



# Urban Mobility in Ukraine: The 13 billion Euro gap

## The next decade's reform and investment needs

This policy briefing assesses the investment needs and outlines a broad reform agenda for sustainable urban mobility in Ukraine. The proposed reform and investment agenda aims at reducing the reliance on imported fossil fuels, reducing the number of people killed in accidents, improving air quality and reducing costs for citizens, business, and governments. Furthermore, it will support a country wide economic upturn and rapidly produce visible improvements in the everyday-life of Ukrainian people. It is estimated, that – in the next decade – Ukraine will need to invest at least EUR 13 billion in sustainable urban mobility. In order to refinance these investments needs, it is proposed to establish a sustainable urban transport fund fed by an additional fuel levy of UAH 1/litre.

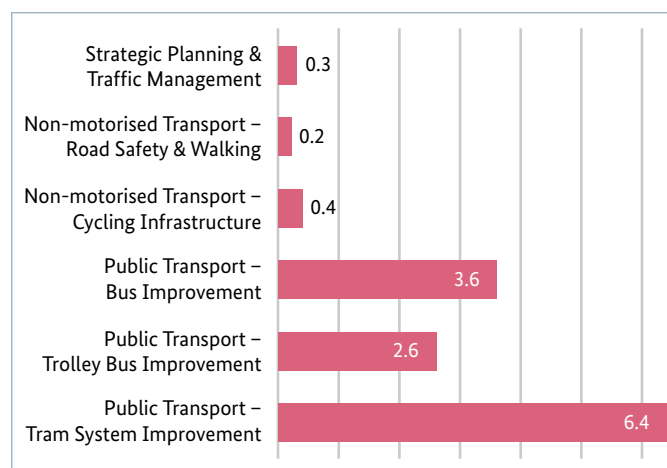


Figure 1: Investments needs in billion Euro.

### Country Overview

Population	44.6 mn (29 <sup>th</sup> rank)
Area	603 000 km <sup>2</sup>
GDP	USD 175 bn
Ø Gross Monthly Salary	EUR 306/USD 405
Human Development Index	0.74 (high, 78 <sup>th</sup> rank)

### 68.9% People living in urban areas

> 1 000 000 inhabitants (large city)	5
500 000–1 000 000 inhabitants (medium-sized city)	4
100 000–500 000 inhabitants (small city)	37
50 000–100 000 inhabitants (large town)	55
20 000–50 000 inhabitants (medium-sized town)	113

### Energy & Transport – Key Figures<sup>[1]</sup>

Total consumption (UA)	75.9 Mt oil equivalent
Share of road transport <sup>[2]</sup>	11.0 %
Share of rail transport	1.1 %
Total share of transport sector	16.6 %
Motorisation	204 vehicles/1 000 people <sup>[3]</sup>

### Fuel Production/Imports<sup>[4]</sup>

Crude oil	2.44/5.68 Mt
Gasoline	2.84/2.21 Mt
Diesel	2.71/3.76 Mt

Red indicates foreign energy dependency

<sup>[1]</sup> Figures for 2011, Source: Ukraine in figures 2012 (State Statistics Service of Ukraine).

<sup>[2]</sup> Thereof 98.2 % oil products, 0.5 % natural gas and 1.3 % (almost entirely) urban electric public transport.

<sup>[3]</sup> Motorisation projected to double until 2030, Source: Urban Transport Strategy of the City Lviv, 2009.

<sup>[4]</sup> Figures for 2011, Sources: Ukraine in Figures 2012 (State Statistics Service of Ukraine), International Energy Agency.

## Context and challenges

Ukraine is facing huge politic, economic and social challenges – this applies to Ukraine’s urban transport system, too. The rising popularity of private cars has Ukraine’s cities firmly in its grip. Congestion, accidents, lack of parking space, air pollution, and overcrowded buses and trains affect urban dwellers and visitors of Ukrainian cities alike.

Urban transport infrastructure and services have encountered enormous devastation and cut-backs since the fall of the Soviet Union. Many electric tram and trolley bus systems are in danger of being shut down due to the lack of investments in infrastructure and rolling stock – Figure 3 shows how re-investment in rolling stock has more or less stopped with the end of the Soviet Union in the early 90s. Limited means for maintenance lead to service cuts in many cities. Inadequate tariff regulations, underfinanced investments programs, and only partially-compensated free-rider privileges are major reasons. Local busses (called ‘Marshrutka’), although financially self-sustainable, offer a low service quality. The vicious cycle of



### Tram Systems in 22 Cities

- 1 927 km, 2 337 coaches, 32 depots;
- Shut down: 2 entire systems (2006–07), 62 km track (2012–14).



