



OVERVIEW OF EMERGING TECHNOLOGIES & INNOVATION FOR TRANSPORT

Stakeholder Consultation Workshop

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On behalf of:



of the Federal Republic of Germany



Introduction

- The transport sector is experiencing a fundamental **shift of both its demand and its supply**
- While the transport supply currently relies mainly on motorised vehicles **with internal combustion engines (ICE)** and more carbon-intense, the new generation of vehicles are becoming **greener**
- Transport demand and mobility trends are diversifying, moving away from individual transport to **using more mass transport, active and shared alternative**



Outline

- Part 1: New vehicle technologies
- Part 2: New modes and services
- Part 3: Smart mobility

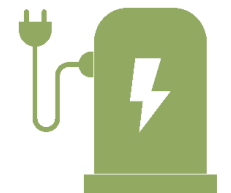


NEW VEHICLE TECHNOLOGY



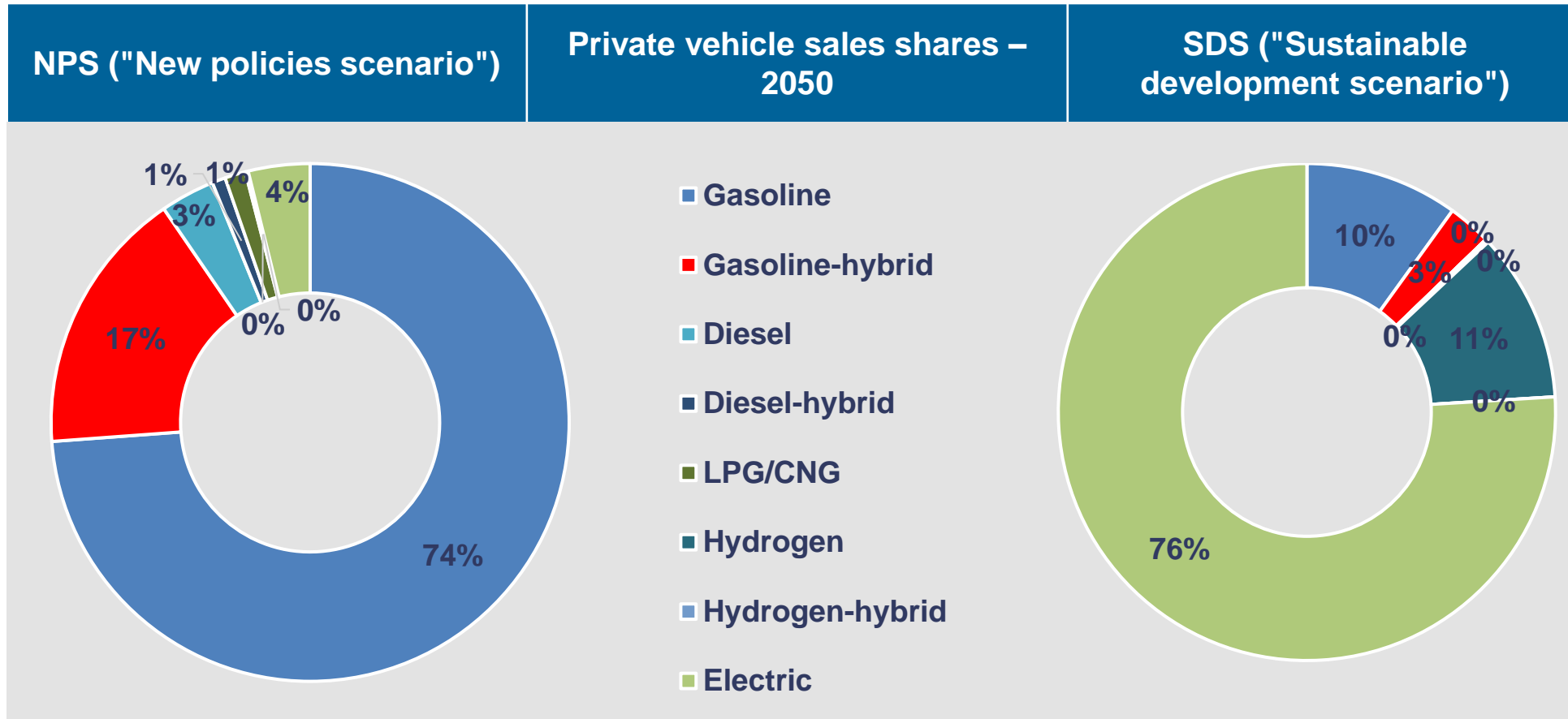
Energy vector is getting cleaner

- In a world still heavily dominated by gas and diesel vehicles, low-emission and alternative fuel vehicles are emerging
- Two things can heavily influence the degree of adoption of clean vehicles:
 - Charging infrastructure
 - Production targets set by vehicle manufacturers





