ENUAC PROJECTS CATALOGUE 2023

SINO-EUROPEAN PROGRAM

EDITORS
Katarina Schylberg, IQ Samhällsbyggnad
Ida Mårtensson, IQ Samhällsbyggnad

DESIGN AND LAYOUT
Chris Versteeg, Projekt C

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CONTENT

ENUAC SINO-EUROPEAN PROJECTS CATALOGUE

This projects catalogue presents the eight projects that were granted funding in the ERA-Net Cofund Urban Accessibility and Connectivity Sino-European call, issued through a joint collaboration between JPI Urban Europe and the National Natural Science Foundation of China in 2022.

In answer to the global urbanisation challenge, the Joint programming Inititiative (JPI) Urban Europe and the National Natural Science Foundation of China (NSFC) agreed in 2017 to work towards a long-term cooperation programme in the area of sustainable urbanisation, in which different topics would be addressed in a series of calls over time. The first pilot call launched in 2018 addressed the overall theme of sustainable and liveable cities and urban areas. Building on the experiences from the first call a second call was launched in 2022 as an additional activity in the framework of the ERA-Net Cofund Urban Accessibility and Connectivity (ENUAC). This call, the ENUAC Sino-European call, address the urban mobility, accessibility, and connectivity challenge in the Sino-European cooperation, with a focus on knowledge and impact.

Nine national funding agencies, from China, Belgium, Denmark, France, the Netherlands, Poland, Romania, Slovenia and Sweden collaborated to make it possible for researchers and urban practioners to collaborate in transnational and transdisciplinary projects. The call requested proposals from a wide variety of academic disciplines addressing the current challenges around transportation and logistics, mobility and urban sustainability, both from a perspective of understanding current developments, and from the perspective of developing new and innovative solutions to address the challenges. Disciplines may include, but are not limited to management, economics, civil and industrial engineering, operations research, psychology, computer science, geography, sociology and urban planning.

