



THE PORT
OF LOS ANGELES 

A M E R I C A ' S P O R T ®

2023 Inventory of Air Emissions

CAAP 2023 Target Year

Presented by:

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Environmental Management

Presented to:

Board of Harbor
Commissioners



San Pedro Bay Ports are Working Together to Reduce Environmental Impacts

POLA Air Emission Changes - 2023 Against 2005 Baseline

-24% 

Greenhouse Gases

-74% 

Nitrogen Oxides

2023 Goal: -59%

+15% 

TEUs

-91% 

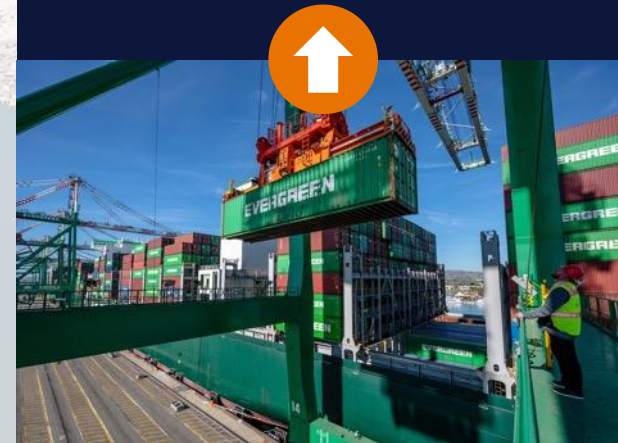
Diesel Particulate Matter

2023 Goal: -77%

-98% 

Sulfur Oxides

2023 Goal: -93%



San Pedro Bay Ports are Working Together to Reduce Environmental Impacts

POLA Air Emission Changes - 2023 Against 2017 Baseline

-14% 

Greenhouse Gases

-34% 

Nitrogen Oxides

-8%

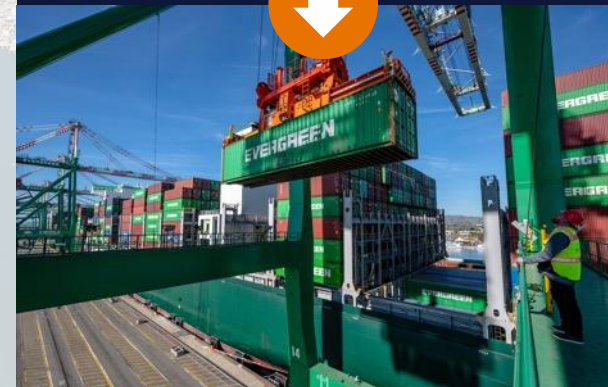
TEUs

-18% 

Diesel Particulate Matter

-28% 

Sulfur Oxides



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POLA Air Emission Changes - 2023 vs 2022

-20% 

Greenhouse Gases

-29% 

Nitrogen Oxides

-13%

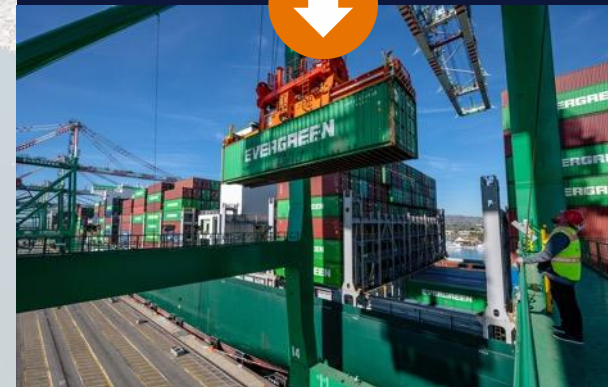
TEUs

-24% 

Diesel Particulate Matter

-40% 

Sulfur Oxides





Emissions Inventory Background

- CAAP based program
- Longest Running, Most Detailed Port EI program globally
- Annual activity-based
 - 2001, 2005 – 2023
- Source categories
 - Ships • Harbor Craft • Cargo Handling Equipment • Trucks • Locomotives
- Pollutants
 - PM • PM₁₀ • PM_{2.5} • DPM • NO_x • SO_x • HC • CO
- Greenhouse gases
 - CO₂ • CH₄ • N₂O • CO₂e
- <https://www.portoflosangeles.org/environment/air-quality/air-emissions-inventory>