### Trolley Bus Systems in 44 Cities

- 4 458 km, 3 237 vehicles, 56 depots;
- Shut down: 3 entire systems (2007–11).



### Metro and Speed Tram Systems in 4 Cities

- 150 km network, 1 139 metro cars, 121 stations;
- Slow and expensive expansion during past years.

Figure 2: Key figures of urban electric transport systems in Ukraine. Source: Ukrelektrotrans

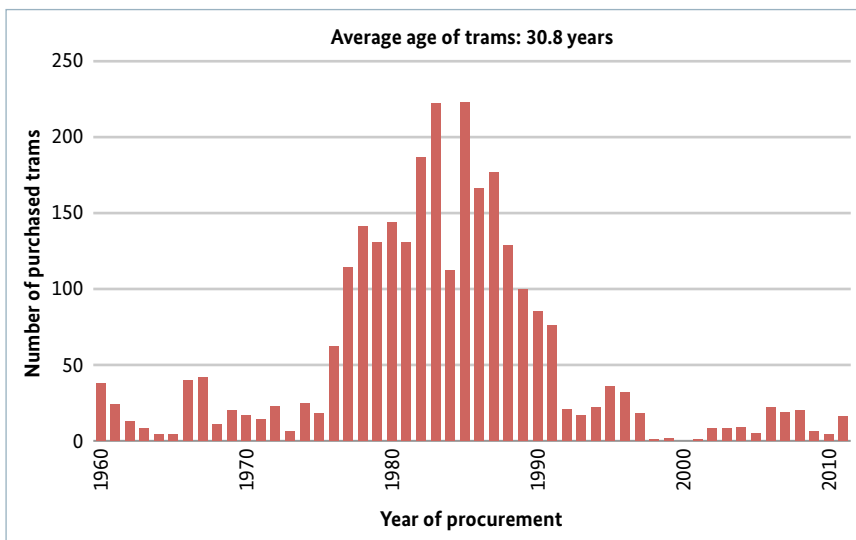


Figure 3: Age of trams in Ukrainian cities. Source: Ukrelektrotrans

low fares (combined with no or limited compensation by the government), limited reinvestment in infrastructure and rolling stock, declining service quality and hence declining ridership resulting in ever less revenues is all too visible in many Ukrainian cities.

Regularly, pedestrians and cyclists are involved in traffic accidents, mainly because of high speeds of motorised traffic and a lack of safe road crossings – on average total more than 4 000 are killed per year. While motorisation is still low, the number of traffic accidents per 100 000 population is 3 times as high as in Western Europe. So far, few cities have started to invest in cycling or to improve bus and tram services.

These circumstances encourage people to opt for the private car as their mobility option by choice. These developments increase Ukraine’s dependence on foreign fossil fuel (and vehicle) imports while negatively affecting the attractiveness and competitiveness of urban areas.

Presently, investments in sustainable urban mobility are hampered by outdated norms and regulations as well as insufficiently staffed and equipped institutions in the

transport sector. In most cities, responsibilities in and for the transport sector are spread over a wide range of stakeholders – limiting a swift and efficient identification and implementation of projects to improve mobility opportunities. Enhanced private sector participation won’t be feasible under these conditions.

Country	Death rates per 100 000 population
Ukraine	13.5 (38 % pedestrians)
USA	11.4
Germany	4.7
Australia	6.1
Russia	18.6
Poland	11.8

Figure 4: Road Safety figures.

Source: WHO Global Status Report on Road Safety, 2013

From an institutional perspective, the division of labour between the Ministry for Regional Development, Construction and Housing and Communal Services (MinRegionBud) and the Ministry of Infrastructure (MinInfrastructure) remains unclear. Whereas MinRegionBud is in charge of urban development and norms, MinInfrastructure is involved in tariff regulations and licensing. However, the overall task of guidance in respect to urban mobility is not taken up: Presently, cities are more or less left on their own. In order to facilitate the exchange between cities, to reform norms and laws in reflection of trends and developments as well as to steer, monitor and evaluate the implementation of a national urban mobility fund, MinRegionBud and MinInfrastructure need to re-assess and strengthen their roles in respect to urban mobility.