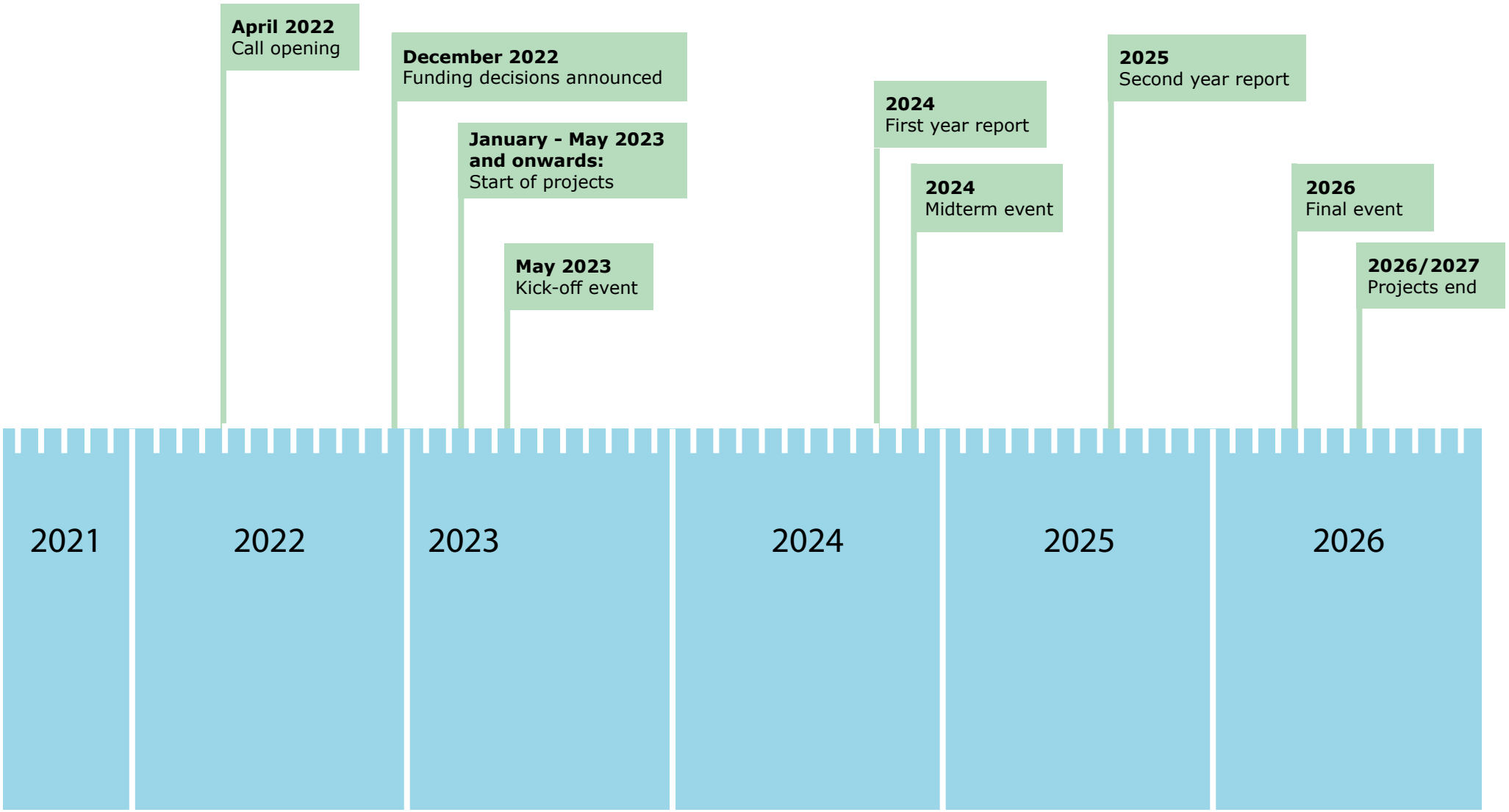
CALL TOPICS

The eight projects funded in the call address either one of the key themes or a combination of both:

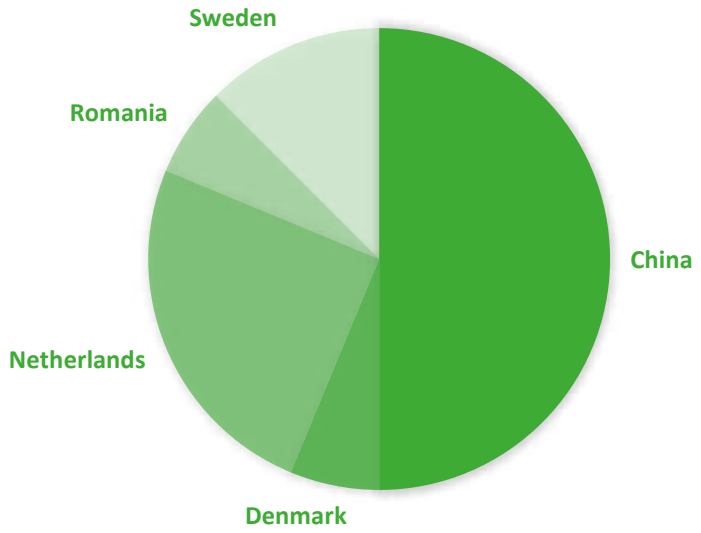
Theme 1: Sustainable Urban Logistics in the Age of Digitisation
Theme 2: Strengthening Climate-neutral Mobility