Geographical Boundary





Emissions Inventory Coordination

- Coordination annually with Technical Working Group:

- US Environmental Protection Agency
- California Air Resources Board
- South Coast Air Quality Management District



- Technical Working Group Meetings:

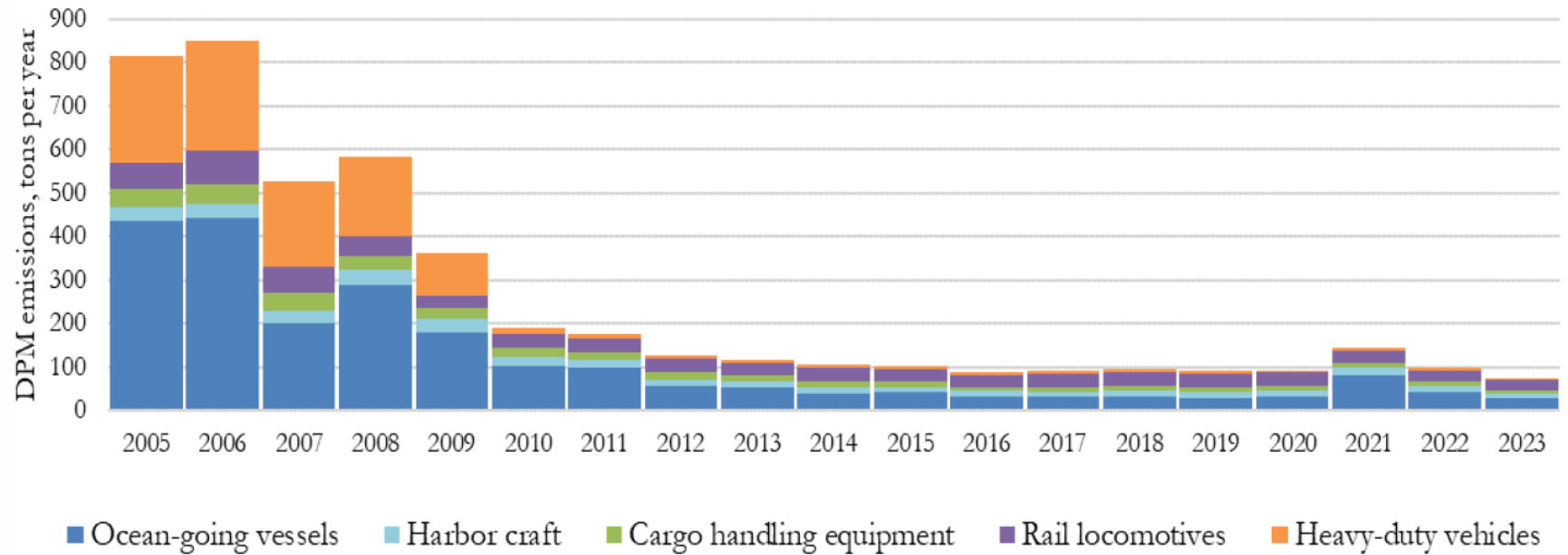
- Oct. 19, 2023 - Kick-off
- June 19, 2024 – Document Release for Peer Review
- July 16, 2024 – TWG Discussion
- August 8, 2024 – Follow up TWG Discussion



- 3rd Party QA/QC of Data Quality and Emission Calculations
- Coordination with Port Tenants

