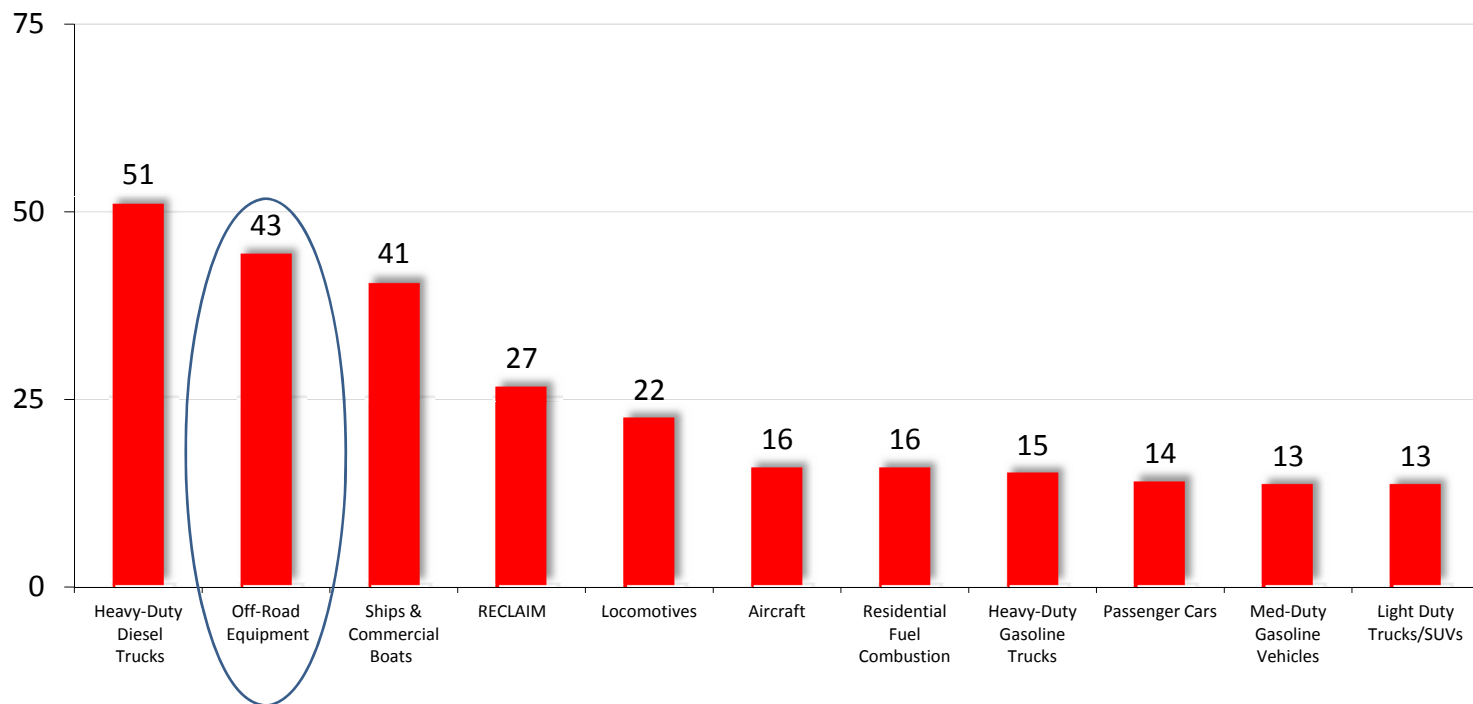
Off-Road Equipment Emissions Inventory and Regulatory and Incentives Programs






Working Group Meeting No. 1
February 24, 2015

Off-Road Equipment Emission Inventory








Largest NOx Sources in 2023 (TPD)



Off-Road Commercial/Industrial Equipment

Category	Equipment	
Construction and Mining	Dozers, Loaders, Scrapers, Excavators	
Commercial	Compressors, Generator Sets, Pumps, Pressure Washers, Welders	
Industrial	Aerial Lifts, Forklifts, Sweepers, Material Handling Equipment	

