

Table 18. Emission standards.

Initiative 16: Emission Standards	
Description: Enforcement of emission standards for freight vehicles, which may involve the use of electric or low-emission vehicles for urban deliveries. A number of vehicle renewal programs support this type of initiative.	
Targeted mode: All traffic	Geographic scope: Nation
Type of initiative: Vehicle-related strategies	Primary objective: Environmental sustainability
Expected costs and level of effort to implement: This type of initiative involves minor costs to update policies and standards on emissions, but the public-sector cost of enforcement could be high. High private-sector capital investments in fleet renewal could be involved. The implementation of emission standards is expected to take moderate time.	
Advantages: <ul style="list-style-type: none"> • Environmental sustainability • Enhance livability • Enhance efficiency • Reduce operational costs • Low probability for unintended consequences 	Disadvantages: <ul style="list-style-type: none"> • Require high capital investments for the private sector • May require coordination, control and enforcement among municipalities • Depend on other public entities' standards • May require investments in additional infrastructure to support new technologies (e.g., charging stations, alternative-fuel supply) • Require private-sector cooperation
Examples: <ul style="list-style-type: none"> • U.S. EPA Emission Standards • California Air Resources Board's (ARB) Transport Refrigeration Unit Airborne Toxic Control Measure (California Environmental Protection Agency 2012) • Euro VI standards (European Commission 2012) 	
Renewal Programs: <ul style="list-style-type: none"> • U.S. EPA SmartWay program • Plug In America (Plug In America 2013) • The Hong Kong Environmental Protection Department Program and Pilot Green Transport Fund (Hong Kong Environmental Protection Department 2011) • PIEK Program, the Netherlands (Goevaers 2011) 	
Related alternatives: 1. Low Noise Delivery Programs/Regulations ; 2. Engine-Related Restrictions ; 3. Low Emission Zones ; 4. Operational Incentives for Electric/Low Emission Vehicles ; 5. Taxation	
References: City Ports 2005; BESTUFS 2007; TURBLOG 2009; C-LIEGE 2010; Hong Kong Environmental Protection Department 2011; ICF International et al. 2011; California Environmental Protection Agency 2012; Environmental Protection Agency 2012; European Commission 2012; Plug In America 2013; U.S. Environmental Protection Agency 2013	

