A Tale of Renewed Cities

A policy guide on how to transform cities by improving energy efficiency in urban transport systems
• Good morning. Welcome ladies and gentlemen to this webinar launch of the IEA’s new Policy Pathway on Energy Efficiency in Urban Transport Systems.

• Energy efficiency is what we have termed the “hidden fuel,” and it is a key component in our efforts to achieve energy security, energy affordability, and environmental sustainability. A recent World Energy Outlook Special Report, released last month, looked at four immediate steps that can be taken at the national level to keep the door open to a low-carbon trajectory. Energy efficiency accounted for half of the emissions reductions.

• With urbanization set to accelerate, the impact of urban energy systems in particular will play a critical role in energy efficiency potential, and efficiency in urban transport systems is a key element of that.
Indeed, the world’s urban population is growing rapidly. By 2010, for the first time ever, more than half of the world’s population – or 3.5 billion people – lived in urban areas. By 2050, nearly 70% of the world’s population – nearly double today’s urban population – is expected to live in cities.

With this rapid growth in urban population comes increasing demand for energy and mobility. Urban travel increased more than 15% between 2000 and 2010 to roughly 13 trillion passenger kilometres. In other words, for every urban inhabitant added to cities between 2000 and 2010, overall urban travel increased by nearly 5 000 passenger kilometres each year. Given that 6.3 billion people are expected to live in cities by 2050, it is likely that urban passenger travel will more than double in coming decades. In some regions, it could increase as much as 10-fold.
The effects of rapid growth in urban population and urban mobility are evident in cities across the globe. In both developed and developing cities alike, traffic jams and overcrowded roads are common. They cost countries hundreds of billions of dollars in lost fuel and time as vehicles sit in traffic, and they have adverse effects on environmental quality, health and safety in cities. In many cities across the globe, transport has surpassed industry to become the largest contributor to poor urban air quality. Roadway accidents also cause nearly 1.3 million deaths around the globe each year.

Rising wealth and increasing vehicle ownership in urban areas has also led to significant shifts away from more efficient modes, such as public transport and bicycling. In some cities, the share of private motorised transport increased by more than 20% over the past 20 years, and it is still rising in most developing regions.
These issues require immediate action. As the share of the world’s population living in cities grows to nearly 70 percent by 2050 and energy consumption for transport in cities is expected to double, the need for efficient, affordable, safe and high-capacity transport solutions will become more acute. Without those solutions, transport conditions will continue to deteriorate – with more cars, congested streets, fuller trains, intensified pollution, increased fatalities and impaired economic potential.

In effect, the world has reached a turning point. The 20th century changed how we move with rapid transit and motorised transport. The 21st century now must address how to move people and goods throughout cities most efficiently. Urgent steps to improve the efficiency of urban transport systems are needed not only for energy security reasons, but also to mitigate the numerous negative climate, noise, air pollution, congestion and economic impacts of rising urban transport volumes.

This includes taking a systems perspective and a long-term view to the actions that are needed now. Governments must think beyond individual technologies and electoral cycles, and consider how to build – and how to renew – cities that will accommodate and transport nearly 6.3 billion people by 2050. We must plan infrastructure, logistics and energy systems now that make sense today and over the coming decades.
• Already, cities across the globe have started to tackle these issues. The solutions are varied – including
  o highly efficient and cost effective Bus Rapid Transit systems
  o travel demand management measures, such as congestion pricing mechanisms in London, Stockholm and Singapore
  o travel logistic tools, such as freight delivery and route management technologies
  o and strong investments in public transport and non-motorised transport infrastructure

• Today’s publication examines transport development and policy actions such as these in cities all across the globe. Such “real-life” examples demonstrate how common responses applied in different contexts can be used to achieve transport system improvements while also improving the urban environment, driving growth, and improving quality of life in cities.

• But today’s Policy Pathway publication, A Tale of Renewed Cities, focuses on three cities in particular – New York City; Belgrade in Serbia; and Seoul, Korea. In all three, policy makers are pursuing broad policy measures to make their cities more efficient and better places to live, including initiatives that address urban transport issues.
• **A Tale of Renewed Cities** sets forth a pathway to implement measures and improve transport system energy efficiency in cities across the globe. It outlines the essential steps and milestones for policy development and implementation.

• To assist planners and policy makers in addressing many common issues and challenges, the Pathway also provides a list of policy references and practitioner's guides that are referenced throughout the report and on the IEA Policy Pathway Series webpage.

• Achieving energy efficiency improvements in urban transport systems is not easy. But the examples outlined in this Pathway demonstrate that it is feasible, both in the context of established urban environments and rapidly growing ones.

• As we move to…
  o First, put the planet onto a trajectory toward a low-carbon future,
  o Second, reduce local pollution in rapidly developing and urbanizing societies,
  o And third, improve energy security in a world of rapidly rising demand…

• As we move to achieve these objectives, energy efficiency and specifically urban transport efficiency will be key.