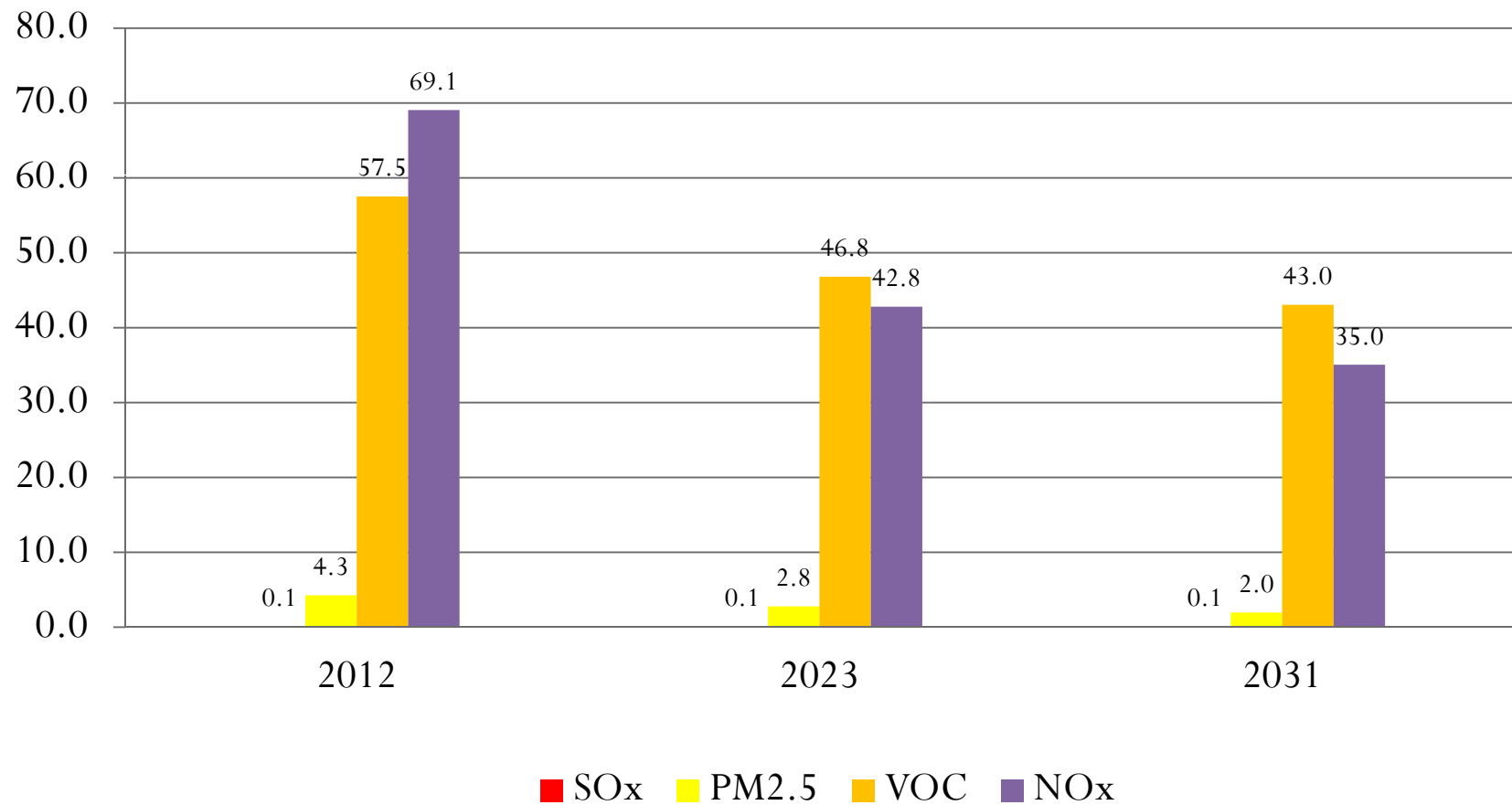
Off-Road Commercial/Industrial Equipment

Category	Equipment	
Transport Refrigeration Unit (TRU)	Truck, Trailer, Container, Railcars	 
Lawn and Garden	Mowers, Trimmers, Edgers, Chippers, Grinders, Leaf Blowers/Vacuums	  
Ground Support Equipment (GSE)	Baggage and Airplane Tugs, Cargo Tractors, Generators, Belt Loaders	 

