



# Transport Pricing Methodology Executive summary

Download the methodology at  
[www.climateactiontransparency.org/icat-toolbox/transport-pricing](http://www.climateactiontransparency.org/icat-toolbox/transport-pricing)

*The transport sector is responsible for approximately 18% of global greenhouse gas (GHG) emissions, and experts predict that economic growth could cause transport activity to double by 2050. A fundamental transformation is needed if the sector is to play its part in the transition to net zero global GHG emissions in the second half of the 21st century. Pricing policies, such as removing fuel subsidies or increasing fuel taxes, can play an important role in reducing GHG emissions. These can be considered win-win policies because of the multitude of environmental, social and economic benefits they bring.*

*Three international agreements outline a collective strategy for climate change and sustainable development, and emphasize the urgency of action in the transport sector: the Paris Agreement, the 2030 Agenda for Sustainable Development, and the New Urban Agenda. To meet the aim of the Paris Agreement to hold the increase in global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, deep emissions reductions are required in the transport sector. The urgency of a transition towards net zero global GHG emissions, and the integral role of the transport sector in achieving this, were underlined in the 2018 Special Report on Global Warming of 1.5°C by the Intergovernmental Panel on Climate Change.*

*In this context, there is an increasing need to assess and communicate the impacts of transport policies to ensure that they are effective in mitigating GHG emissions, and helping countries meet their sectoral targets and national commitments. The Initiative for Climate Action Transparency (ICAT) Transport Pricing Methodology helps policymakers assess the impacts of pricing policies in the transport sector and improve their effectiveness. It can play a critical role in providing the information needed for preparing reports under the Paris Agreement's enhanced transparency framework and for the United Nations Sustainable Development Goals (SDGs). The methodology can also help policymakers engage stakeholders in the design and implementation of policies, which can play an important role in managing social concerns and ensuring the success of new transport pricing policies.*

## Assessing the impacts of transport pricing policies

Transport pricing policies seek to influence transport demand and reduce GHG emissions by changing the relative cost of different transport options to more accurately reflect their true costs. For example, if a fuel subsidy is removed or reduced, and the funds are instead invested in public transport infrastructure, private vehicle travel is likely to fall and public transit use increase.

Assessing the impacts of transport pricing policies supports evidence-based decision-making by enabling policymakers and stakeholders to understand the relationship between policies and actions (hereafter referred to as "policies", for brevity) and their expected GHG and other impacts. Policymakers and other users can apply the ICAT *Transport Pricing Methodology* to assess these impacts, pursuing one or several of the objectives of transparency, including to:

- improve policy design and implementation by understanding the impacts of different design and implementation choices
- inform goal setting by assessing the potential contribution of policies to national goals such as national transport strategies or action plans, nationally determined contributions (NDCs) and the SDGs
- track progress towards these goals and understand the contribution of policies to achieving them
- provide information for reporting domestically or internationally, including under the Paris Agreement's enhanced transparency framework
- attract finance by demonstrating the results of effective policies.

## Series of ICAT assessment guides

ICAT aims to help countries assess the impacts of their climate actions, and to support greater transparency, effectiveness, ambition and trust in climate policies worldwide. The *Transport Pricing Methodology* is part of the ICAT series of guides for assessing the GHG, sustainable development and transformational impacts of policies and actions in an integrated way. The guides are a result of collaboration with technical experts from around the world.

The ICAT *Transport Pricing Methodology* can be used on its own or together with other ICAT guides.

### SERIES OF ICAT ASSESSMENT GUIDES

Introduction to the ICAT Assessment Guides

#### Impact assessment guides

##### Greenhouse gas impacts:



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Transport Pricing



Forestry



Agriculture



Buildings Efficiency



Sustainable Development



Transformational Change



Non-State and Subnational Action

#### Process guides



Stakeholder Participation



Technical Review

The assessment guides have been used to support capacity building for transparency in more than 20 countries. Case studies are available on the ICAT website. To learn more about how ICAT supports countries, visit [www.climateactiontransparency.org](http://www.climateactiontransparency.org).