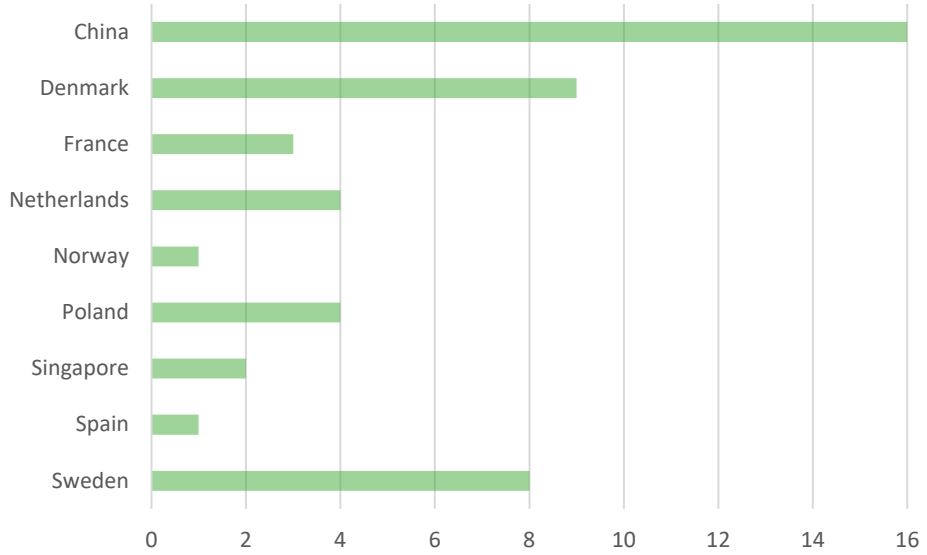
TIMELINE

The ENUAC Sino-European call was issued in February 2022
and in December of 2022, 8 projects were awarded.
The projects will begin in spring 2023 and finish in 2026.



STATISTICS





COORDINATORS PER COUNTRY

China	8
Denmark	1
Netherlands	4
Romania	1
Sweden	2
Total:	**16**

PROJECT PARTNERS PER COUNTRY

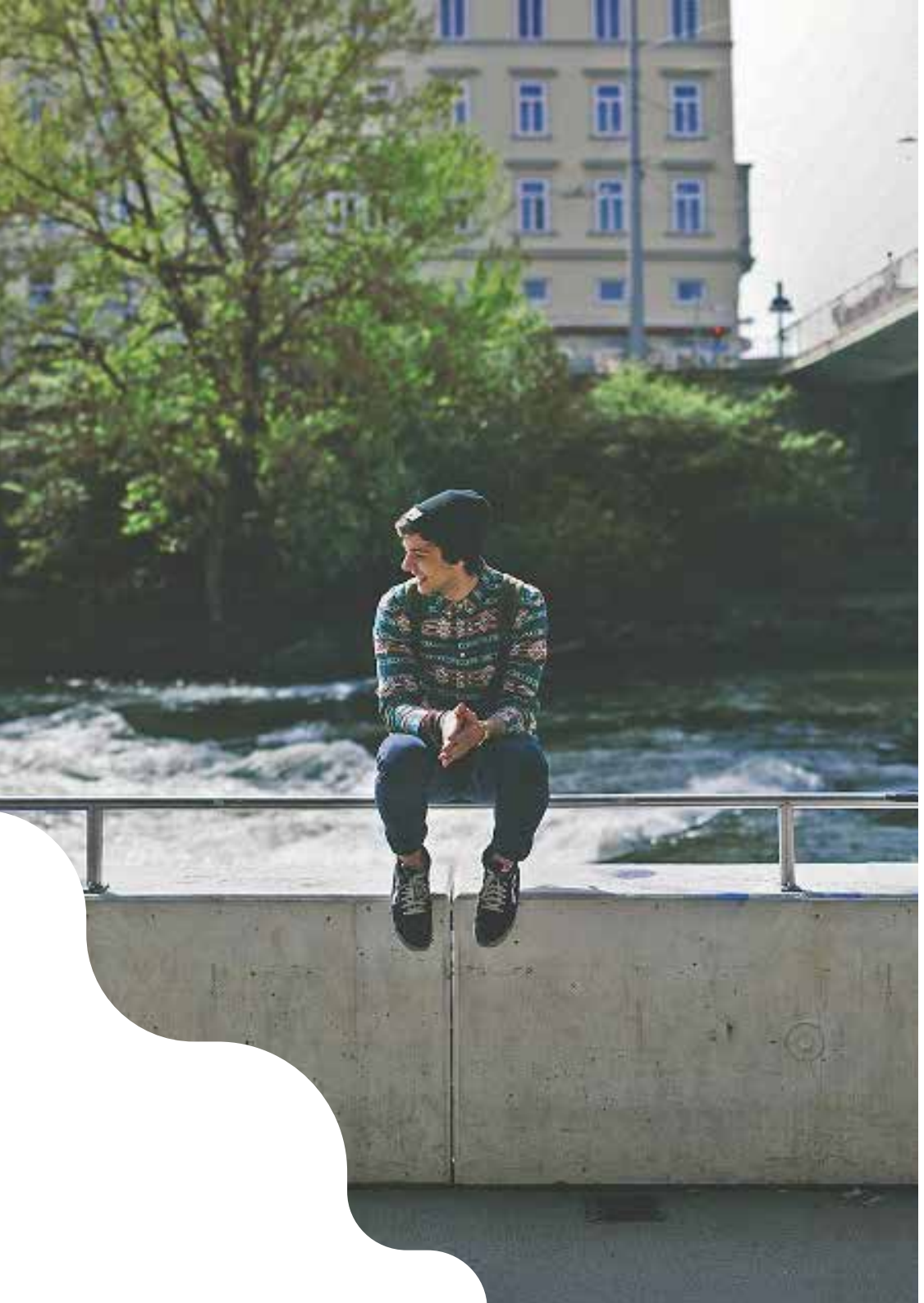
China	16
Denmark	9
France	3
Netherlands	4
Norway	1
Poland	4
Singapore	2
Spain	1
Sweden	8
Total:	**46**