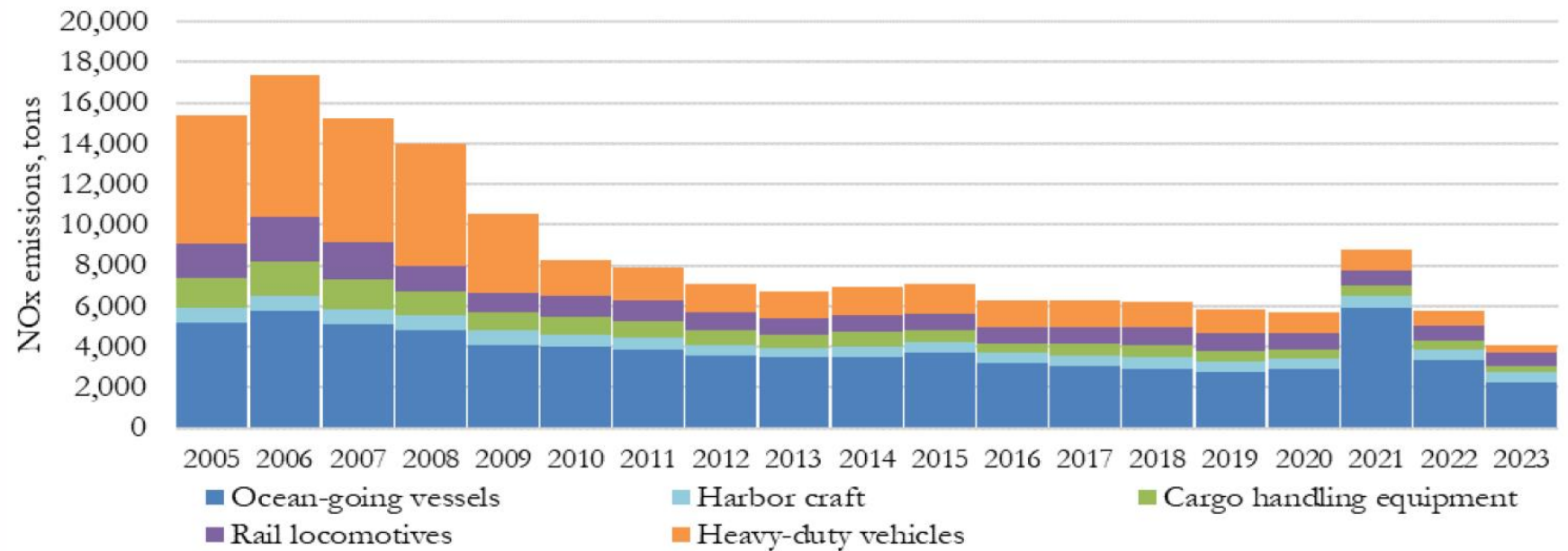
Emissions Trends Since 2005

Diesel Particulate Matter (DPM)



Emissions Trends Since 2005

Oxides of Nitrogen (NOx)



What's Driving the 2023 Reductions?

- Lower throughput than 2022 resulted in less overall activity
- CAAP Implementation + Regulations
 - Clean Truck Program and Fleet Turnover
 - Engine Standards Reducing Emissions from Newer Engines
 - Vessel Speed Reduction
 - Alternative Maritime Power/Shorepower
 - Engine/Equipment Turnover Incentives
 - Cleaner Fuel Standards
- Goods Movement Industry Investment in Efficiency Improvements
 - Bigger, Fewer Ships
 - Terminal Improvements and Technology Development
 - Zero Emission Equipment