## Intended audience

The primary intended users of the *Transport Pricing Methodology* are developing country governments and their partners (domestic and international) who are planning, implementing and assessing transport pricing policies, particularly in the context of development and implementation of NDCs, national low-emission development strategies, nationally appropriate mitigation actions (NAMAs) and other mechanisms. Other stakeholders who are affected by, or can influence, the policy – such as research institutions, funders, financial institutions, non-governmental organizations and companies – can also use the methodology. The methodology can be used at the national, subnational or municipal level.

## Main impacts of transport pricing policies

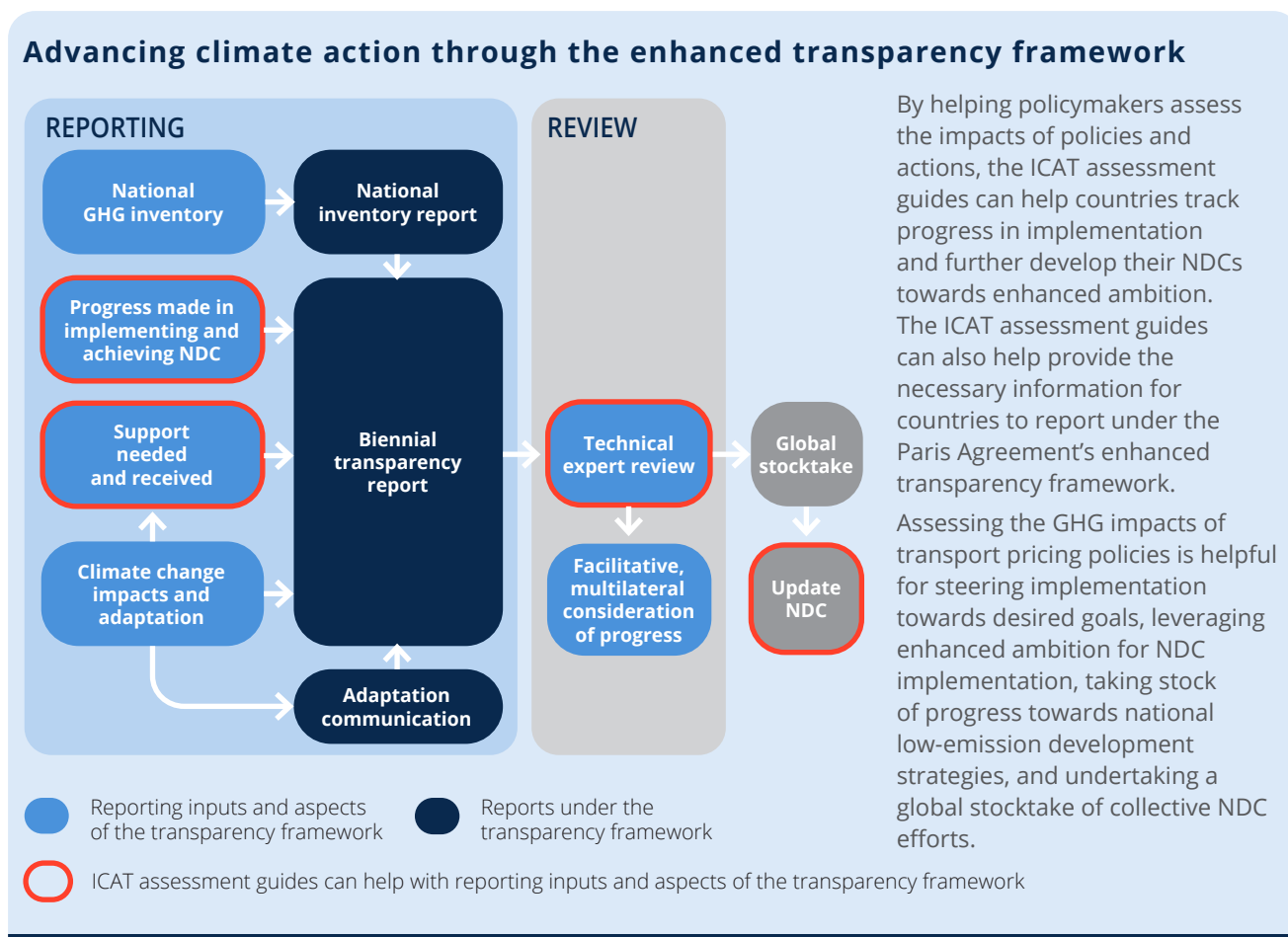
Transport pricing policies can change behavior and reduce GHG emissions in three main ways:

- **reduced vehicle travel**, such as motorists responding to higher fuel prices by driving less
- **shift to more efficient modes of transport**, such as motorists switching to use public transit, or logistics companies moving freight by rail instead of road
- **shift to more fuel-efficient vehicles and alternative-fuel vehicles**, such as motorists purchasing smaller cars and electric vehicles.

