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VISION FOR CLEAN AIR CITIES : IMPACT OF URBAN TRANSPORT

17th Urban Mobility India Conference & Expo 2024
Standardization and Optimization of Urban Transport Solutions

MS. SHRUTI NARAYAN

MANAGING DIRECTOR, REGIONS AND MAYORAL ENGAGEMENT, AND REGIONAL DIRECTOR, SOUTH AND WEST ASIA, C40

Shruti Narayan is the Managing Director of Regions and Mayoral Engagement. Shruti previously served as C40 Regional Director for South and West Asia. She is based in New Delhi, India, and works closely with city leadership to sustain and scale up C40's regional efforts.

Before this she was an Upstream Officer with the International Finance Corporation's (IFC, World Bank Group) Asia Pacific Cities Platform and has also led the IFC's Green Building programme in South Asia. Shruti has almost 20 years of global work experience specialising in energy efficiency and sustainability. Her work experience also includes Will Alsop Architects in London, Arup in San Francisco and USAID ECOIII in New Delhi, where she has worked with diverse clients such as corporates, developers, institutions, policymakers and donor agencies to identify, design, incorporate and implement sustainable solutions with the goal of reducing resource consumption and maximising efficiency.

In addition, she has also been a faculty member in sustainable design with educational institutions globally, such as Stanford University, USA, California College of Arts, USA, and the School of Planning and Architecture in India.

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MS. NICOLA BEER

VICE-PRESIDENT, EUROPEAN INVESTMENT BANK

Nicola Beer is Vice President of the European Investment Bank (EIB) in Luxembourg.

From 2019 to 2023, she served as Vice President and Member of the European Parliament, focusing on the Economic and Monetary Affairs, Industry and Research, and Foreign Affairs Committees. Prior to this, she was a Member of the German Bundestag from 2017 to 2019. From 1999 to 2009 and 2014 to 2017, Mrs. Beer served in the Hessian State Parliament, where she was Hessian Minister for Education (2012-2014) and State Secretary for European Affairs (2009-2012). Her political career began as a city councilor in Frankfurt am Main, alongside her work as a self-employed lawyer. Before studying law at the University of Frankfurt, she trained as a bank clerk. She was Secretary General of the Free Democratic Party (FDP) from 2013 to 2019 and deputy federal chairwoman from 2019 to 2023.

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MR. ZOLTÁN DONÁTH

PRINCIPAL ADVISOR, LEAD TRANSPORT ENGINEER, EUROPEAN INVESTMENT BANK

Zoltán Donáth is the Principal Advisor and Lead Transport Engineer at the European Investment Bank (EIB) in Luxembourg, working within the Urban Mobility Division of the Project Directorate.

With over 35 years of experience in urban mobility, Donáth has been with the EIB since 2009, appraising and monitoring transport projects across Europe and globally, focusing on urban mobility in India. Prior to joining the Bank, he spent nearly two decades in Budapest's public transportation sector, serving as Technical Deputy CEO of Budapest Transport Limited (BKV) from 2004 to 2007, overseeing the technical operation of metros, trams, buses, and more. He was also CEO of a Hungarian bus manufacturing company from 2007 to 2009.

Throughout his career, Donáth has managed complex procurement, logistical, and investment activities, leading major urban mobility projects financed by International Financial Institutions like the World Bank, EBRD, and EIB.

MR. KUMAR KESHAV

PROJECT DIRECTOR, URBAN MOBILITY COMPETENCE HUB FOR EUROPEAN INVESTMENT BANK

Mr. Kumar Keshav, a distinguished professional from the Indian Railway Service of Engineers (1982 batch), brings over four decades of experience in urban mobility. His exceptional leadership earned him the 'Man of Excellence' award by the Indian Achievers Forum.

He has led teams in the design, procurement, and execution of major urban transport projects.Keshav's expertise includes roles with Indian Railways, Delhi Metro Rail Corporation (JICA-funded) as Director, and Uttar Pradesh Metro Rail Corporation (EIB-funded) as Managing Director, where he led the Lucknow Metro to early completion, prioritizing international safety and quality standards. After leaving UPMRC in 2022, he became CEO of DB RRTS Operations India Ltd., overseeing the Delhi-Meerut RRTS corridor, operational in 2023. He also directed a Heavy Haul Rail project in Australia.With a 40-year career, Keshav has worked with International Financial Institutions like EIB and JICA.