San Pedro Bay Ports are Working Together to Reduce Environmental Impacts

Air Emission Improvements Per 10,000 TEUs 2023 Compared to 2005 Baseline

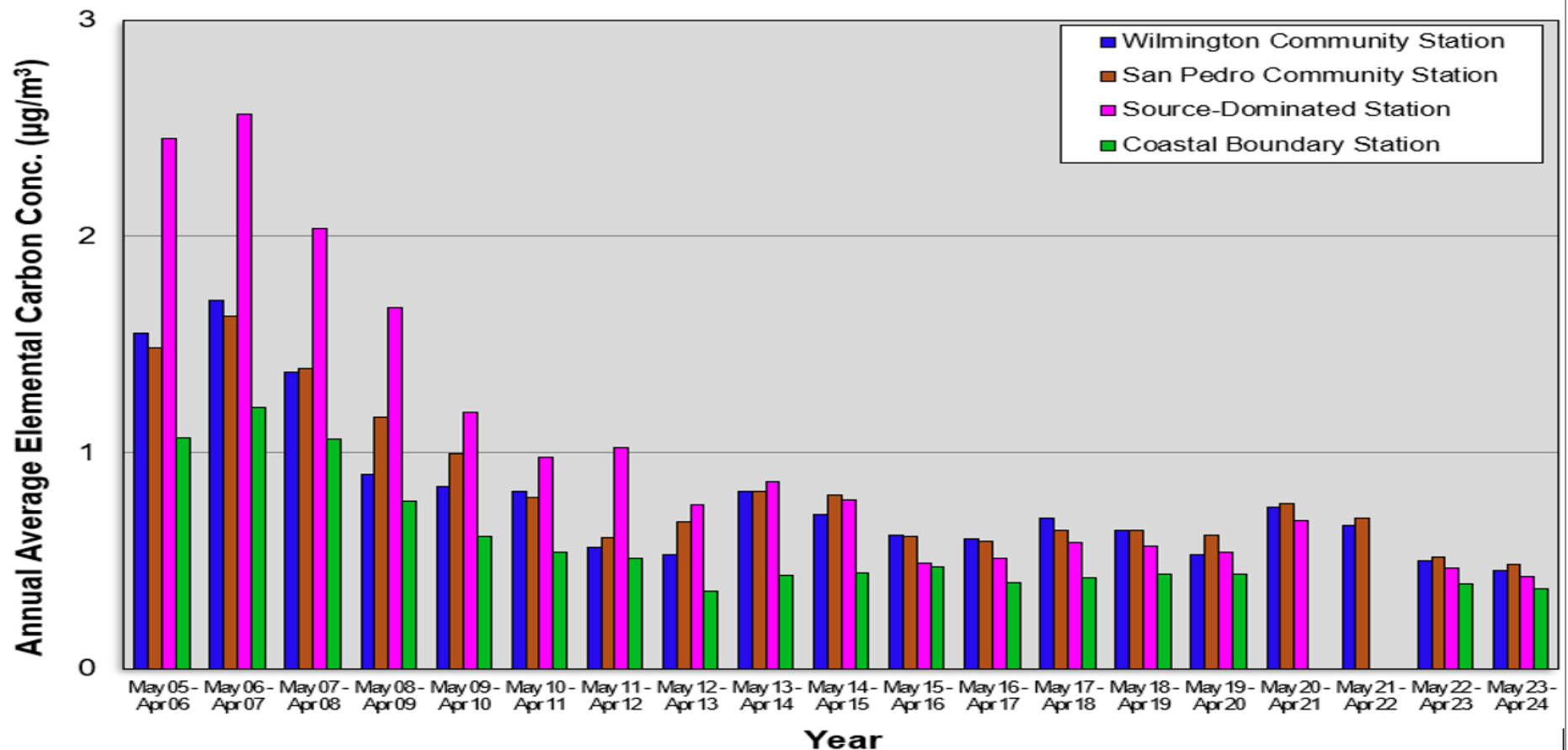
	Diesel Particulate	Nitrogen Oxides	Sulfur Oxides	Greenhouse Gases
2005	1.09 tons	20.57 tons	6.45 tons	1,359 tons
2023	0.086 tons	4.73 tons	0.09 tons	896 tons
Efficiency Improvement	92%	77%	99%	34%

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Air Emission Improvements Per 10,000 TEUs 2023 Compared to 2017 Baseline