• So let us learn from each other, and from each of our own experiences – to improve decision making and move toward our common goals. Fostering that is the strength of the IEA, and so I am proud to release this publication today.

• I turn now to Didier Houssin, the Director of Sustainable Energy Policy and Technology, and also the lead author John Dulac, to go over the report in more detail.
**Didier:**

- *A Tale of Renewed Cities*, which has been gratefully supported with technical assistance and expert input from the European Bank for Reconstruction and Development’s Shareholder Special Fund, is divided into four sections that set out the detailed steps and actions for supporting the development, financing, implementation and evaluation of policies to improve the energy efficiency of urban transport systems. These steps are intended to help planners and decision makers to implement policies that meet three objectives:

  - Avoid travel – for example, through better land use planning
  - Shift to more efficient modes, such as public transport
  - and finally improve technology through vehicle and fuel technologies, when motorised travel is necessary.

- This “avoid, shift and improve” approach, outlined in this report and the IEA Energy Technology Perspectives 2012 publication, could help to reduce transport sector spending on vehicles, fuel and infrastructure by as much as USD 70 trillion by 2050 compared to a business-as-usual perspective.
One key message from this Policy Pathway is to think about transport from a systems perspective. Cities that have addressed energy efficiency in urban transport, thinking about how it fits into the broader urban picture, have made significant gains in recent years. This includes major transport policy initiatives in London and Paris, Shanghai, Instanbul and Mexico City - all of which have applied measures to improve transport system efficiency and urban quality of life.

Achieving those improvements is not always easy. This report highlights the need to think about distances to destinations but also access to transport and choice of efficient modes; and the extent to which travel behaviour and preferences are encouraged or discouraged (e.g. travel demand management).

Under this broad scope, transport system efficiency addresses not only technical efficiency but also the need for transport and travel choices. This includes building better cities to allow for walking between destinations, supporting public transport, prioritising efficient transport modes and technologies, and managing travel demand.
Under this broad framework, the policies to put in place to improve urban transport energy efficiency depend on local needs and the underlying drivers for transport demand. While solutions are often similar, what works in New York City may not be the best solution to meet the needs of Santiago, Chile, or Belgrade or Seoul.

To assist policy makers, the Pathway therefore has devised a typology of four common city transport contexts within the land-use and travel framework. These contexts describe some of the general travel trends and transport system issues facing cities across the globe, with potential responses for each of those city types.

The Pathway also analyses common barriers and the key policies to overcome them. This includes proven responses and policy examples to overcome market failures, meet financing needs and address political resistance.

Energy efficient transport systems generally pair well-developed urban transport networks with policies and incentives to encourage efficient travel choices.
Among the numerous cities highlighted in the Pathway, three – Belgrade, New York City, and Seoul – were selected for in-depth case studies. All three cities have won recognition for their urban transport projects that have improved mobility while also improving urban quality of life.

A common thread between all three renewed cities is their multi-faceted approach to urban transport challenges. Congestion, growing private motorised travel, infrastructure needs and lack of funding are common in all three cases – as they are in most cities around the world. Yet, through careful planning, strategic actions, engaging of stakeholders, and broad transport measures, all three cities have been able to achieve improved commute times, increased public transport and non-motorised travel shares, while improving air quality and enhancing safety.

The broad measures undertaken by the cities include not only improved transport technologies (such as more efficient buses), but also investments in infrastructure for more efficient modes and improvements in public transport services. This has been possible thanks to long-term sustainable urban development plans and policy reform to encourage energy efficient travel choices. Many measures have been radical, such as the removal of the Cheonggyecheon (CHON GEY CHON) highway in Seoul and the transformation of Broadway Boulevard in New York City. Yet, because the cities carefully planned those changes, and worked with stakeholders and the public, these projects have been a great success with many benefits.
John:

- The plan, implement, monitor and evaluate process outlined in this report draws from proven practice and successful policy implementations in cities across the globe. While there are often challenges, the examples illustrated in the Pathway show that significant efficiency improvements can be made, along with numerous other benefits, such as improved health and better access to jobs and services. For instance, within the first six months of refurbishing suburban rail lines and increasing train frequency, ridership in Belgrade tripled. In New York City, bus travel time was cut by 11 minutes when the Select Bus Service was implemented, and bike ridership doubled after the city installed more than 450 km of bike lanes. In Seoul, bus speeds increased as much as 65% after regulatory reforms were implemented, while accidents and serious injuries fell by more than 40%.

- The examples highlighted in the Pathway show the need to approach transport efficiency from multiple angles – cities highlighted in the report identified problems and needs, assessed underlying the drivers, evaluated potential solutions, and have continually improved measures through monitoring and review. By contrast, cities that made weak investments or that only addressed short-term transport issues without considering system needs or secondary effects often experienced weak results or even negative responses.
One of the key messages illustrated in the case studies and examples highlighted in this report is that effective policy implementation requires effective planning.