He is currently Director of Business Development (India) at DB International Operations and Project Director at the Urban Mobility Competence Hub for the European Investment Bank.

DR. MONICA KASHKARI

SPECIAL OFFICER, DIRECTORATE OF URBAN LAND TRANSPORT (DULT)

With 23 years of experience in urban planning, the individual holds a B.Arch (1995-2000) from Pune University, M.Tech. (Urban Planning) (2000-2001) from Guru Nanak Dev University (Merit Certificate), and a PhD from Sushant University, Gurgaon, on "Policy for Sustainable Urban Form for Historic Towns of Karnataka."Currently working at a senior level with the Government of Karnataka, the individual has led urban mobility and infrastructure projects.

Key achievements include infrastructure planning for 146 ULBs and master plans for local areas. They also contributed to the UNESCO-led heritage plan for Anegundi in Hampi.Currently, they lead Transit-Oriented Development (TOD) planning for suburban railway stations and are involved in introducing bus priority lanes, walkability projects, bike-sharing systems in Hampi, and accessibility improvements across Karnataka cities.

MR. REDA SOUIRGI

HEAD OF DIGITAL AND MOBILITY DIVISION, AGENCE FRANÇAISE DE DÉVELOPPEMENT (AFD)

Reda SOUIRGI is head of the Mobility and Digital Division within AFD (the French Agency for Development), in charge of the agency's financings and programs in the field of sustainable urban mobility, rural transport, national and international connectivity infrastructures, green transport initiatives, ICT and digital public infrastructures.

Reda joined AFD in 2015 as a Task Team Leader for projects and financings in the transport sector, and then served as Deputy Head of the "Transport and Mobility" Division in Paris, overseeing operations in several regions and leading strategic partnerships. He has also been acting as AFD's country director for Sri Lanka, directing a ~1 Bn EUR portfolio of projects in several sectors. Before joining AFD, Reda spent a decade in consultancy and engineering roles, notably with SYSTRA, a global leader in transport engineering.

DR. SHALINI SINHA

DEAN, FACULTY OF PLANNING, CEPT UNIVERSITY & CENTER HEAD AND PRINCIPAL RESEARCHER OF COE-UT

Dr. Shalini Sinha is the Center Head and Principal Researcher of the Center of Excellence in Urban Transport (CoE-UT), Program Chair of the Master of Urban Transport Systems, and an Associate Professor at CEPT University. With around 20 years of experience in India and the UK, she is a seasoned transport and urban planner.

Her work focuses on research, advisory, and capacity building in transport and urban planning. She has contributed to numerous urban transport projects, including BRT systems in Hubli Dharwad, Surat, Vadodara, and Ahmedabad. Dr. Sinha has also led demand modeling for Metro projects in Surat and Ahmedabad and undertaken research on strategic transport planning and public transport network design.

Her research interests include transport policy, economic appraisals, and public transport planning. She is a Member of the IHT (U.K.) and an Associate Member of the Institute of Town Planners, India. Dr. Sinha holds a PhD from CEPT University and a Master's in Transport Planning and Engineering from the University of Leeds, U.K. She has also completed specialized training in public transport management and teaching with The World Bank.

MR. M MAHESHWAR RAO

MANAGING DIRECTOR
BANGALORE METRO RAIL CORPORATION LIMITED

M Maheshwar Rao brings over 15 years of experience in the urban mobility sector and will lead BMRCL's efforts to decongest Bengaluru traffic, reduce vehicle pollution, and enhance public transport. Rao has previously served as Commissioner of Industrial Development and Director of Industries & Commerce and held the role of Deputy Commissioner in Dakshina Kannada and Mandya districts.

He has also worked as Additional Secretary and Financial Advisor, Department of Space, Bengaluru, and held various positions in the Karnataka Government, including Managing Director of Karnataka State Industrial Investment and Development Corporation and Karnataka Power Corporation Ltd. He served as Principal Secretary for multiple departments including Labour and Employment, and Industry & Commerce.

A 1995-batch IAS officer, Rao holds a BA in Mathematics, Economics, and Statistics from Nizam College, a Master's in Economics from the University of Hyderabad, and a Master's in Public Management from NUS & Harvard University.

