Session 2: «Integrated Approaches of Energy and Transportation Infrastructures for Cities»

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Overall, motor vehicles in Almaty burn approximately 772 million liters annually of petroleum and diesel with more than 90% being consumed by private vehicles.

CO₂ emissions from transport sector (metric tons of CO₂) – BAU scenario

<table>
<thead>
<tr>
<th>Year</th>
<th>Emissions</th>
</tr>
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<tbody>
<tr>
<td>2013</td>
<td>2 650 000</td>
</tr>
<tr>
<td>2023</td>
<td>4 990 000</td>
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Other pollutants are also expected to grow dramatically. NOₓ pollutants, which include nitric acid, is likely to increase by 60% while carbon monoxide (CO) emissions, which are toxic to humans, are expected to double by 2023.

Sustainable Transport is the system that ensures continuous high mobility and convenience of transport for the whole population in the long term perspective, while providing a positive impact on the environment, as well as social and economic sustainability of the community as a whole.
The ASI Approach to Supporting Sustainable, Low Carbon Transport

Avoid Motorized Trips
- Motor and fuel taxes
- Road user fees / tolls
- Cordon / congestion pricing
- Car sharing programs
- Transit Oriented Development
- Car free zones
- Commuter trip reduction policies
- Avoid freight empty loads
- Better freight logistics

Shift to More Efficient Modes of Transportation
- Public transport improvements
- Parking management
- Transit Oriented Development
- Improvement in NMT
- Freight rail

Improve Efficiency of Remaining Travel Activity
- Active traffic management
- Eco-driving
- Fleet maintenance schemes
- Intelligent transportation systems
- Traffic signal synchronization
- Energy efficient vehicles
- Lower carbon fuels
- Aerodynamic vehicle design

Source: ITDP
Electrification of urban transport as solution or a challenge

- High Upfront cost
- Challenging operation
- Procurement & contracts
- Interoperability

Energy sector: building trust & cooperation
Electrification of urban transport as solution or a challenge

E-bus = 2 x the price of a conventional bus (battery=45% cost)

Charging infrastructure standardization is key

A chosen technology performs well if put in its “best operational conditions”

Equipment ownership: what happens at the end of a contract?

Urban location of charging point
• Cabling
• Quality of the electricity distribution network
• Stability of electricity cost

Exploring Opportunities - Use of PT power network (trams, metro)
Different models for different cities

Project governance including **ALL** actors with a clear definition of roles & responsibilities: PTA, PTO, Industry, Grid Owner, Electricity Supplier, etc. Who pays? At what cost? Who owns rolling stock/infra?
Find Technology for every mode

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