2023 Emissions (TPD)

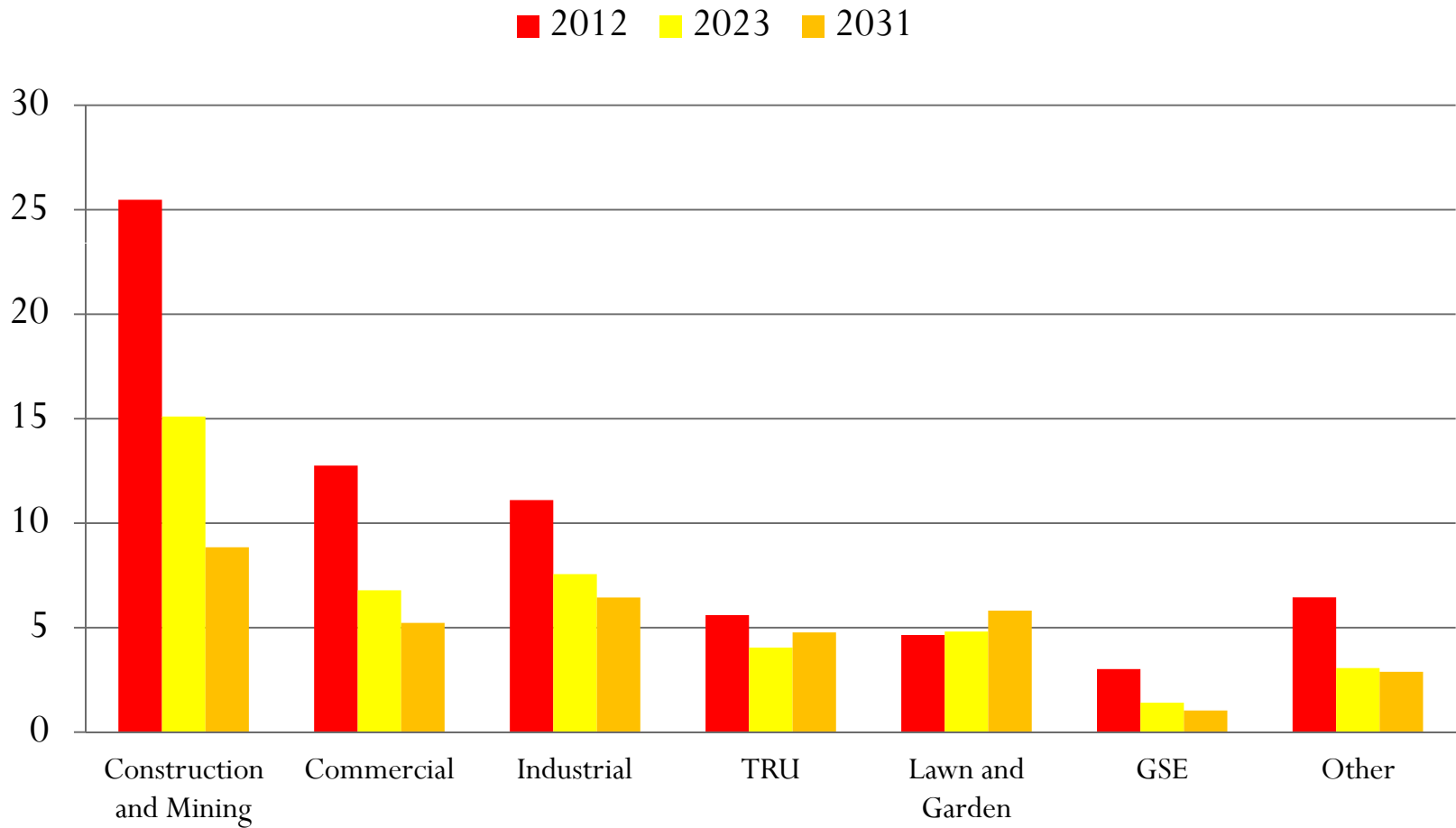
Category	NO _x	VOC	PM 2.5
Construction and Mining	15.1	2.6	0.91
Commercial	6.8	5.3	0.77
Industrial	7.6	1.6	0.27
Transport Refrigeration Unit (TRU)	4.1	0.4	0.03
Lawn and Garden	4.8	36.0	0.69
Ground Support Equipment (GSE)	1.4	0.4	0.05
Other	3.0	0.13	0.07
Total	42.8	46.8	2.8