DR. KARAN MADAN

ASSOCIATE PROFESSOR
DEPARTMENT OF PULMONARY, CRITICAL CARE & SLEEP MEDICINE
AIIMS

Dr. Karan Madan is an Associate Professor in the Department of Pulmonary, Critical Care, and Sleep Medicine at the All India Institute of Medical Sciences (AIIMS), New Delhi. His work focuses on air quality, public health, and the impacts of climate change on respiratory diseases. Dr. Madan has extensive expertise in the diagnosis and management of respiratory conditions, with a special interest in how environmental factors such as poor air quality contribute to the rising prevalence of lung diseases in urban populations. His research highlights the critical intersection of public health and environmental sustainability, particularly the health impacts of air pollution and the importance of mitigating climate change to improve population health outcomes.

Dr. Madan is also actively involved in public health initiatives aimed at raising awareness about air pollution's effects on lung health and advocating for policies to improve air quality standards. His clinical work and research both underscore the urgent need for integrating climate change mitigation strategies into public health planning, especially in densely populated regions like India, where air quality concerns are paramount.

AMIT KUMAR

SENIOR VICE PRESIDENT
MOTT MACDONALD PVT LTD

Amit Kumar is a highly experienced Chartered Civil Engineer with 23 years of expertise in delivering large-scale infrastructure projects across India, the Middle East, Bangladesh, and the UK. He holds a Master's degree in Environmental Engineering and a Bachelor's degree in Civil Engineering, along with the prestigious MICE accreditation from the Institution of Civil Engineers (ICE), UK.

Throughout his career, Amit has led multidisciplinary, multinational teams in executing a broad range of projects for various government, semi-government, and private entities, as well as for external funding agencies like ADB, the World Bank, UNDP, DFID, and JICA. His project management experience spans the full lifecycle—from concept through to handover—while ensuring strong commercial performance, risk management, and alignment with health, safety, environment, and sustainability goals.

Amit's vast experience in engineering consultancy and his ability to manage multiyear, multi-funding projects make him a key leader in the infrastructure development sector.

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WHY DO CITIES MATTER?

Cities occupy **2%** of the world's landmass

Cities consume around **75%** of the world's energy

Cities create over **70%** of energy-related greenhouse gas emissions

Cities generate over **80%** of the world's GDP

Urban Transportation

1/3 Of cities' emissions come from transport (Analysis done on 97 C40 cities)

#1 source of urban air pollution is traffic

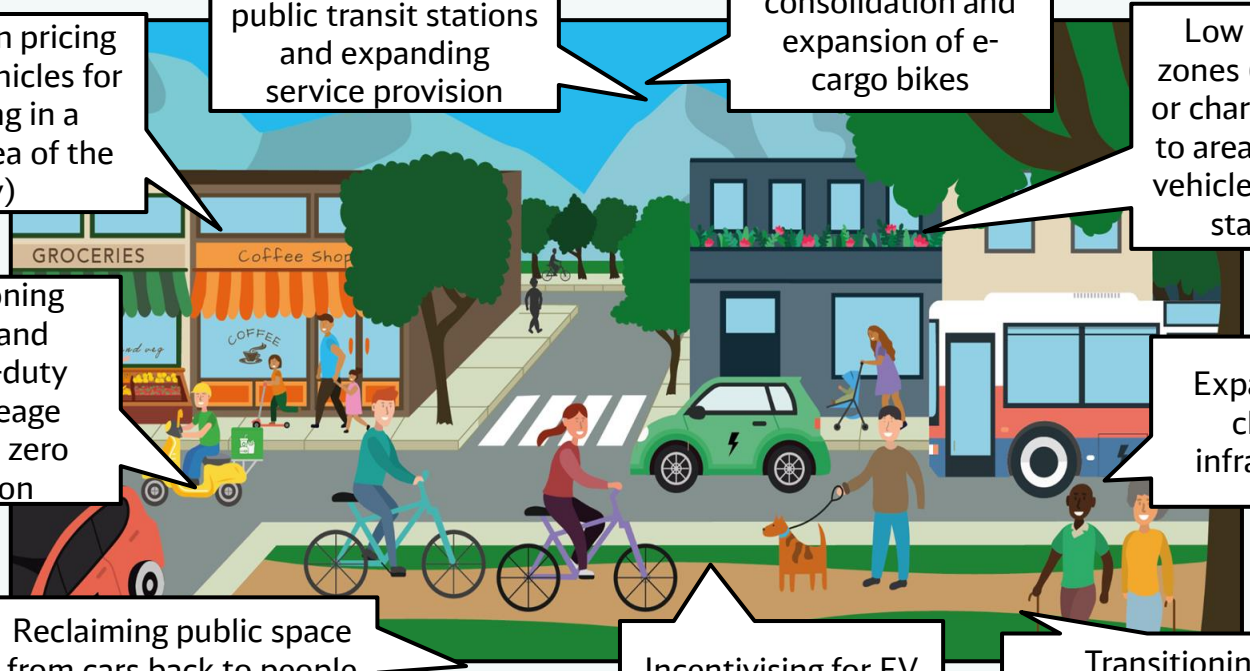
Impact Of Urban Transport and Air Pollution