COUNTRIES AND AGENCIES

COUNTRY	AGENCY
China	National Natural Science Foundation of China (NSFC)
Denmark	Innovation Fund Denmark (IFD)
France	Agence Nationale de la Recherche (ANR)
Netherlands	Dutch Research Council (NWO)
Poland	National Science Centre (NCN)
Romania	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
Sweden	Swedish Energy Agency (SWEA), Viable Cities, Vinnova

CALL TOPICS

PROJECT	SUSTAINABLE URBAN LOGISTICS IN THE AGE OF DIGITISATION		STRENGTHENING CLIMATE-NEUTRAL MOBILITY	
E-Laas	•			
e-MATS			•	
IMTECC			•	
IMUMCN			•	
NEW NORMAL	•		•	
SINERGI	•			
SOUL	•			
TOD2			•	



PROJECTS

E-Laas
e-MATS
IMTECC
IMUMCN
NEW NORMAL
SINERGI
SOUL
TOD2

E-LAAS

Energy optimal urban Logistics as A Service

The E-Laas project proposes a new and operational energy-based approach to designing multimodal urban logistics systems. In E-Laas, urban delivery systems are compared with their energy use including modal shift (micro platforms) and new ways of combining charging, automation, and freight parking. This energy-based and quantitative approach enables us to relate logistics as a service to sustainability.

E-Laas overall goal is to create a new energy minimization methodology, from consolidation centers to customers' doors, stimulating energy savings at every level. In addition, the method allows us to contrast different modular solutions via the concept of interlaced energy foot printing.

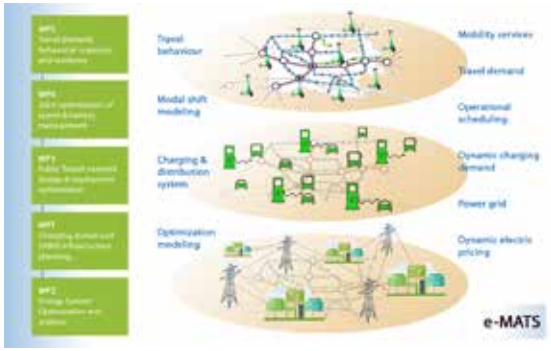
Finally, two additional angles are considered: social responsibility and electric power infrastructure. In this regard, we first examine how to increase social responsibility at different levels (customer, service provider, city). Secondly, we analyze how the power grid and associated i nfrastructure can affect the energy balance of logistics missions.