Total Emissions (TPD)



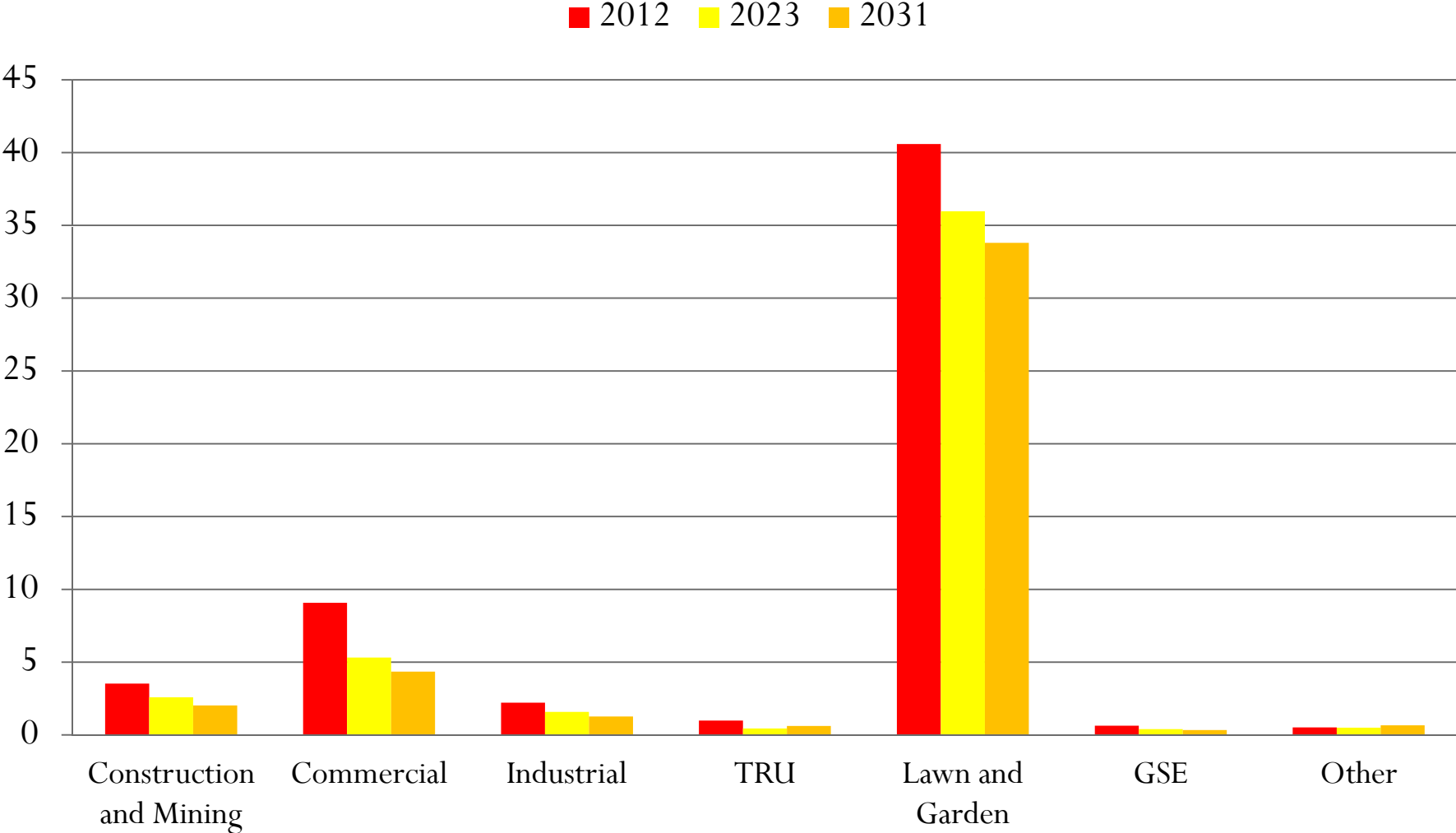
NOx Emissions (TPD)

(Summer Planning)