- **9 OUT 10** PEOPLE LIVE WITH UNHEALTHY AIR CONTRIBUTING TO SERIOUS HEALTH ISSUES AND **4.2 MILLION PREMATURE DEATHS** ANNUALLY ARE LINKED TO OUTDOOR AIR POLLUTION*
- **1.35 MILLION** ROAD FATALITIES EACH YEAR INVOLVE VULNERABLE ROAD USERS—THOSE WALKING, CYCLING, OR RIDING MOTORCYCLES.
- HEALTH COSTS FROM AIR POLLUTION CAN AMOUNT TO **$5.11 TRILLION** GLOBALLY PER YEAR
- LONG COMMUTES CAN LEAD TO A **10% INCREASE** IN **MENTAL HEALTH ISSUES,** INCLUDING ANXIETY AND DEPRESSION

Challenge

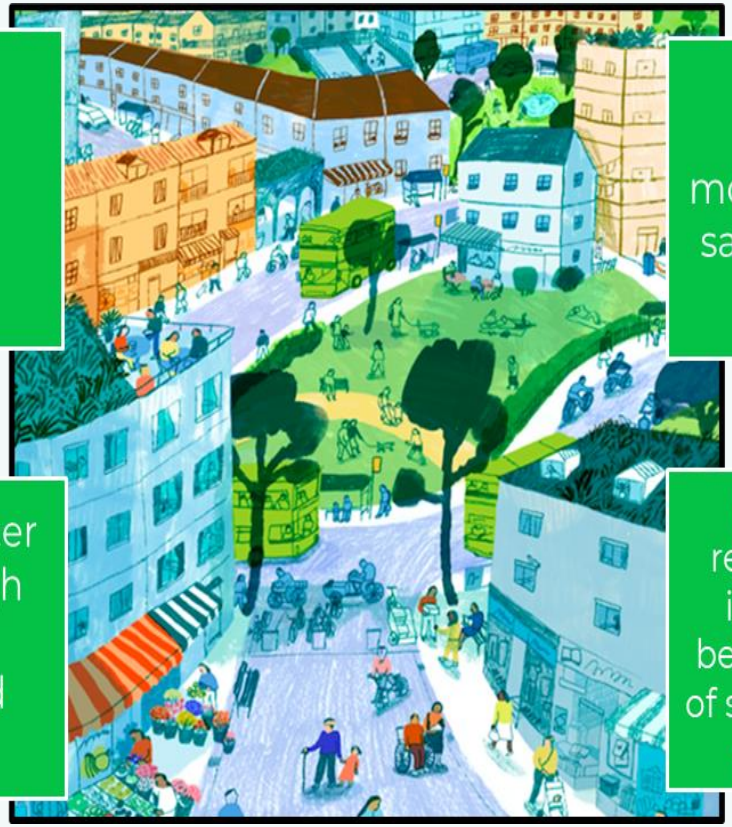
What is the Solution???

Holistic and People-centred Mobility Vision for Cities



Benefits of an Integrated and Well-Designed Transport and Urban Planning Strategy

Environmental benefits: reduced emissions and air pollution



Health benefits: increased active mobility; improved road safety; access to green spaces

Social benefits: better quality of life through enhanced social cohesion; improved public transport