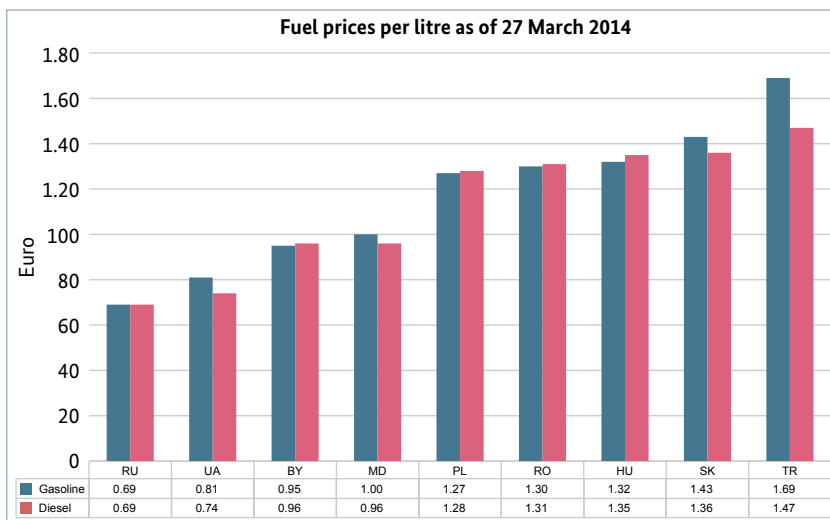


Figure 5: Fuel prices as of 27 March 2014. <http://www.fuel-prices-europe.info>

### International comparison – Transport price indices

**Fuel Taxes** are a major income source for public budgets. Revenues should be utilised for maintenance and investments in transport infrastructure and services. Low fuel prices create incentives for a higher use of private cars. Ukrainian fuel prices are lower than in all neighbouring countries except of Russia as a net oil exporter.

### Public transport fares in Ukrainian and other European cities

	Single Trip (€)	Monthly Pass (€)	Factor	Note
Kiev	0.12	20.74	115–153	no Marshrutka
Vinnitsa	0.09	11.15	113–136	no Marshrutka
Odessa	0.10	7.21	72	no Marshrutka
Minsk	0.22	17.90	81	no Marshrutka
Moskow	0.61	48.63	79	no Marshrutka
Bukarest	0.37	24.60	55–84	
Budapest	1.12	30.43	27	all public transport
Warsaw	1.05	26.31	25	all public transport
Berlin	2.60	60.00	23	all public transport

Figure 6: Public transport fares as of 27 March 2014. Different sources.

**Public transport fares are comparatively low.** Monthly passes for public transport in Ukrainian cities are not attractive due to extremely low single trip prices and a lack of integration of all public transport modes. Higher sales of monthly passes can help to stabilise revenues at the operator side, reduce transaction costs and reduce the need to buy a ticket for each trip.

		Unit cost (€)	Quantity	Sum (€)	Footnote
<b>Public Transport – Tram System Improvement</b>					
Rehabilitation of tram tracks	per km	3 000 000	1 445	4 335 750 000	1
Procurement of new tram vehicles	per tram	1 200 000	1 169	1 402 200 000	2
Rehabilitation of trams	per tram	200 000	935	186 960 000	3
Tram Depot rehabilitation/upgrade	per depot	10 000 000	26	256 000 000	4
Further System Rehabilitation/improvement	per tram system	10 000 000	22	220 000 000	5
Sub total				6 400 910 000	
<b>Public Transport – Trolley Bus Improvement</b>					
Rehabilitation of trolley track	per km	500 000	3 344	1 671 750 000	1
Procurement of new trolley bus vehicles	per trolley bus	200 000	1 619	323 700 000	2
Rehabilitation of trolley bus	per trolley bus	50 000	1 295	64 740 000	3
Trolley Bus Depot rehabilitation/upgrade	per depot	8 000 000	45	358 400 000	4
Further System Rehabilitation/improvement	per trolley system	3 000 000	44	132 000 000	5
Sub total				2 550 590 000	
<b>Public Transport – Bus Improvement</b>					
Bus Priority Scheme	per km	500 000	3 200	1 600 000 000	6
Procurement of new bus vehicles	per bus	200 000	9 650	1 930 000 000	7
Comprehensive Bus Improvement	per town/city (Ø)	450 000	214	96 300 000	8
Sub total				3 626 300 000	
<b>Non-motorised Transport – Cycling Infrastructure</b>					
Bicycle Track	per km	50 000	7 500	375 000 000	9
Bicycle Lane	per km	7 500	5 000	37 500 000	9
Sub total				412 500 000	
<b>Non-motorised Transport – Road Safety &amp; Walking</b>					
Road Safety Program large city	per city	5 000 000	4	20 000 000	10
Road Safety Program medium-sized city	per city	3 500 000	5	17 500 000	10
Road Safety Program small city	per city	2 000 000	37	74 000 000	10
Road Safety Program large town	per town	1 000 000	55	55 000 000	10
Road Safety Program medium-sized town	per town	500 000	113	56 500 000	10
Sub total				223 000 000	
<b>Strategic Planning &amp; Traffic Management</b>					
Traffic Management Centre	per city	5 000 000	32	160 000 000	11
Sustainable Urban Mobility Plan	per strategic process	500 000	46	23 000 000	12
Public Transport Integration Strategy	per oblast	2 500 000	25	62 500 000	
Parking Management Program	per program	800 000	46	36 800 000	12
Sub total				282 300 000	
<b>Overall investment need</b>				<b>13 495 600 000</b>	