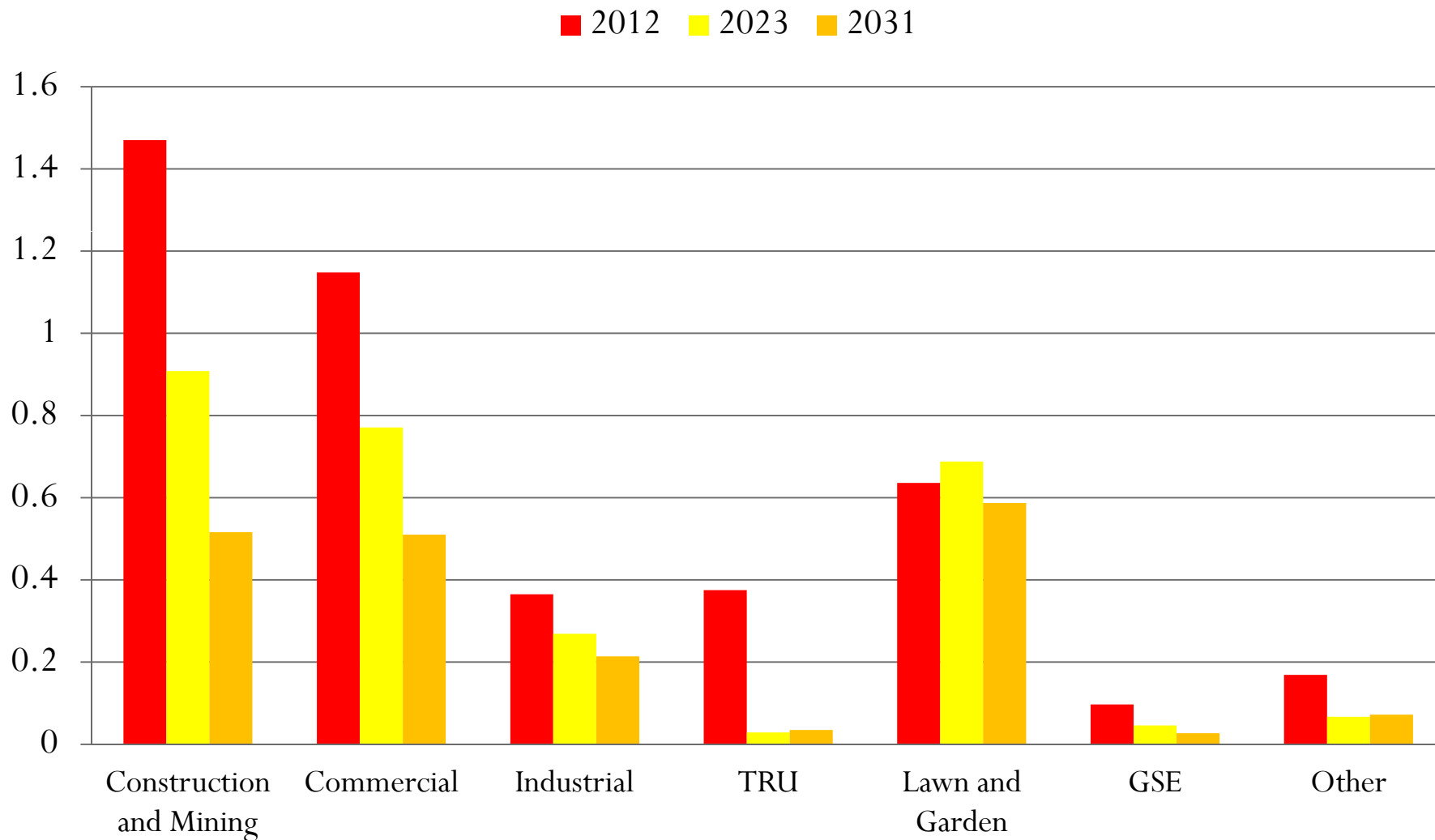


VOC Emissions (TPD)

(Summer Planning)