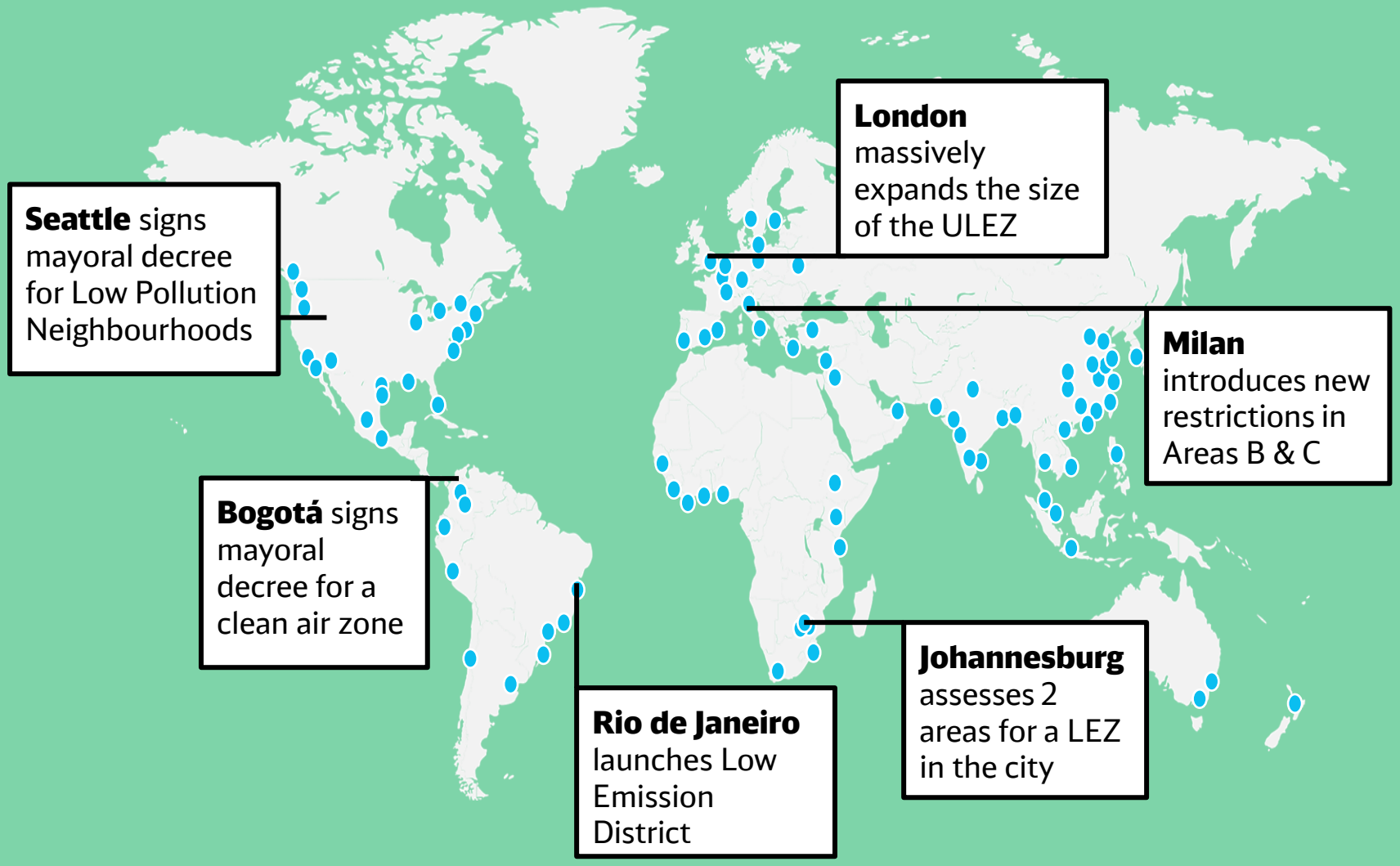
Economic benefits: reduced congestion and increased productivity; better access and visibility of shops; increased outdoor spaces for businesses

Proper investment in public transport could:

- **create 4.6 million additional jobs** by 2030 across the 97 cities (C40)
- **cut emissions** from urban transport by more than half by 2030
- **reduce air pollution** from transport in some cities by up to 45%
- **protect tens of millions of workers** in lower income and service sector jobs
- **10x safer** than travelling by car
- **4.8% reduced** risk of depression among users
- **23% reduced** risk of heart disease and stroke among users

Public transport must double in cities over the next decade to meet 1.5°C target.

Introduction of Zero Emission Areas (ZEAS) and "Stepping Stone Policies" around the World`



Prioritizing urban transport planning that reduces greenhouse gas emissions, improves air quality, and safeguards public health is needed in cities.

"There are multiple opportunities in the mobility sector that cities can implement to address its impact on climate concerns..."