Figure 7: Comprehensive investment scenario Urban Transport. Own back of the envelope estimate.

## Investment needs for sustainable urban transport

A national urban transport fund needs be established to tackle immediate deficits in quality of urban transport infrastructure. This fund can be fed by a dedicated share of fuel tax revenues as well as by further sources. For example, increasing fuel taxes by UAH 1/litre<sup>[1]</sup> gasoline and diesel can mobilise funds of about UAH 12 billion/year for urban mobility measures (approximately EUR 770 million). This amount will not only allow for the realisation of most urgent renovation works on tram tracks, trolley bus catenary, rolling stock, depots, and further public transport infrastructures. It can additionally provide Ukrainian cities with the necessary financial resources to comprehensively modernise urban transport infrastructure in the years to come – including cycling infrastructure, Bus Rapid Transit lines, road safety hot spot treatment and traffic calming measures.

## Investment scenario for upgrading urban transport systems (10-year program)

The table in Figure 7 indicates a very rough cost estimate (back of the envelope) of measures for transforming urban transport systems to modern standards, increasing operational efficiency, transportation quality, road safety and traffic management. The figures are net of costs for project preparation, planning and monitoring & evaluation.

## Recommendations for a comprehensive reform agenda

The modernisation of urban transport systems in Ukraine requires a comprehensive reform and investment program. The Avoid-Shift/Maintain-Improve approach has shown to be extremely successful as general transport policy orientation.<sup>[2]</sup>

---

<sup>[1]</sup> 1 EUR = 15.577 UAH (hryvnia) as at 23 April 2014.

<sup>[2]</sup> AVOID or reduce the need to travel, SHIFT to or maintain the share of more environmentally friendly modes, IMPROVE the energy efficiency

---

## Footnotes and annotations of Figure 7

1: 75% rehabilitation/upgrade; 2: 50% rolling stock renewal; 3: 40% rolling stock rehabilitation; 4: 80% rehabilitation/upgrade; 5: including stops, relay stations & further facilities; 6: bus lanes, priority signalisation, all cities > 50 000; 7: lump estimate, all cities > 20 000; 8: Service Quality/Bus stop improvement, all cities > 20 000; 9: Lump estimate of kilometres per city size category; 10: Safe crossings, traffic calming, infrastructure measures, lump sum estimate per city size category; 11: All cities > 200 000; 12: All cities > 100 000;

In Ukraine, the main focus shall be placed on maintaining the still high shares of public transport users and pedestrians, shifting people to cycling and on improving the operational efficiency of public transport systems.

Reflecting this, a reform agenda could cover the following objectives:

### Immediate steps (accomplished within one year)

1. **Re-assessment and strengthening of roles of MinRegion-Bud and MinInfrastructure in urban mobility;**
2. Setting-up a **multi-level expert group on urban transport** comprising representatives from the ministries for finance, infrastructure & regional development, city administrations & transport companies, civic organisations in the field of sustainable transport and road safety as well as international experts;
3. **Specification of reform and modernisation needs** in urban transport on national and local levels;
4. Elaboration of a **National Urban Mobility Strategy**, together with an implementation programme (infrastructure rehabilitation, modernisation of communal transport enterprises and operations, development of cycling infrastructure, increasing road safety in urban areas, etc.);
5. Establishment of a **National Expertise Centre on Urban Transport** which will transport policy provide guidance to cities and strengthen the dialogue between cities and political levels.

