



131 IDEAS FOR EMPOWERMENT

IN THE TRANSITION TO SUSTAINABLE URBAN MOBILITY

INNOAIR

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Innovative demand responsive green public transportation for cleaner air in urban environment



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INTRODUCTION

As people have all become more mobile, so the negative environmental and health costs of transport have increased. It is in cities that pollution, congestion and noise are felt the most. The European cities transport system strive to achieve its green and digital transformation and become more resilient to future crises.

This, however, requires considerable changes in societal practices and in the behaviour of individuals, communities, and public and private organisations. These changes include – among other areas - mobility behaviour, minimising traffic-related emissions and energy/resource consumption, a sense of environmental citizenship, personal health and well-being.

This green transition cannot be top-down. The societal change should be just and inclusive, putting people first. Ambitious actions are required to engage people, communities and organisations, as well as structural measures to support affected groups.

We therefore need accelerated change of citizen's behaviour towards more sustainable patterns. We need to directly involve citizens in realising their personal impact on climate and the environment thus leading to a change in their behaviour, reducing the extensive use of private vehicles, decreasing their personal carbon footprint and taking action at societal level towards a more sustainable future.

This is what we call empowerment:

A process through which people increase their access to knowledge, resources, and decision-making power, and raise their awareness of participation in their communities, in order to reach a level of control over their own environment.

Empowerment cannot be granted by a third party. Those who would become empowered must claim and own it.

The purpose of this guide is to provide practical examples and suggestions for empowerment. They are grouped by agents that touch the lives of most people. Local governments, businesses, universities and educational institutions set “the rules of the game” that shape interaction and individual choices. They should lead the way for a local community that cares. The examples and ideas presented here are based on participatory research carried out in Sofia that engaged over 450 individuals and 15 companies and institutions through focus groups, in-depth interviews, co-design workshops and online questionnaires, together with document analyses. We hope they could encourage, inspire and trigger others to join the empowerment journey to sustainable low-carbon urban mobility.

Empowerment is an ongoing process rather than a destination. There is no final goal. One does not arrive at a stage of being empowered in some absolute sense.

Let's not waste the COVID-19 crisis and take this opportunity to shape resilient and sustainable cities!

IDEAS FOR LOCAL GOVERNMENTS



LOCAL GOVERNMENTS FACE NEW CHALLENGES, NEW DRIVERS OF INNOVATIONS AS WELL AS NEW MOBILITY DEMANDS. HIGH QUALITY PUBLIC TRANSPORT IS THE FUNDAMENTAL BASIS FOR ATTRACTIVE CITIES. THIS INCLUDES AFFORDABLE, FREQUENT AND RELIABLE SERVICE THROUGHOUT THE CITY. URBAN LEADERS SHOULD FOCUS ON THE CONTINUOUS IMPROVEMENT OF PUBLIC AND ACTIVE TRANSPORT (CYCLING AND WALKING) AS WELL AS IMPROVEMENT OF PUBLIC SPACE. USING PUBLIC TRANSPORT DOES NOT ONLY NEED TO BE CHEAPER THAN MOTORIZED INDIVIDUAL TRANSPORT; IT NEEDS TO BE MORE ACCESSIBLE AND MORE CONVENIENT, TOO. TRANSPORT PLANNERS AND DECISION-MAKERS MUST WORK TOWARDS REMOVING THE PERCEPTION THAT ACTIVE AND PUBLIC TRANSPORT IS ONLY FOR POORER PEOPLE. AS A RESPONSE TO CONTINUOUSLY EVOLVING MOBILITY BEHAVIOR, NEW MOBILITY SERVICES CAN ALSO RE-FOCUS THE CONVERSATION ON PEOPLE IN CITIES.

