

## POLICY PRIORITY

## PAKISTAN

## How can Pakistan implement a cap-and-trade system to reduce urban air pollution while mitigating the economic challenges of transitioning to cleaner technologies?

Rapid urbanisation and industrialisation have degraded air quality in Pakistan's cities, posing severe health and environmental risks. Policymakers are increasingly interested in finding solutions to balance economic growth with environmental protection. Cap-and-trade, a market-based mechanism for reducing emissions, could be an effective policy tool for Pakistan. This document introduces cap-and-trade as a possible mechanism to reduce air pollution while supporting economic development.

### Policy challenge

Despite existing air quality policies, such as the Punjab Smog Policy 2017, Pakistan struggles with enforcement due to weak monitoring systems and poor coordination between federal and provincial authorities. A cap-and-trade system, which relies on accurate emissions data, would require substantial upgrades to the current regulatory framework to function effectively. Without improved infrastructure for real-time emissions tracking, effective enforcement remains unlikely.

Industries such as textiles, cement, and steel are major contributors to urban pollution, and transitioning to cleaner technologies is both costly and time-consuming. These sectors may resist adopting cap-and-trade due to the financial burden, unless supported by regulatory incentives like tax breaks or subsidies. Furthermore, Pakistan's limited experience in carbon markets, coupled with economic volatility, complicates the establishment of a functional emissions trading system, requiring careful planning and regulatory oversight.

Urban transportation also contributes significantly to air pollution, with many private vehicles failing to meet modern emission standards. To succeed, a cap-and-trade system must address vehicle emissions and the inadequate public transportation infrastructure. Additionally, seasonal smog, especially in Punjab, requires the system to incorporate dynamic caps and flexible measures to accommodate fluctuations in pollution levels, particularly during winter months.

### Data

- [Pakistan Environmental Protection Agency \(EPA\) air quality reports](#): Monitoring data on urban air pollutants, including PM2.5, PM10, and NOx.
- [Vehicle data](#): The number of vehicles on the road and their categorisation.
- [Air Quality Index \(AQI\)](#): Real-time data from monitoring stations in major cities, including Lahore, Karachi, Islamabad, and Peshawar.
- [Baseline Emissions Data](#): Data on industrial and vehicular emissions.



## Stakeholders

- Pakistan Environmental Protection Agency (EPA): Implement and enforce environmental regulations at the provincial level.
- The Urban Unit: Responsible for collecting spatial and remote sensing data for cities as well as for collecting data related to land-use planning and regulations.
- Federal Board of Revenue (FBR): Can provide access to industry and firm specific data to gauge emission levels.
- Energy and Transport Ministries: Key players in transitioning towards cleaner vehicle technologies and reducing emissions from energy production.
- Ministry of Climate Change: Oversees national climate policies, including air quality management.
- State Bank of Pakistan: Establishing trading platforms and monitoring financial markets for emissions trading.
- Power generation companies (public and private): As the energy sector is a major emitter, power companies must be involved in carbon credit trading and adopting cleaner technologies.