The extent to which a pricing policy successfully brings about these changes depends partly on the quality and availability of substitutes such as public transit and a rail network for transporting freight, and the ability of these alternatives to compete in the market.

There may also be rebound effects – for example, if revenue raised through a pricing policy is spent on new roadways, thereby encouraging more vehicle travel.

Besides emissions reductions, effective transport policies contribute to sustainable development in many ways, such as through changes in air quality, public health, traffic congestion, road safety, energy security and the level of government budget surplus or deficit. For example, removing fuel subsidies reduces vehicle kilometres travelled and encourages a shift to public transit, which in turn leads to reduced emissions of air pollutants such as particulate matter, along with fewer deaths and injuries from road traffic accidents.



The methodology helps identify these sustainable development impacts and links them to the SDGs. The ICAT *Sustainable Development Methodology* can be used to assess the broad environmental, social and economic impacts of transport pricing policies. Identifying and assessing these impacts can play an important role in making the case for changes to transport pricing, and ensuring that policies are understood and supported by society.

Implemented in the right way, transport pricing policies can lead to significant changes in a transport system. If this is fundamental and sustained change that disrupts established high-GHG emissions pathways and contributes to zero-carbon development, it can be considered to be transformational change. For example, pricing policies are more effective and their impact is likely to be longer lived if revenues are used to improve low-carbon travel, such as through expanded pedestrian and cycling infrastructure or public transit services. The ICAT *Transformational Change Methodology* provides a way to assess these transformational impacts. As with the *Sustainable Development Methodology*, it is designed to be used in conjunction with the *Transport Pricing Methodology*.

### Types of policies covered by the methodology

Pricing policies can be an important lever in bringing about change in the transport sector. The methodology provides extensive background on transport pricing policies and applies to the following pricing instruments:

- **fuel subsidies** – removal of subsidies that reduce the price of vehicle fuel below its fair-market cost
- **fuel taxes and levies** – an increase in the tax imposed on each unit of vehicle fuel, including general taxes that apply to many goods and taxes that are specific to vehicle fuel
- **road pricing** – introduction of road tolls and congestion pricing, whereby motorists pay to drive on a particular roadway or enter a specific area
- **purchase incentives for more efficient vehicles** – programmes that encourage the purchase of electric, plug-in hybrid-electric and other more efficient vehicles through lower purchase taxes, purchase rebates, income tax credits and lower vehicle taxes.

The methodology can be used to assess a single pricing policy or a package of related policies.

The methodology does not cover all transport policies, but rather aims to fill gaps in existing guidance. The *Compendium on Greenhouse Gas Baselines and Monitoring: Passenger and Freight Transport* (published by the United Nations Framework Convention on Climate Change and GIZ) provides descriptions and links to guidance on other transport policies and actions.

### Using the methodology during policy design and implementation

The methodology can be used at different stages of a policy design and implementation cycle: before, during or after policy implementation. It can be used to conduct forward-looking assessments of future impacts, as well as backward-looking assessments of past impacts.

