



— GLOBAL SUSTAINABLE —  
**TRANSPORT CONFERENCE**  
— ASHGABAT, 26-27 NOVEMBER 2016 —



### **Thematic discussion 7: Energy and transport**

Sunday, 27 November, 3:00 – 4:00 P.M.

Lead entity: UNIDO

Transport decisions—at the national and municipal levels, but also globally—must go hand in hand with energy decisions if sustainable development is to be achieved and should include a shift towards high-efficiency and low-carbon modes of transport. Sustainable energy will, by definition, serve as a precondition for and ultimately further sustainable transport. However, in the short-term developed and developing countries alike will be looking to strike the right balance between assuring access to energy and transport for this generation and preserving the planet for the next. It is especially important when 23 per cent of energy-related greenhouse gas emissions come from transport; and road congestion is a tremendous burden on the economy, currently accounting for 0.7% of the GDP in the United States, 2% of GDP in Europe, 2–5% of GDP in Asia, and as high as 10% of GDP in some cities of emerging economies (World Bank, 2015).

The main technical pathway to realize large-scale energy-saving and emission reductions in road transport is through the development of “New Energy” Vehicle (NEV) technologies. Such advanced-powertrain vehicle technologies, which include electric battery, plug-in hybrid and fuel cell electric vehicle technologies have the advantages of high energy efficiency and tail pipe zero emissions. While the use of EVs reduces the demand on imported liquid fuels and improving energy security, it does not reduce environmental impacts if electricity is mainly produced from fossil fuels. Promoting low carbon power generation, including the supply of electricity to NEV, have been identified as one of the measures in national strategies to address energy and environmental problems in both sectors. Furthermore, a significant, but so far untapped potential for electro mobility exists in rural areas in developing countries, for example through electric outboard engines for short distance travel and commuting along inland waterways (e.g. in the Amazon basin) in combination with rural electrification efforts based on renewable energy sources (IEA, 2016).

Technological innovations in vehicles, combined with the use of information and communication technologies and the concept of the internet-of-things (IoT), have greatly enhanced fuel efficiency and safety. Lighter materials for vehicle parts, such as done in the aviation sector to reduce weight of

planes and improve aerodynamics, has resulted to significant energy and carbon emission reductions. The rail sector has also shown great strides in system electrification, coupled with investments in renewable energy and smart grids.

Furthermore, the provision of sustainable mobility requires policy-makers and planners to understand and incorporate the needs of different societal stakeholders into policy frameworks for providing both public and private transport. Enabling Policy Framework including local/sectoral policies, technical regulations and voluntary standards, implementation strategies, as well as incentives and financing schemes is a precursor in all countries to accelerate EV adoption and increased EV-renewables integration.

Designing and re-designing urban systems towards transit-oriented development with greater road network connectivity while containing urban sprawl, have high potential for shaping urban sustainable transport systems. Efficient public transport systems and provision of infrastructure for non-motorized or more active transport options like bicycle and pedestrian lanes can induce the shift to more efficient and zero-emission modes of mobility at city level.

**Possible questions for discussion:**

1. What policies are in place in key countries to accelerate EV adoption? What type of government intervention is critical for increased EV-renewables integration and how electrical mobility can be used for rural areas?
2. Which innovative technology solutions can countries consider in reducing the energy and carbon intensity of transport within their sustainable development plans and programs? How can the proper innovation ecosystem be fostered in developing countries?
3. How can better planning of cities support low-emission transport? How can sustainable urban energy systems support sustainable modes of transport? How can capacity of local actors be enhanced? What is the role of partnerships especially with the private sector, and global/regional platforms in this regard? What are the experiences and lessons learned?