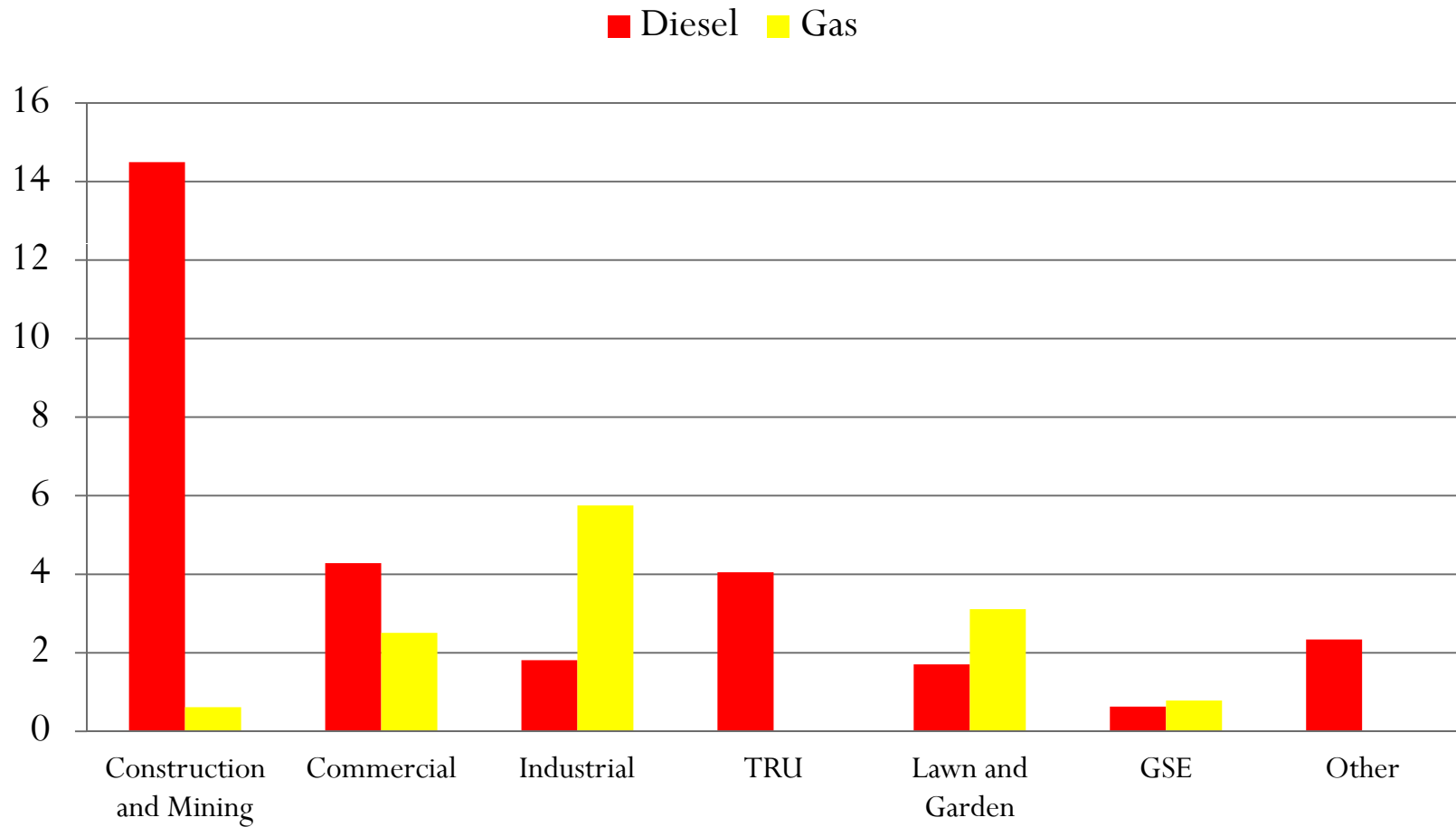


PM2.5 Emissions (TPD) (Annual Average)