### Mid-term goals (2–5 years)

1. Provision of **funds for most urgent rehabilitation measures** of public transport infrastructure and rolling stock (e.g. by allocating a dedicated share of fuel tax revenues for an urban mobility infrastructure programme);
2. **Strengthening urban transport administrations and public transport authorities** accompanied by anti-corruption mechanisms;
3. **Increasing transparency** of planning, tendering and construction processes in urban transport as well as of fare revenues in public transport;

---

of transport modes and vehicle technology. Find further information in the [SUTP ASI-Fact Sheet](#).

**Annotation:** Figures for the rehabilitation and modernisation of metro systems are left out due to their limitation on 3 mayor cities, high estimated costs and uncertainties in assessing concrete investment needs. The suggested 10-year investment scenario is designed to initiative the comprehensive improvement of sustainable urban mobility in more than 200 towns and cities all over Ukraine.

4. **Reform of transport financing mechanisms** towards sustainable sector financing (transport finances transport) with sustainable urban transport fund as core;
5. **Reform of public transport financing** (funding mechanisms, tariff composition & structure, social benefits);
6. **Reform of technical guidelines for infrastructure design** (road design and safety standards, construction norms supporting durability and optimised life-cycle costs);
7. **Reform of operational standards and design guidelines for public transport facilities** (increasing accessibility and efficiency of public transport services);
8. **Reform of planning guidelines** (moving away from static general planning towards inclusive sustainable urban mobility planning);
9. **Strengthening entrepreneurial freedom** of communal transport enterprises;
10. **Strengthening contractual relationships** between public transport authorities, private and municipally-owned operators (clarification of governance and financial responsibilities in order to improve long-term planning security, e.g. by state-of-the-art public service contracts).

### Long-term policy orientation


- **User-oriented development and integration of public transport systems**, focussing on quality and efficient operations;
- **Continued modernisation of public transport enterprises, infrastructure and operations.**

The current political changes offer an enormous chance for realigning transport policies and for modernising urban transport. Investments in sustainable mobility can reduce the country's dependency on fossil fuels in the mid- and long-term. It will also boost the Ukrainian economy.

### GIZ – Our work in the Sustainable Urban Transport Project

The Sustainable Urban Transport Project (GIZ-SUTP) aims to help cities achieve their sustainable transport goals, through the dissemination of information about international experience, policy advice, training and capacity building.

SUTP “Policy Briefing” is a service of the sector project “Transport Policy Advisory Services” on behalf of the German Ministry for Economic Cooperation and Development (BMZ). The SUTP “Policy Briefing” responds topical challenges and provides guidance to decision-makers.

- “Sustainable Transport: Sourcebook for Policy-makers in Developing Cities”: <http://www.sutp.org>
- GIZ Transport and Mobility: <http://www.giz.de/transport>
- Extensive SUTP Photo Database: <http://www.flickr.com/photos/sustainabletransport>
- Capacity Building on Sustainable Urban Transport (CAPSUT): <http://www.capsut.org>
-  Follow us on Twitter: [https://twitter.com/\\_SUTP](https://twitter.com/_SUTP)

Contact: [Mathias.Merforth@giz.de](mailto:Mathias.Merforth@giz.de)

### Disclaimer

Findings, interpretations and conclusions expressed in this document are based on information gathered by GIZ and its consultants, partners and contributors from reliable sources. GIZ does not, however, guarantee the accuracy or completeness of information in this document and cannot be held responsible for any errors, omissions or losses which emerge from its use. This document contains links to third-party web sites. The linked sites are not under the control of GIZ. GIZ is not responsible for the contents of any linked site or any link contained in a linked site.

Published by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH  
Registered offices Bonn and Eschborn, Germany  
Sector Project “Transport Policy Advisory Services”  
Dag-Hammarskjöld-Weg 1–5  
65760 Eschborn, Germany  
T +49 61 96 79-13 57  
F +49 61 96 79-80 13 57  
[www.giz.de/transport](http://www.giz.de/transport)  
[www.giz.de](http://www.giz.de)

Author(s) Mathias Merforth

Layout Klaus Neumann

As at April 2014

GIZ is responsible for the content of this publication.

On behalf of Federal Ministry for Economic Cooperation and Development (BMZ)

Division Water; Energy; Urban development; Geosciences sector

Addresses of the BMZ offices	BMZ Bonn Dahlmannstraße 4 53113 Bonn, Germany T +49 228 99 535 - 0 F +49 228 99 535 - 3500	BMZ Berlin Stresemannstraße 94 10963 Berlin, Germany T +49 30 18 535 - 0 F +49 30 18 535 - 2501
------------------------------	--	---

[poststelle@bmz.bund.de](mailto:poststelle@bmz.bund.de)  
[www.bmz.de](http://www.bmz.de)