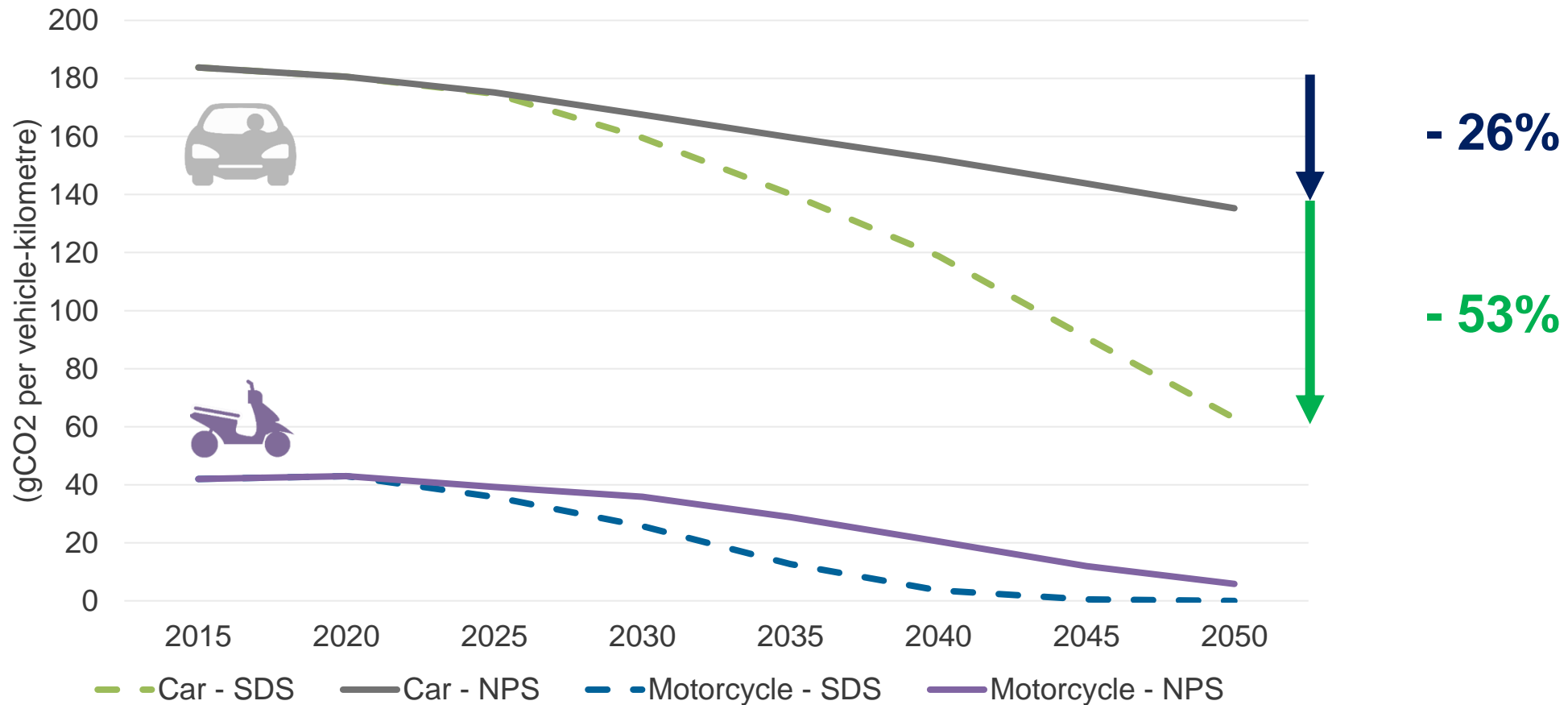
Fleet composition target in Uzbekistan (IEA)





Fuel efficiency improvements in Uzbekistan (IEA)

Average vehicle emissions in Uzbekistan



NEW MODES AND SERVICES



Scooter sharing: a current trend that may not last



Scooter sharing services:

For example, Voi scooters, Lime, Wind, Circ, TIER, Beam, etc.

- Electric kick scooter services (free-floating or station-based)
- Support the development of active micro-mobility



Bike sharing: a system that is proving efficient



Bike sharing services:

For example, Vélib', Lime, Jump, etc.

- electric or non-electric, station based vs free-floating based
- supporting the development of active micro-mobility



Ridesharing: the revolution of taxi services



Shared “taxi”:
simultaneous ride-sharing
on-demand service, door-to-door



Vehicle sharing: the end of private ownership?



Vehicle sharing services:



Free-floating or station-based. They reduce private vehicle ownership and enable a quicker vehicle fleet renewal to new standards. They also reduce the need to rely on a private vehicle.



Taxibus: the best of shared mobility?