2023 NOx Emissions (TPD)

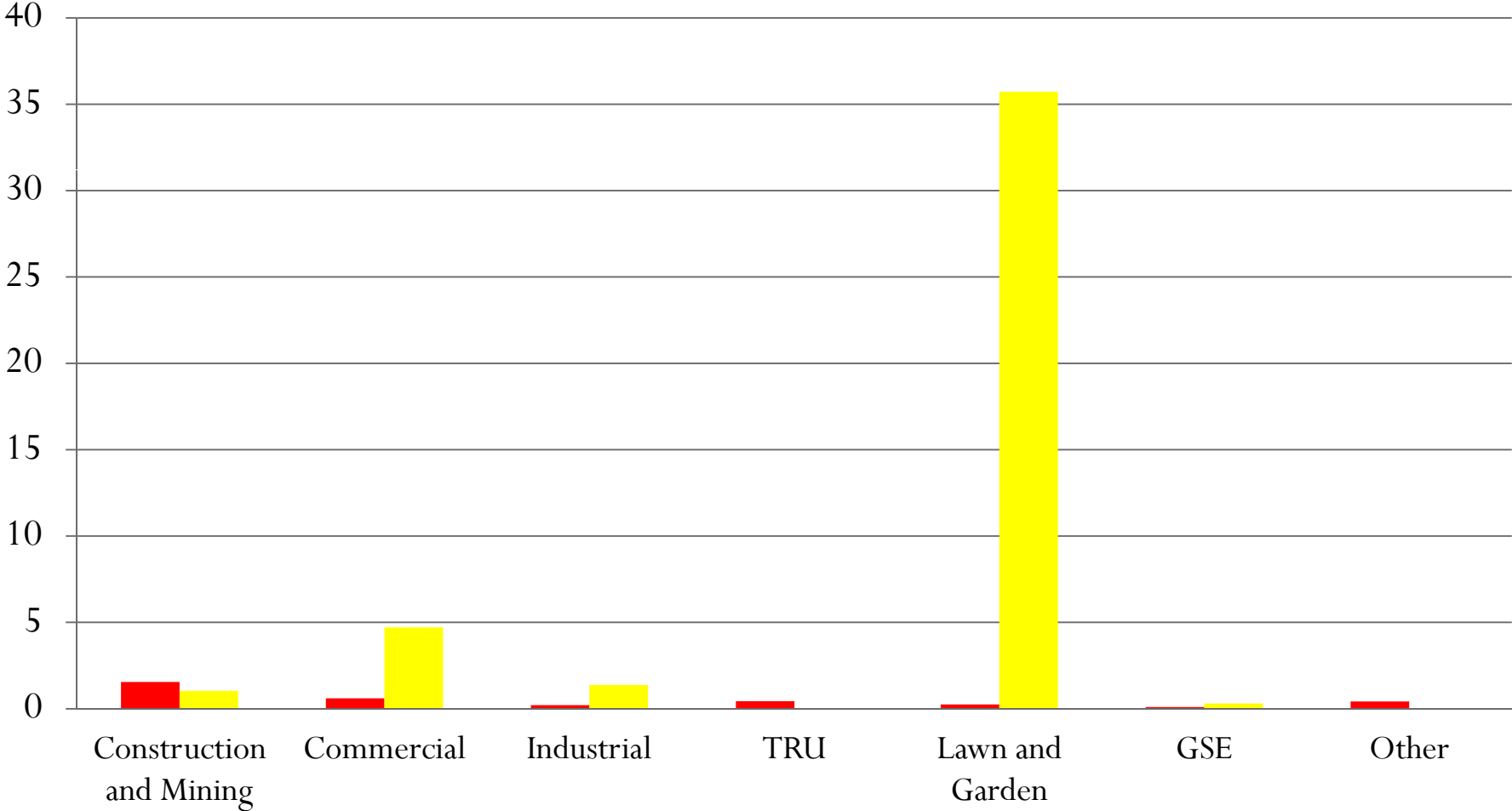
(Summer Planning)