POLICY SHIFTS NEEDED

FOCUS ON TRAFFIC

PRIMARY OBJECTIVE: traffic flow capacity and speed



- Infrastructure as a main topic
- Short and medium term delivery plan
- Planning by experts
- Limited impact assessment

FOCUS ON PEOPLE

PRIMARY OBJECTIVE: accessibility and quality of life, including social equality, health and environmental quality, and economic viability



- Combination of infrastructure, market, regulation, information and promotion
- Short and medium delivery plan embedded in a long-term strategy and vision
- Planning with the involvement of stakeholders and citizens using a participatory and transparent approach
- Systematic evaluation of impacts to facilitate learning and improvement

Adapted from Finnemore, M.; Sikkink, K. *International Norm Dynamics and Political Change*. *Int. Organ.* 1998, 52, 887–917

IDEAS FOR LOCAL GOVERNMENTS



- 1** Consistently apply co-design and co-development approaches that engage citizens on issues what choices should be made.
- 2** Support social and awareness campaigns, company, school and family contests, public events (e.g. energy days, European mobility week, cycling fairs, etc.).
- 3** Encourage the active involvement of citizens in data generation and analysis.
- 4** Provide opportunities for citizens to learn about local, national and European experiences in terms of products and services related to sustainable mobility.
- 5** Develop, adopt and promote digital applications for mobility services as a key to behavioural change in the transport sector to accelerate a shift from the automobile-oriented city to low carbon urban transport.
- 6** Provide and request open data: Provide open data to developers to foster mobile app development in the sustainable mobility sector. Oblige mobility service providers in the region to make their data available to the public sector in order to improve the integration of all modes of transport.
- 7** Provide opportunities for citizens to realize their own impact and make informed choices by publicizing tools like energy calculators, environmental footprint trackers, computer-based models.
- 8** Develop public or public-private replacement schemes of bicycles for new ones.
- 9** Make special efforts for sustainable mobility on schools by school buses, walking buses, etc.
- 10** Digitalize all essential services to reduce the need to travel to access them.
- 11** Constantly improving infrastructure, convenience and service level of public transport to provide an alternative to private motor vehicle usage.
- 12** Give priority to public transport on the road.
- 13** Introduce and publicize public transport monitoring and user satisfaction to improve safety, reliability and comfort.
- 14** Improve law enforcement to deter unlawful use of bus and cycle lanes and unlawful parking.
- 15** Integrate citizens' signals and reports into the law enforcement mechanisms.
- 16** Establish zones for car sharing services in each residential district in connection to conventional public transport, to provide an alternative to private car ownership.
- 17** Promote low carbon emission vehicles, such as battery electric vehicles.
- 18** Introduce emission standards and regular emission testing.
- 19** Develop public or public-private replacement schemes of old vehicles for new eco ones.

IDEAS FOR LOCAL GOVERNMENTS



- 20** Create events and opportunities that allow people to imagine their world differently – imagination is key to empowerment, it reflects the ability to reflect critically on the situation and to develop a vision of alternatives.
- 21** Incentivize long-term public transport use.
- 22** Plan new bicycle lanes by studying the current bicycle routes used, crowdsources by bicycle users.
- 23** Improve safety and security of public and active mobility transport users.
- 24** Improve infrastructure for pedestrians and cyclists to encourage active mobility.
- 25** Provide buffer parking lots around big transport centers, free for public transport card holders.
- 26** Provide open air municipal parking lots for cars with LPG system.
- 27** Exercise sound parking management that discourage private motorized vehicle use.
- 28** Regularly report to the public regarding the revenues from fare boxes, parking fees, congestion charges, and integrate users into planning their reinvestment in the transport system.
- 29** Test the development of green budgets, assess the “greenness” of current funding and taxation schemes and develop holistic approaches for transport financing and funding.
- 30** Establish and implement a good communication strategy with the citizens and businesses to minimize the potential negative challenges for mobility innovations. Base the communication strategy on conveying positive messages to the public – rather than being reactive when problems arise.
- 31** Involve stakeholders, non-official experts and regular citizens as well as the ‘usual suspects’ in communication planning and implementation.
- 32** Broaden micromobility through shared bikes and scooters in the city, which can reduce dependence on private car usage and encourage a lifestyle that does not focus on owning a private vehicle. Stress on their usage as a connection with the public transportation and availability to use them for the “last-mile”.
- 33** Avoid reacting with restrictive and overregulating policies, which can pose major hurdles for new transport solutions.
- 34** Assess new mobility innovations driven by the private sector against publicly set targets and benchmarks regarding quality and safety, to lead to good outcomes for and shape the future mobility of the city.
- 35** Enhance the connectivity of technological, digital and institutional platforms (traffic police, road agency, etc.) to achieve synergies in the low carbon transport sector.
- 36** Attract bright talent and young professionals from various backgrounds, invest in adequately trained staff with experience in new mobility.