TaxiBus

optimised on-demand bus
booking 30 minutes in advance
400 meters from origin / destination

SMART MOBILITY



Toward an interconnection of modes

Among public transport modes:

- Integrated PT ticketing
- Real-time information systems (schedule, delays)
- Optimised mission coordination

Between public transport and other shared modes:

- Combined/reduced fare systems
- Shared real-time information systems (schedule, delays)
- Optimised coordination

➔ Mobility as a Service (MaaS)

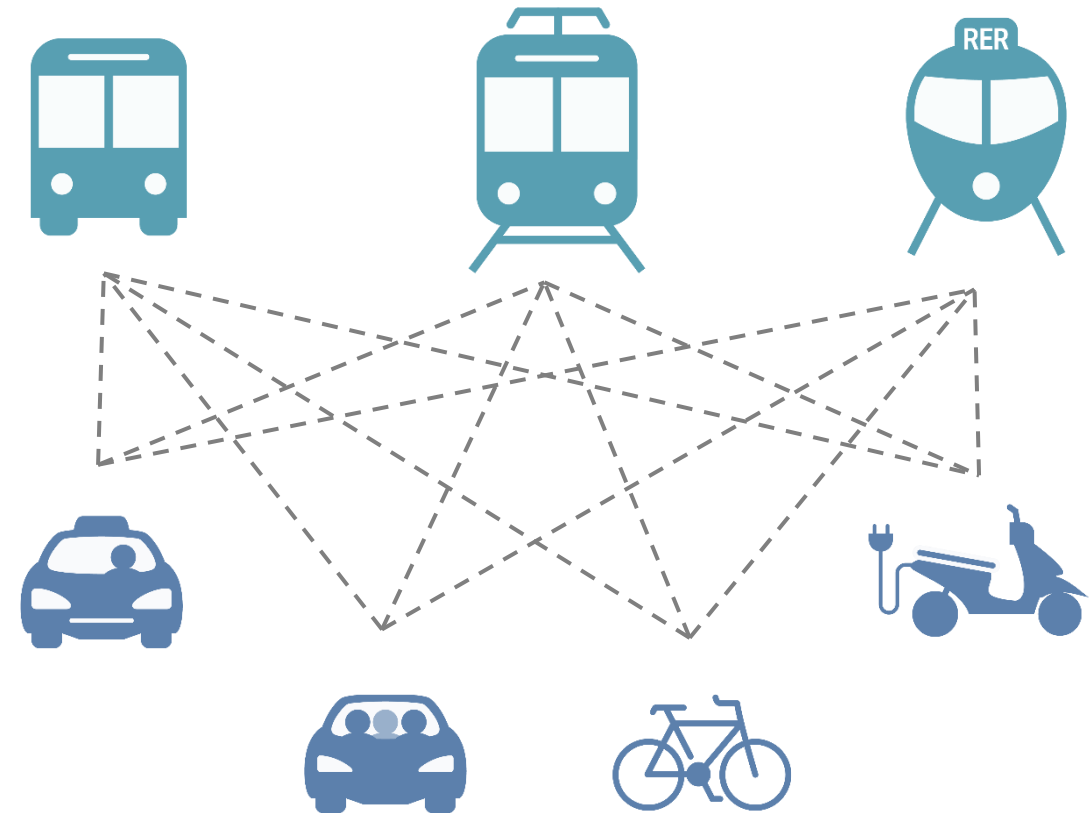


Create a multimodal urban transport system with public transport as its backbone

Integrating public transport and shared mobility

- offers **last-mile connectivity**
- **makes the use** of transport vehicles **more efficient**

Reliable, frequent, safe, clean public transport services can **attract new users**





Previous studies demonstrate this integration is efficient

Impact of interaction between shared mobility and bus services

Auckland

- BRT corridors preservation demonstrated better performance
- Low frequency services showed worse performance than SM
- Services should be adapted and flexibilising
- Cost provision reduction and greater connectivity and access

Dublin

- Core bus network and new BRT corridors seem to be well fitted to current demand (recent design) and perform better than flexible low capacity SM services
- SM outperforms other bus services specially regional services in the wider GDA
- Cost provision reduction and greater connectivity and access

Helsinki

- Tested replacement of bus feeder services to Heavy PT or low frequency services
- Both approached of update these services provided now by SM give very positive outcomes, specially replacing feeder services
- Keep the other services or adapt
- Cost provision reduction and greater connectivity and access



Innovations must be accompanied by proper policy frameworks

- Look for innovation opportunities
- Assess the potential of innovations for optimizing and decarbonizing transport
- Discuss with innovating companies to identify barriers and leverages for innovation
- Design policies with a room for innovation

→ Set up a fertile ground for innovation

THANK YOU FOR YOUR ATTENTION

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