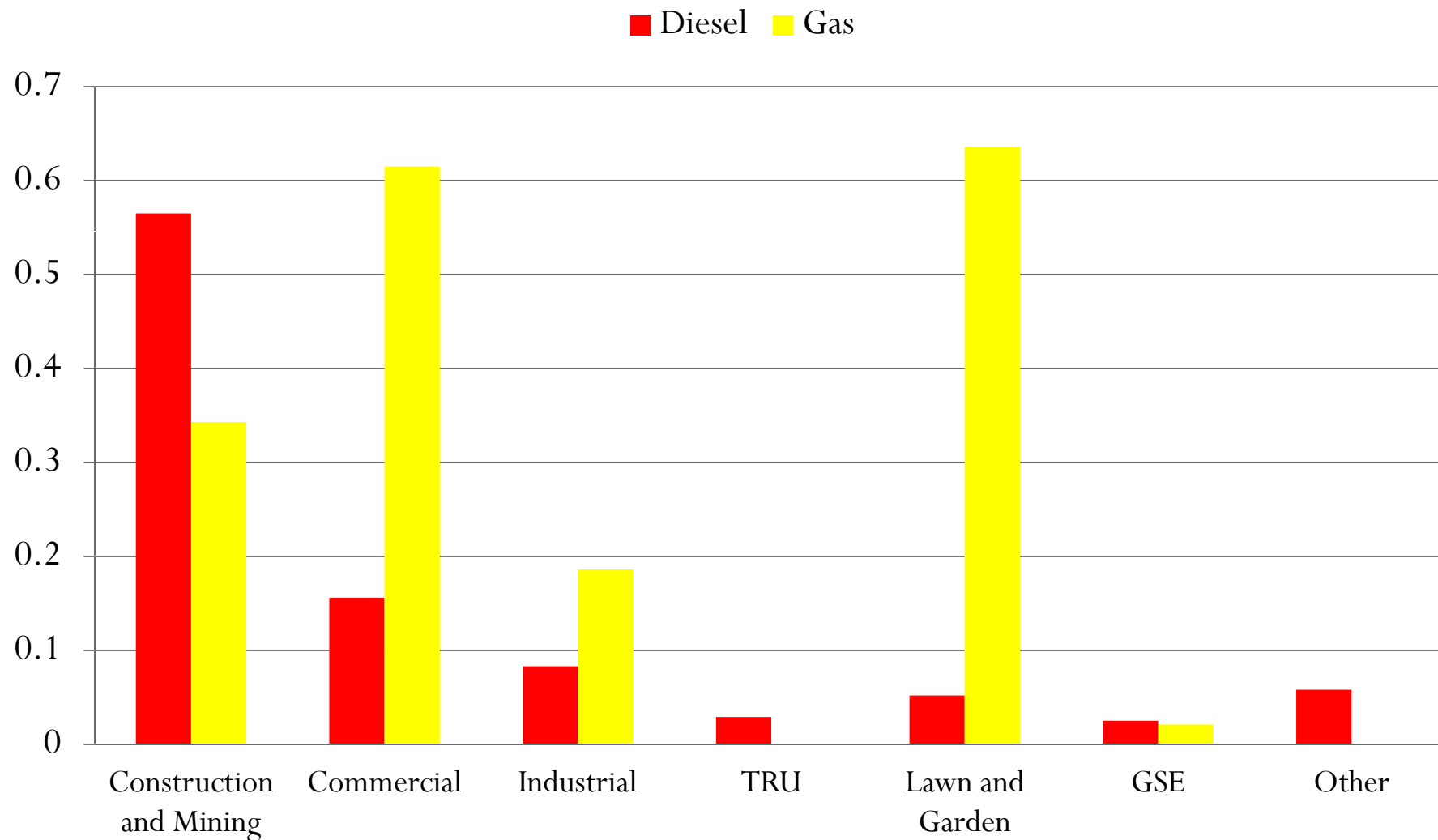
2023 VOC Emissions (TPD)

(Summer Planning)

■ Diesel ■ Gas



2023 PM2.5 Emissions (TPD) (Annual Average)



**Off-Road
Equipment -
Current Regulations and
Incentive Programs**

Off-Road Regulations/Programs

- Construction and Mining, Industrial, Cargo Handling, and Ground Support Equipment
 - U.S. EPA
 - New Engine Standards
 - CARB
 - New Engine Standards
 - In-Use Fleets – diesel and non-diesel fueled equipment
 - Portable Engine Airborne Toxic Control Measure (ATCM)
- Commercial Equipment
 - U.S. EPA
 - New Engine Standards
 - CARB
 - New Engine Standards
 - Portable Engine ATCM

Off-Road Regulations/Programs

- Transport Refrigeration Units (TRU)
 - U.S. EPA
 - New Engine Standards
 - CARB
 - New Engine Standards
 - TRU ATCM
- Lawn and Garden
 - U.S. EPA
 - New Engine Standards
 - CARB
 - New Engine Standards
 - Portable Engine ATCM

Funding Incentives Programs

- State Local
 - SB1107, AB 923, AB 8 – Carl Moyer Memorial Fund
 - Proposition 1B Goods Movement
 - AB 118 Program
 - SCAQMD Rule 2202 AQIP
- Federal
 - U.S. EPA Diesel Emissions Reduction Act (DERA)