Contact persons:
Professor Balazs Kulcsar
kulcsar@chalmers.se
Professor ZHEN Lu
lzhen@shu.edu.cn

Duration of the project: 2023-2026
Budget Europe: € 551 809
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/e-laas

E-MATS

Electric Multimodal Transport Systems for Enhancing Urban Accessibility and Connectivity



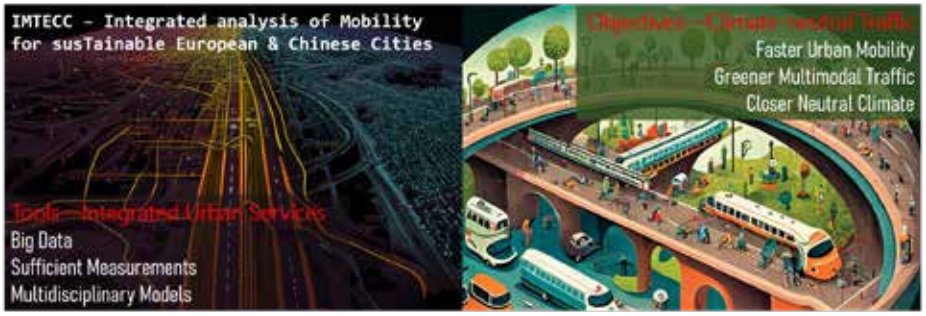
The e-MATS project aims to advance the next-generation multimodal transport systems via electrification, connectivity and sharing. The project will facilitate the development of multimodal transport systems that connect electric public transit and shared micro-mobility for sustainable, more efficient, and equitable mobility services that enhance urban accessibility and resilience.

The project will tackle critical and unsettled aspects in the current practice and engage key stakeholders at multiple levels in co-creation with considerations of diverse users' needs and behavioral responses. Areas of innovation include infrastructure planning at the strategical level, system optimisation, network design and management at the tactical level, and vehicle / platoon control and battery management at the operational level, with considerations of diverse users' needs and behavioral responses.

Solutions will be demonstrated in real-life applications through public authorities and industry partners. These contribute to promoting urban accessibility and connectivity, climate action in the transport sector, and the citizens' subjective well-being in the long term.

Contact persons:
Professor Radu-Emil Precup
radu.precup@upt.ro
Professor JIN Sheng
jinsheng@zju.edu.cn

Duration of the project: 2023-2025
Budget Europe: € 699 469
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/e-mats



IMTECC

Integrated analysis of Mobility for susTainable European & Chinese Cities

Focusing on Chinese and European cities, this project aims to provide tools and case studies for optimizing multimodal traffic management, improving urban mobility, reducing traffic emissions, and finding new solutions towards greener mobility practices, climate-neutral and smart cities.

Based on digital twins and big data approaches, smart traffic management technologies and integrated interdisciplinary methods, this project will build an Integrated Urban System (IUS) and key performance indicators (KPIs) for each city. Taking into account the evolving urban planning, energy consumption, transport supply and demand, and group behaviors in each city, the system will improve our understanding of the interrelations among urban multimodal mobility, traffic emissions, air quality and climate change in cities.

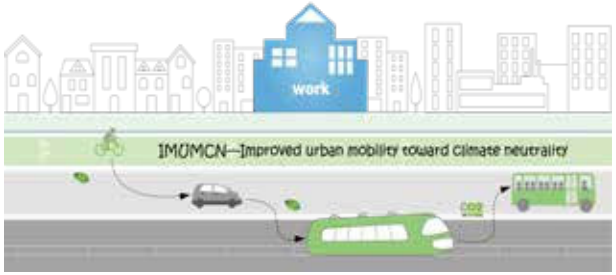
The results will allow to quantify the leverage effects observed, and to highlight issues of environmental justice. The results will establish a model for building climate- and environment-smart cities, promoting Sino-European exchanges and cooperation, and jointly exploring climate neutrality pathways under future urbanization processes.

Contact persons:
Professor Jens Hesselbjerg Christensen
hesselbjerg@nbi.ku.dk
Professor YU Shaocai
shaocaiyu@zju.edu.cn

Duration of the project: 2023-2026
Budget Europe: € 864 465
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/imtec

IMUMCN

Improved urban mobility toward climate neutrality under new working habits and transport modes



Most modern cities struggle with severe traffic congestion and emissions. Thus, achieving an efficient and climate-neutral urban transport system is one of the key urban challenges. The widespread availability of technology (e.g., the internet and smart phones) and changes in societal trends, particularly work habits (e.g., telework and overtime work) adds another layer of complexity, increase uncertainty and provide new challenges to urban mobility.Understanding the impacts of these new developments on citizens' location choices and associated travel patterns and providing new innovative solutions to the urban traffic system is critical to achieve an efficient, low-emission and sustainable urban environment.