This includes important questions about mobility needs, institutional and infrastructural capacity, the links between land use and travel demand, economic potential, governance, population trends, and even cultural preferences.

The cities also involved numerous stakeholders, including local advocacy groups, developers, businesses and planning bodies. The additional support increased institutional capacity and often helped to reduce liabilities for projects. For example, New York City’s Public Plaza programme has been designed to work with local stakeholders to develop improved public spaces through Public-Private Partnerships that require funding plans and maintenance responsibilities.

By securing additional resources, especially critical financial resources, the cities were able to establish action plans with key steps and milestones that help to ensure policy intentions are achieved.
Financing of course is almost always one of the critical barriers to implementing transport system improvements. However, numerous tools and financing mechanisms exist, and IEA analysis shows that upfront investments in efficiency improvements can lead to significant long-term savings – both in terms of energy as well as in infrastructure provision. For example, bus rapid transit and urban rail systems can be expensive to build compared to adding roadway capacity; but both also have significantly higher carrying capacities and are typically long-lived investments.

Several common financial tools include regulatory and fiscal instruments; land value capture tools, such as tax increment financing and transferable development rights; public private partnerships; and funding from multilateral development banks or green transport funds.

As governments increasingly turn to new sources of financing for transport sector projects, the IEA recommends that policies ensure users pay the economic, environmental and energy security-related costs of the transport system. For instance, parking is often free and costs cities billions of dollars to build and maintain. Many cities also have policies in place that require more parking provision than is really necessary. This skews transport decision making and adds unnecessary costs.
The examples and case studies in the Pathway demonstrate that well-defined responsibilities, strong project management and clear communication are essential to moving transport efficiency policies from concept to reality. While it is common for policy implementations to go through some changes or unexpected delays, these should not overshadow the importance of the project and its benefits.

Depending on the policy or project, many players may be involved, and it may be necessary to inform that public about changes or policy objectives.

In recent years, some innovative approaches have been applied to increase the impact of transport efficiency policy measures. Facebook pages and Twitter accounts are increasingly common, while online information tools, carbon footprint calculators and mobile phone apps are also being used to communicate with the public and increase awareness of efficient transport choices.
Effective, meaningful data is critical to understanding transport needs and to assess the impact of policy initiatives. Many cities collect data for analysis on key transport indicators, while other have even started publishing annual statistics. This data is not only valuable to assessing policy success and the effect of energy efficiency improvements; it also can be a powerful communication tool to demonstrate the many benefits of policy changes. For example, Paris and New York City use annual indexes to highlight improvements in traffic flow, travel time, bike ridership and road safety, etc.

To assist policy makers, the IEA will be releasing two manuals later this year on energy indicators. One looks at how to collect the Statistics needed for Energy Efficiency indicators and the 2nd explains how to develop Energy Efficiency Indicators. These indicators are key in informing and identifying achievable energy efficiency goals.
• Once policy implementations have been achieved, it is important to evaluate their impact. Comprehensive policy evaluations can demonstrate the effectiveness of projects and are valuable tools to assess progress and next steps toward long-term objectives.

• Because transport systems are complex, it is important to regularly evaluate policy achievements. Rebound effects (or re-emergence of transport issues and challenges) are not uncommon in transport systems, and the long-term success of policies can require periodic improvements, maintenance or updates.

• Policy evaluation can also be a valuable tool for making broader transport decisions. For instance, trial sites or temporary materials can be used to assess policy impact before instituting permanent changes. In Stockholm (shown here), the effects of congestion charging were monitored during a seven month trial period before being brought to referendum and then implemented on a permanent basis.
The IEA has published several additional resources for policy makers and local practitioners to implement policies to improve transport system efficiencies, including the recent policy pathways on fuel economy for road vehicles and joint approaches for energy efficiency finance. IEA Technology Roadmaps also underscore the role of alternative vehicles and fuels in achieving a more efficient, sustainable transport sector. The annual EV City Casebook likewise highlights efforts to increase electric vehicles in cities across the globe.

As noted earlier by Mrs. van der Hoeven, this report and the Policy Pathway webpage are also filled with numerous policy tools and references to assist planners and policy makers in implementing urban transport energy efficient policies. Although the list is by no means exhaustive, we hope it will serve as a useful tool and will continue to improve it with further resources to assist cities in improving transport energy efficiency.
• The Policy Pathway is available for free on the IEA website, and this presentation will also be posted to the Pathway webpage.

• I would like to take this opportunity to thank our many contributors, transport experts and policy analysts who contributed to this publication, and I would also like to thank EBRD once again for their expert input and for their support of this project and the Policy Pathway Series.

• We will now open the floor for questions.

• Thank you very much for your attention.