VISION FOR CLEAN AIR CITIES
IMPACT OF URBAN TRANSPORT

Vision for Clean Air Cities: Impact of Urban Transport

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AN INTERNATIONAL INVESTOR'S PERSPECTIVE

THE EUROPEAN INVESTMENT BANK (EIB) IN INDIA

- ✓ The Bank is the **lending arm of the EU**
- ✓ The **biggest multilateral financial institution in the World** and **one of the largest providers of climate finance**
- ✓ Strongly committed to **supporting economic and social development**. Outside the EU, the EIB invests to create stability, **promote sustainable growth and fight climate change** in support of the EU Global Gateway strategy.
- ✓ In the last **10 years 16 cities in India have invested in metro** and suburban rail projects. Out of these, **the EIB is supporting 6 cities (40%)** and **25% of the kms of rail tracks** to be put in use.
- ✓ The collaboration started in 2015 with the first approval for Lucknow Metro and **today total of EUR 3.25bn of loans that will serve almost 23 million people**, in 4 different States in India.

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Public

EIB CLIMATE BANK ROADMAP & TRANSPORT LENDING POLICY IN URBAN MOBILITY

- **Sustainable urban mobility** and **modal shift** are the cornerstone of **climate mitigation** in urban transport.
- EIB lending supports **collective transport** as the **most energy efficient and sustainable** urban mobility option.
- As a prerequisite, all EIB urban mobility investments need to be underpinned by an **acceptable land use and sustainable transport strategy**.
- **Metros are the backbone of efficient public transport** networks and catalyse mixed-use, pedestrian and cycle friendly urban developments.
- Metro projects bring **social, environmental and climate benefits and contribute to sustainable urban development** particularly in growing urban agglomerations.

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Public

METRO RAIL POLICY & URBAN MOBILITY IN INDIA

- Currently **Indian cities do not have sufficient public transport, energy efficient and clean urban transport options** to serve the mobility needs of an increasing urban population.
- This leads to very **high use of personal cars/motorbikes which creates traffic congestion, very high levels of road fatalities** and general roads safety issues (approx. 150,000 fatal accidents a year).
- In addition, these mobility choices **exacerbate pollution** and currently India has **10 of the 20 most polluted cities** in the world.
- The **Metro Rail Policy 2017**, is one of the key policies supporting a better public transport, energy efficient and clean urban transport direction.
- In addition, the Metro Rail Policy is considered to support the **National Clean Air Programme** (NCAP) which aims to address air pollution across 131 cities in 24 States.

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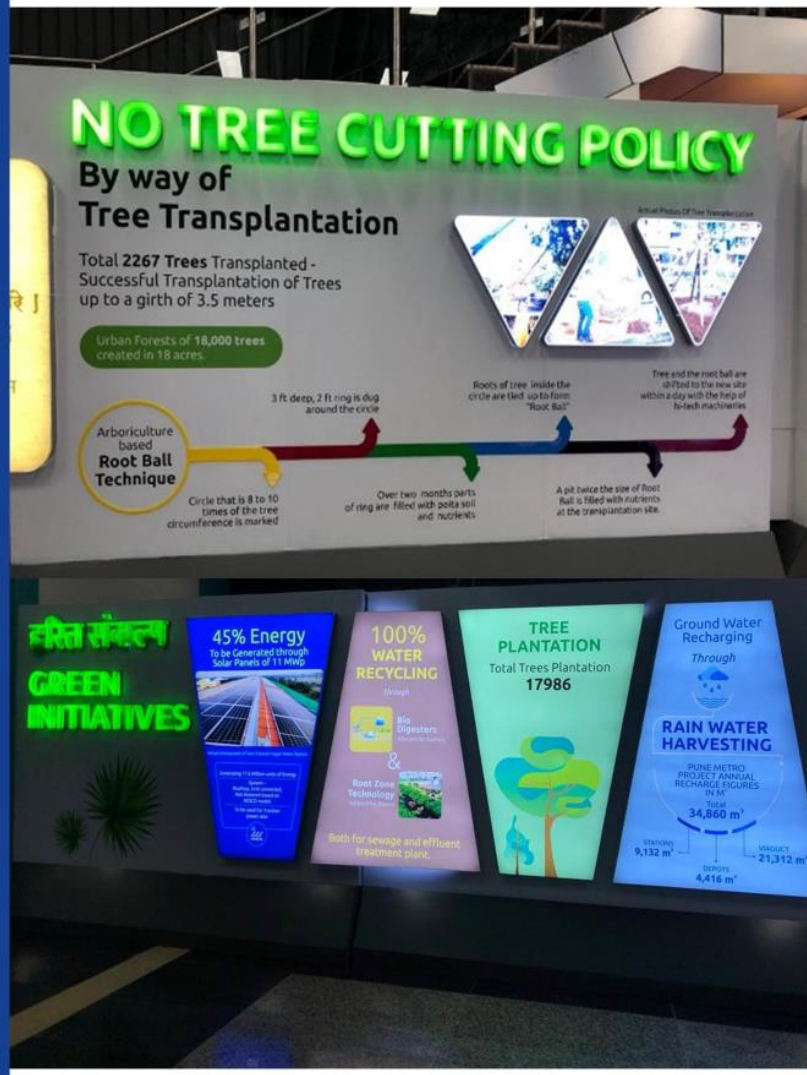
CLIMATE & ENVIRONMENTAL CONSIDERATIONS