IDEAS FOR LOCAL GOVERNMENTS



- 37** Establish and maintain dialogue between relevant municipal departments – transport, energy, environment, digitalization, economy, science, urban planning.
- 38** Instead of crowding out innovative ideas from private and civic stakeholders, attempt to encourage solution ideas for very specific issues.
- 39** Set up overall targets as well as an indicator-based evaluation of implemented measures – this is an essential step to designing a roadmap for sustainable urban transport.
- 40** Establish partnerships with universities in diverse sustainable mobility areas: from providing city relevant topics for student dissertations and theses, to a task to develop posters for a campaign, to testing evaluation methods.
- 41** Expand pedestrian only zones.
- 42** Expand public cycling system.
- 43** Create maps and information materials for the available public transport and active transport facilities in each neighbourhood and distribute them to newly registered residents.
- 44** Introduce traffic calming zones that not only increase road safety but also allow the road to be used by bicycles as well, thus diminishing the need of expensive bike lanes construction.
- 45** Recognize and celebrate the efforts and achievements of diverse players in the area of sustainable mobility – establish an award for businesses, universities, NGOs, contributing to the city goals.
- 46** Use active mobility items as awards for municipal competitions.
- 47** Regularly compare publicly the total cost of private vs. public transport. The financial burden of car ownership is coming to the forefront of people's minds. For many living in areas with good public transport links, car ownership is now seen as a luxury.
- 48** Improve digital accessibility to public transport services.
- 49** Develop diverse packages for public transport passes – family passes, passes for 2 students in the household and other combinations to appeal to a variety of users.
- 50** Promote sustainable mobility education in schools. Education could help young people to become part of the solution to create cleaner cities and improved transport networks by choosing to travel using active, shared and public transport modes.
- 51** Reduce the number of motorized vehicles that belong to the municipality, thus leading by example.
- 52** Encourage behavioral change at key life stages. People are most receptive to change their behaviour whilst they are making a big life transition, such as moving house, having children, moving job, moving to a new city. All these are likely to lead to changes in travel behaviour, and cities could tap into this opportunity by actively encouraging the use of sustainable transport modes.

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IDEAS FOR LOCAL GOVERNMENTS



"The European Commission has released its landmark Sustainable and Smart Mobility Strategy, aiming at 90% decrease of emissions by 2050. In Bulgaria 22 cities are already implementing projects with European funding in this respect. I believe in the next 3-6 years the green technologies and smart solutions will become a priority in the development of Bulgarian municipalities. The challenges of sustainable development clearly show the direct mutual connection between public authorities, citizens and businesses -this interrelationship forms the basis of the sustainable structure of local communities with growth potential."

Silvia Georgieva,
Executive Director, National Association of
Municipalities in the Republic of Bulgaria

"Transportation is a big part of our lives. In Sofia we spend between 30 minutes up to 2 hours a day traveling from home to our workplace and to serve our personal needs. The sooner we start managing the transport more effectively, the better we will live. City leaders should keep their cities moving, working and growing by improving their public transport services and vehicles, and making mobility safer, modern and affordable for everyone."