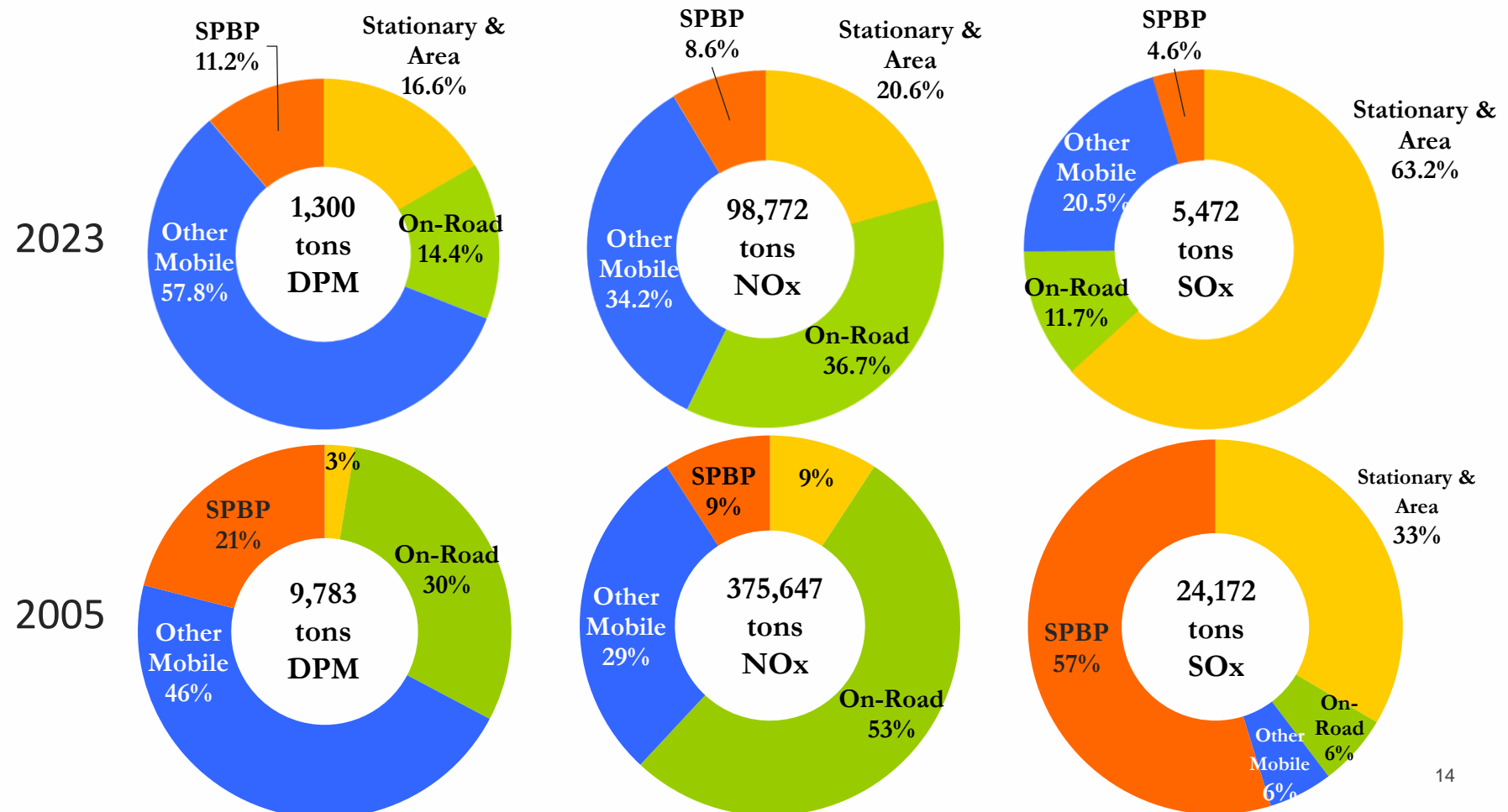
	Diesel Particulate	Nitrogen Oxides	Sulfur Oxides	Greenhouse Gases
2017	0.098 tons	6.66 tons	0.12 tons	959 tons
2023	0.086 tons	4.73 tons	0.09 tons	896 tons
Efficiency Improvement	12%	29%	25%	7%

Air Monitoring Program



Note: SFS PM_{2.5} monitoring at Coastal Boundary station suspended May 2020 - April 2022, resumed May 2022.
 SFS PM_{2.5} monitoring at Source-Dominated station suspended May 2021 - April 2022, resumed May 2022.

San Pedro Bay Ports Regional Contributions



Looking Ahead

- Shipping Corridors Implementation
 - Deploying Carbon Neutral Ships
- ZE Truck Deployment Support
- Terminal Electrification
 - LADWP Upgrades
- Implementation of ZE Projects
 - Development of alternative fuel opportunities including Hydrogen Hub
 - Grant opportunities
- Vessel Incentive Programs
- At-Berth Compliance (expanded to RoRo, Tanker, Auto Carriers)



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THANK YOU



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