- According to the National Clean Air Plan (NCPA) statistics, **many cities in India reduced their air pollution in 2024** compared to the 2018 baseline.

- Considering the EIB portfolio in India, the following are notable:
  - Lucknow, Kanpur and Agra reduced their PM10 levels by **40%**,
  - Bengaluru by **30-40%** and
  - Pune and Nagpur by approx. **10%**

- The metro projects have incorporated wider environmental policies which aim to improve environmental performance both during implementation and operation such as:
  - "No tree-cutting" policy
  - Energy efficiency strategy for both traction and non-traction related measures
  - Water recycling in operation and maintenance activities, etc.



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VISION FOR CLEAN AIR CITIES
IMPACT OF URBAN TRANSPORT

Benchmarking of resource efficiency in urban transport

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CHOICE OF SYSTEM

- The **choice of urban mobility system is key** in ensuring urban mobility patterns and volumes are supported
- The main choices are usually between **BRTs, trams and metros** or between **lower capacity and greater flexibility** (BRTs) to **higher-capacity and lower flexibility** (trams and metros)
- There are **grey areas between all these systems, where the choice will depend** mainly on the existing and projected urban development patterns and population growth
- **Greater capacity means greater costs but** if these costs are well managed and the system achieves the demand it will **also bring higher social, economic and environmental benefits**

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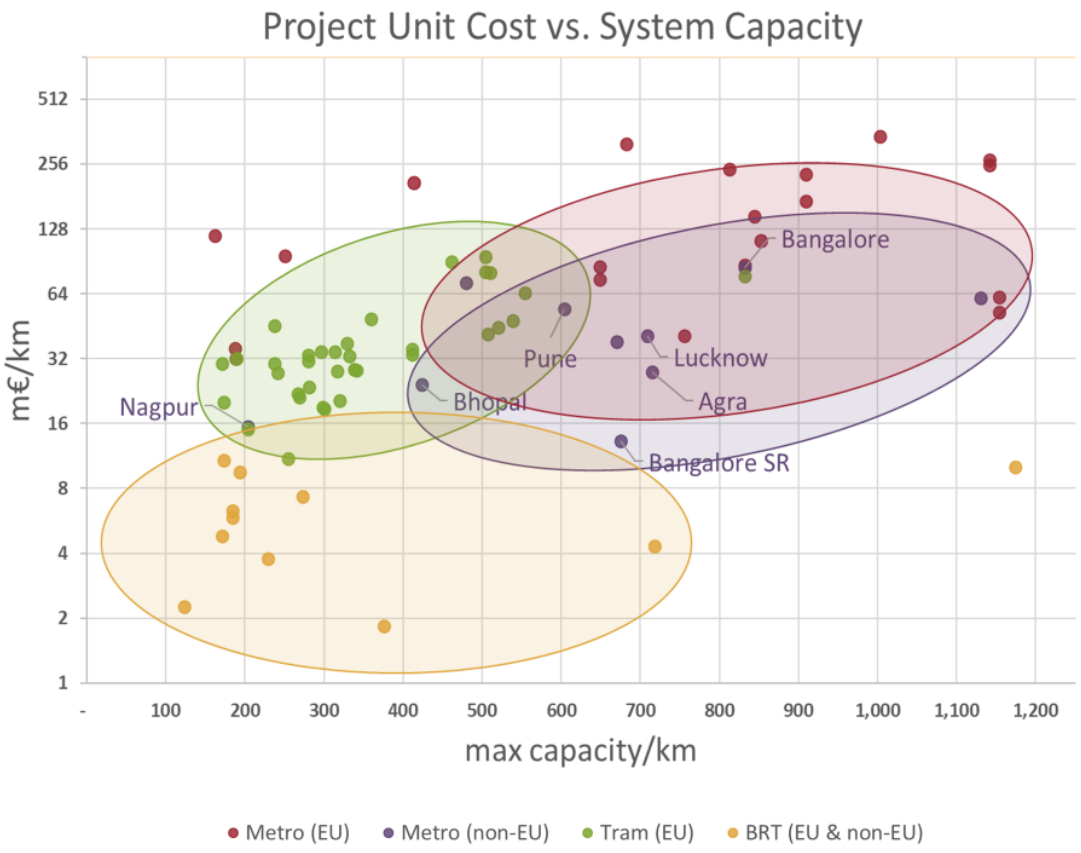

