DECARBONISING PATHWAYS FOR ULAANBAATAR’S URBAN MOBILITY

Dissemination event
22 March 2023
RESULTS OF THE ITF CURRENT POLICY SCENARIO FOR ULAANBAATAR

Dr Mallory Trouvé, Policy Analyst, ITF
In collaboration with Mongolian stakeholders we

- Analyzed current transport policies for Ulaanbaatar
- Reviewed the planned evolution of the transport network in the coming years
- Defined quantified objectives for each policy measure
- **Example:** Light Rail Transit (LRT) network, defined by total length
  - Target for 2030: 39 km
  - Target for 2050: 108 km

Combining the effects of each measure if the target is reached, we projected the CO₂ emissions of the transport sector in Ulaanbaatar between 2015 and 2050

**Planned measures**

- Massive renewal of the bus fleet and promotion of cleaner technologies for private cars
- Creation of a LRT network
- Conversion of the existing rail to urban passenger rail
- Creation of a cable car system
- Fare integration, optimisation of the bus network, introduction of bus priority
- Enhancement of the bike and pedestrian infrastructure
- Incentives for bike and scooter sharing
- Private vehicles pricing measures
- Optimised urban planning
Results of the Current Policy Scenario

Urban mobility CO$_2$ emissions until 2050 by scenario
(thousand tonnes CO$_2$)

Possible breakdown of CO$_2$ reduction by policy measure

X% from Policy measure 1
X% from Policy measure 2
X% from Policy measure 3

-62%
Vehicle Technology Development

Scenario metrics
- Percentage of various vehicle technologies in the private vehicle and bus fleet
- **Target:** 16% of electric cars and 70% of electric buses by 2050

Existing plan
- Delivery of 750 electric between 2022-25

Implementation and challenges
- Buses: high cost and technical requirement of electric vehicles
- Private cars: how to favor the uptake of EV in the private fleet?
- Development of charging infrastructure
- Limited efficiency of EVs in a cold climate

Quantification of the policy measures
Reduction in transport-related CO2 emission attributed to the measure

By 2030
- **-18%**

By 2050
- **-37%**
Infrastructure Expansion

Scenario metrics
- LRT, rail, cable car, conventional, bike and pedestrian network length infrastructure
- Target: 100 km of LRT, 190km of rail, 20km of cable car, 4100 km of bus, 1600 km of bike network by 2050

Existing plan
- Creation of the LRT and cable car systems
- Conversion of the existing rail to urban passenger
- Development of cycling (1600 km) and pedestrian (1400 km) networks

Implementation and challenges
- Costly investments: which mode should be prioritized?
- Diversify financial sources

Quantification of the policy measures
Reduction in transport-related CO2 emission attributed to the measure

By 2030
-9%

By 2050
-16%
Public Transport Promotion

Scenario metrics

- Increase of operating speed, bus network share, average cost of a trip, among others.
- **Target:** 10% increase in speed for bus, 30% of bus network with priority, 30% reduction in cost of trips, among others.

Implementation and challenges

- Creation of a competent Metropolitan Transport Authority (MTA)
- Organisation of the system around a mass transit backbone

Quantification of the policy measures

Reduction in transport-related CO2 emission attributed to the measure

By 2030

-0%

By 2050

-1%
Shared Transport Promotion

Scenario metrics

- Development of a bike and scooter sharing fleet, promotion of higher occupancy rate per vehicle
- **Target**: 3000 shared bikes and scooter and 10% increase of the number of persons by car by 2050

Implementation and challenges

- Organise the development of bike and scooter sharing to avoid excesses that can appear.
- Develop efficient incentives for maintaining and increasing the average occupancy rate in Ulaanbaatar.

Quantification of the policy measures

Reduction in transport-related CO2 emission attributed to the measure

By 2030

-3%

By 2050

-7%
Regulatory Measures

Scenario metrics
- Increase in vehicle usage restrictions.
- Target: 10% vehicle restricted from circulating and 10% restricted parking space in the city centre

Implementation and challenges
- City-wide reform
- Effective enforcement of regulations

Quantification of the policy measures
Reduction in transport-related CO2 emission attributed to the measure

By 2030
-1%

By 2050
-1%
Pricing Measures

Scenario metrics

- Increase in vehicle ownership and usage cost.
- **Target for 2050:** 25% increase in vehicle usage costs (excluding fuel) and parking costs. 35% of fuel tax increase and 30% of vehicle purchase tax increase.

Implementation and challenges

- City-wide parking reform
- Acceptance by the population
- Ensuring equity and accessibility

Quantification of the policy measures

Reduction in transport-related CO2 emission attributed to the measure

**By 2030**

-1%

**By 2050**

-3%
Other Measures

Scenario metrics

- Share of population regularly teleworking, increase in diversity of land use and density around public transport network.
- **Target for 2050**: 5% of the active population regularly teleworking in 2050, 15% increase in density around public transport network by 2050

Existing plan

- Ulaanbaatar 2040 Land-use development plans (to be endorsed):

Implementation and challenges

- Develop an integrated transport and land-use master plan
- Mitigate adverse effects of densification

Quantification of the policy measures

Reduction in transport-related CO2 emission attributed to the measure

By 2030

-2%

By 2050

-6%
## Policy Measures Quantification Comparison

<table>
<thead>
<tr>
<th></th>
<th>Vehicle Technology Development</th>
<th>Infrastructure Expansion</th>
<th>Public Transport Promotion</th>
<th>Shared Transport Promotion</th>
<th>Pricing Measures</th>
<th>Other Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>By 2030</td>
<td>-18%</td>
<td>-9%</td>
<td>-0%</td>
<td>-3%</td>
<td>-1%</td>
<td>-2%</td>
</tr>
<tr>
<td>By 2050</td>
<td>-37%</td>
<td>-16%</td>
<td>-1%</td>
<td>-7%</td>
<td>-3%</td>
<td>-6%</td>
</tr>
</tbody>
</table>

### Policy Priorities

- Idea 1
- Idea 2
- Idea 3