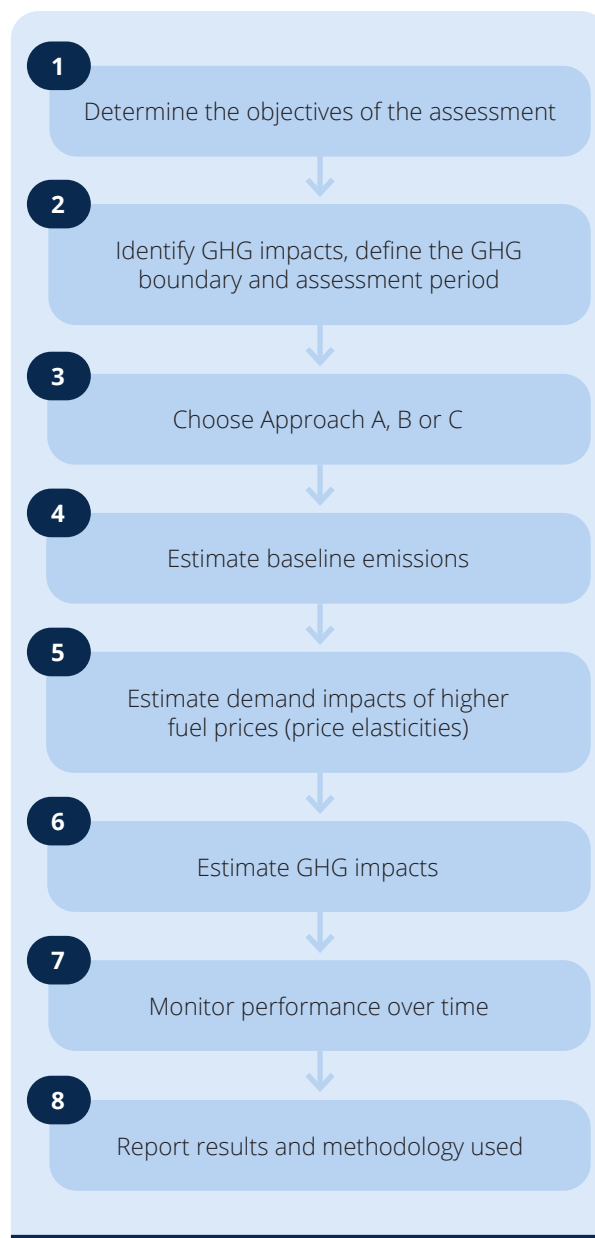
A country's needs and objectives will determine when to use the methodology. For example, if a country wants to improve the design of a policy or set transport sector goals, the methodology would be used before policy implementation.

If a country wants to track progress in implementing its NDCs and report the results under the enhanced transparency framework, the methodology would be used during or after policy implementation. For demonstrating the results of a policy to a funder, the methodology would likewise be used during or after policy implementation.

If the methodology is used at multiple stages in a policy design and implementation cycle, it becomes an iterative process, such that previous experience informs improvements to policy design and implementation, and the development of new policies.

### Main steps of the methodology

The methodology provides a stepwise method for estimating the GHG impacts of transport pricing policies.





	Approach	Data requirements	Boundaries	
			Geography	Passenger/ freight
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Rigour of assessment objectives Accuracy of results Availability of data and resources</p>	<p><b>Approach A</b> estimates GHG emissions from gasoline and diesel vehicles together (i.e. single figure for both)</p>	<p>Top-down energy use data; data needed for general fuel consumption only (does not need to be disaggregated by gasoline and diesel)</p>	<p>National, subnational or municipal</p>	<p>Ground transport, passenger and freight</p>
	<p><b>Approach B</b> estimates GHG emissions from gasoline and diesel vehicles separately</p>	<p>Top-down energy use data; data needed for gasoline and diesel consumption</p>	<p>National, subnational or municipal</p>	<p>Ground transport, passenger and freight</p>
	<p><b>Approach C</b> estimates GHG emissions from gasoline passenger cars, diesel buses, and diesel and electric trains separately</p>	<p>Top-down energy use data and bottom-up travel activity data (passenger kilometres); data needed for gasoline, diesel and electricity consumption</p>	<p>Regional, urban</p>	<p>Ground transport, passenger (only)</p>

There are three different approaches for estimating the GHG impacts of a policy. The approach chosen will depend on the objectives of the assessment, the level of accuracy required, and data and resources available.

A major aspect of the methodology is to use price elasticities to estimate the effect of higher fuel prices on transport demand. Own-price elasticities quantify the change in fuel demand in response to a rise in fuel price, such as the extent to which higher

gasoline prices cause motorists to drive less. Cross-price elasticities quantify the change in demand for other transport modes in response to a rise in fuel price, such as the extent to which higher gasoline prices cause motorists to switch to buses and trains. The methodology provides default price elasticity figures for approaches A, B and C.

The methodology contains numerous worked examples to illustrate how it can be used.