With real-life experiments and advanced urban transport modelling approaches, we will investigate short-term behavioral impacts and long-term implications of these challenges on urban mobility and city structure. We will further explore the potential for integrated Mobility as a Service (MaaS) solutions and market-based personal carbon permit trading in providing an efficient, equitable and zero-emission urban traffic system. This project thus aims to contribute to achieving accessible, climate-neutral and sustainable cities in China and the EU and provide citizens with sustainable and efficient solutions integrating multiple types of transport modes.

Contact Persons:
Professor Klaus Hubacek
k.hubacek@rug.nl
Professor BAO Yue
baoyue@bjtu.edu.cn

Duration of the project: 2023-2026
Budget Europe: € 600 000
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/imumcn

NEW NORMAL

Sustainable mobility and logistics for post-pandemic second-tier cities

The project puts forward a novel inter- and trans-disciplinary approach for developing an emission-free, energy-independent and space-efficient mobility system based on car sharing and drone-based logistics to meet the influx of newcomers in second-tier cities without the construction of new heavy mobility infrastructure such as metro and tram lines, tunnels, bridges, and widening streets.

MaaS-Lane is designed based on the potentials of edge technologies tested in the pilot tests on EVs (electric vehicles), drones, on-surface solar panels, wireless EV charging, and hydrogen generation and storage, which are combined into a large-scale approach for mobility and logistics.

Including four universities with expertise in (1) geography and spatial planning, (2) traffic engineering, (3) logistics, and (4) electronic engineering, the project aims at developing and assessing the potential of its novel approach in 169 second-tier, and new first-tier, EU and Chinese cities and, together with partner municipality, to adapt detailed MaaS-Lanes for cities of Xi'an (China) and Nijmegen (the Netherlands). The project seeks broader impact by developing knowledge hubs, an interactive GIS database on the 169 cities for scientists and decision-makers, and an online platform for citizens.

Contact persons:
Dr Bardia Mashhoodi
bardia.mashhoodi@wur.nl
Professor GE Ying-en
yege@chd.edu.cn

Duration of the project: 2023-2026
Budget Europe: € 649 978
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/new-normal

SINERGI

Sustainable Innovative digitalized NEtwork of uRban loGIstics

Cities face surge in demands for fast home-deliveries increasing market share of online platforms, Just Eat Takeaway.com, Milkrun and Meituan. Europe and China aim at reducing polluting vehicles in city-centres, giving more space for pedestrians and cyclists. This coupled with digital transformation of delivery systems provide opportunities for new urban-logistics solutions.

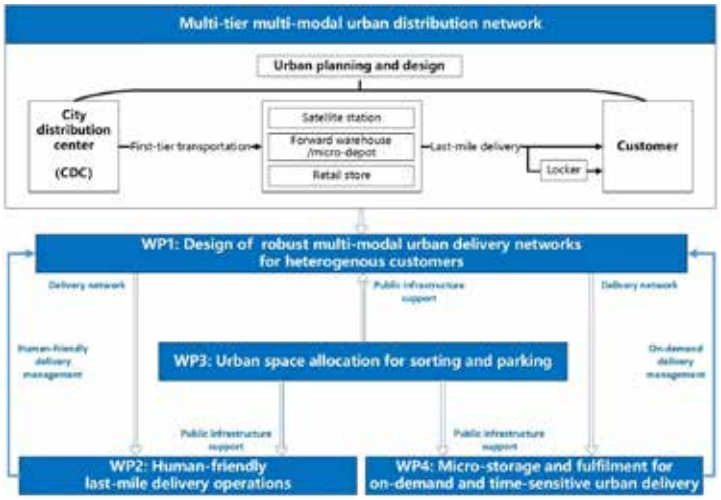
SINERGI proposes a comprehensive solution for sustainable city-logistics. Private and public stakeholders will provide pilots in Amsterdam, Shanghai, Singapore, and Copenhagen. The project outputs enable delivery providers to offer cost-efficient services considering well-being of riders. Public authorities can develop a set of actions on road safety and citizens' welfare.