IMPLEMENTATION

- In the EIB India portfolio observed **good performance** in terms of efficiencies in the implementation stage **achieved through standardisation and knowledge exchange** between cities
- **The overall project unit cost per km** tends to be **lower** than other metros in Europe and internationally
- Also, the **unit cost of systems and equipment ranks similarly** against international benchmarks
- The performance against international benchmarks also highlights **the importance of the local and international partnerships** in using best practices and lesson learned

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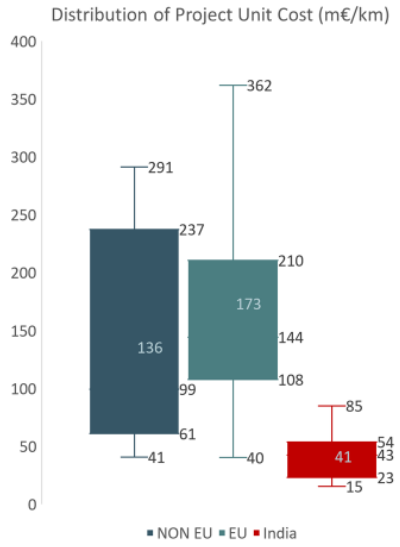

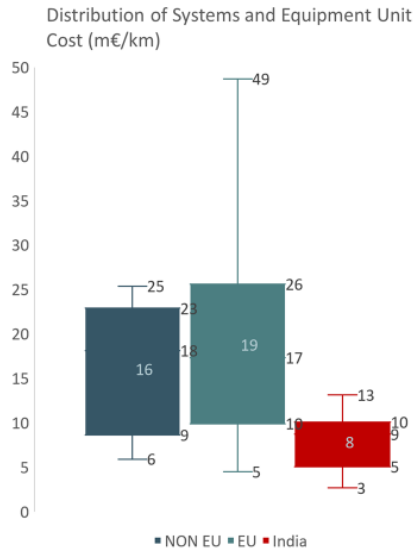

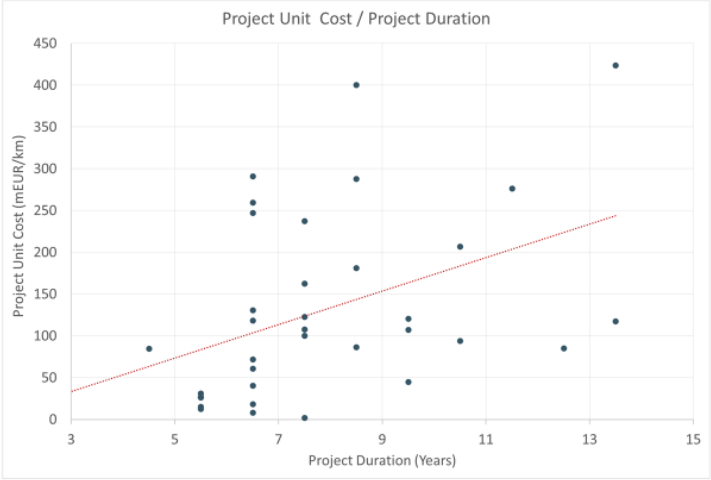

EIB Projects Directorate

Zoltán Donáth
Principal Advisor
Lead Transport Engineer

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considerations
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transitioning
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facilities
institutional
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expanding
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conservation
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