Contact persons:
Dr Shadi Sharif Azadeh
s.sharifazadeh@tudelft.nl
Professor AN Kun
kunan@tongji.edu.cn

Duration of the project: 2023-2025
Budget Europe: € 719 302
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/sinergi

SOUL

Sustainable Operations in Urban Logistics



Urbanization and rapid growth in e-commerce and on-demand services demand time-sensitive and fragmented delivery, motivating innovations in sustainable urban logistics. Multi-tier urban delivery networks involve micro-storage and sorting of delivery goods, implying increased use of urban space.

We develop innovative strategies leveraging advanced analytics to cope with the inherent dynamics of urban logistics systems and limited urban space while meeting increasing customer expectations. We explicitly consider couriers' welfare, recognizing their stress and cognitive strength.

Our approach recognizes the triple bottom line of sustainability: ecological, economic, and social sustainability.

Contact persons:
Professor Prof Jan Fransoo
jan.fransoo@tilburguniversity.edu,
Professor ZHAO Lei
lzhao@tsinghua.edu.cn

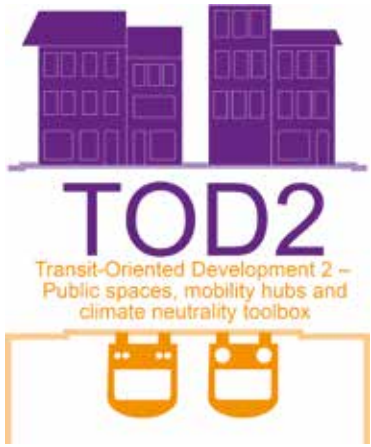
Duration of the project: 2023-2026
Budget Europe: € 551 809
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/soul/

TOD 2

Transit-Oriented Development 2

Automobile travel consumes scarce resources of fossil oil, accelerates climate change globally and creates air pollution locally. Transit-Oriented Development is an urban design policy that seeks to redesign car-oriented neighbourhoods, integrate transit infrastructure in neighborhoods and inspire modal shift from private car to walking and public transport.

This project will investigate station areas in Sweden, Denmark and China to develop a TOD2 framework with perspectives on public spaces, shared mobility and innovative mobility hubs, and carbon-neutrality toolboxes.
It aims to contribute in achieving decarbonisation and decreased oil dependence in European and Chinese cities.



Contact persons:
Dr Todor Stojanovski
todor@kth.se
Professor DING Wowo
dww@nju.edu.cn

Duration of the project: 2023-2026
Budget Europe: € 1 340 453
Budget China: 2 000 000 RMB
https://jpi-urbaneurope.eu/project/tod2

CONTACT US

The ENUAC initiative is operated on a daily basis by a European management team. Many operational issues are dealt by national funding agency contact points.

CALL SECRETARIAT

Berry Bonenkamp, NWO, Netherlands: b.bonenkamp@nwo.nl
Maaike Spiekerman, NWO, Netherlands: m.spiekerman@nwo.nl
SHEN Jie, NSFC, China: shenjie@nsfc.gov.cn
Helena Arntz, NWO, Netherlands: jpiue-nsfc@nwo.nl
Elena Simion, UEFISCDI, Romania: elena.simion@uefiscdi.ro

COMMUNICATION AND EVENTS

Katarina Schylberg, IQS, Sweden: katarina.schylberg@iqs.se
Ida Mårtensson, IQS, Sweden: ida.martensson@iqs.se

PROJECTS' CONTACT POINT

Elena Simion, UEFISCDI, Romania: elena.simion@uefiscdi.ro

NATIONAL FUNDING AGENCIES

Contact information to all national funding agencies involved in ENUAC and their contact persons are available at www.jpi-urbaneurope.eu

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URBAN EUROPE

JPI Urban Europe
@JPIUrbanEurope
@JPIUrbanEurope

www.jpi-urbaneurope.eu
info@jpi-urbaneurope.eu