Kristian Krustev,
Deputy Mayor on Transport,
Sofia Municipality

IDEAS FOR BUSINESSES



MANY BUSINESSES ARE ALREADY AWARE OF THE IMPORTANCE OF SUSTAINABLE MOBILITY. THE UNDERLYING DRIVERS OF SUSTAINABILITY ARE HIGHLY COMPLEX, HOWEVER, THERE IS A GENERAL CONSENSUS THAT THE CORPORATE SECTOR WILL PLAY A KEY ROLE IN SOLVING THE LONG-TERM GLOBAL ISSUES RELATED TO SUSTAINABILITY. SUSTAINABILITY, INCLUDING SUSTAINABLE URBAN MOBILITY, IS AN INTEGRAL PART OF THE VALUE CREATION. ALMOST EVERY BUSINESS WILL BE REQUIRED TO DEVELOP AND SHARE SUSTAINABILITY PRACTICES WITH THEIR SHAREHOLDERS AND ACKNOWLEDGE SUSTAINABILITY AS A CRITICAL KEY PERFORMANCE INDICATOR.

- 1 Provide support infrastructure for pedestrians and bicyclists on company premises.
- 2 Provide electric power stations for electric cars in the company parking lot for employees and guests.
- 3 Provide designated parking spaces for electric cars in the company parking lot.
- 4 Provide designated parking spaces with power outlets for electric mobility other than cars.
- 5 Create a company bike-share system (regular bikes).
- 6 Electric shuttle bus for public transport station pick up and drop off.
- 7 Electric car for employee carpooling and business trips.
- 8 Interest-free loans for bike or e-bike purchase.
- 9 Reimbursement of cycle mileage for commuting and business trips made by bicycle.
- 10 Enhance public bicycle infrastructure in the urban core or surroundings of the workplace.
- 11 Financially encourage the use of public e-bike-share system by discounted passes.
- 12 Financial contribution and benefits for cycling-related accessories and services.
- 13 Provide ample covered and secure bike parking facilities within the workplace.
- 14 Create a bicycle commuter/user group to advocate for cyclists.
- 15 Create a company scooter-share system (kick-scooter).
- 16 Free or low-interest loans for employees to buy scooters or e-scooter.
- 17 Encourage the use of public scooter-share system by providing free or discounted passes.
- 18 Enhance pedestrian infrastructure and accessibility in the surroundings of the workplace.
- 19 Promote walking, biking, and public transport by promoting the usage of journey planner applications.
- 20 Promote health benefits by encouraging participation in sports events.

IDEAS FOR BUSINESSES



- 21 Create and promote walking meetings.
- 22 Give pedometers and smart wristband to encourage active transportation.
- 23 Create a walking commuter group.
- 24 Start a competition over sustainable workplace mobility with rewards.
- 25 Provide rain weather, snow weather gear available at the workplace.
- 26 Guaranteed Ride Home program.
- 27 Improve the walking path to and from public transport stop or station.
- 28 Reduce the distance to a public transport stop.
- 29 Make it more convenient to wait at the public transport stop or station.
- 30 Financially encourage public transportation usage by providing subsidized passes.
- 31 Shuttle service to/from public transport station.
- 32 Introduce or increase flextime.
- 33 Introduce compressed workweeks.
- 34 Introduce staggered shifts.
- 35 Work remotely/Teleworking.
- 36 Coworking station for remote working.
- 37 Increase teleconferencing or videoconferencing.
- 38 Provide different services and amenities within the organization to reduce daily trips.
- 39 Financial incentives to carpooling.
- 40 Designated parking spaces for carpooling vehicles in the company's parking garage.
- 41 Introduce parking charging when/where relevant.
- 42 Financial incentives for using the carsharing system.
- 43 Subsidize parking of electric vehicles or carpooling vehicles in a private parking facility.
- 44 Create a company car program for employee mobility.
- 45 Create a company e-bike-share system (electric bikes) or e-scooter-share system (electric scooters).
- 46 Implement traffic-calming measures in the surroundings of the workplace.
- 47 Build or enhance public bicycle parking in the surroundings of the workplace.

IDEAS FOR BUSINESSES

48 Improving the cycling path to and from public transport stop or station.

49 Install a bike repair center or partner with a nearby bike services shop.

50 New employee induction kit with informative maps for public transportation and active transport.

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51 Renew fleet of corporate cars to electric ones.

52 Adopt fairness in subsidizing – if you provide free/subsidized parking to some employees, provide equal subsidy to user of other transport – public or active.

53 Create 'bike-to-work' day, 'transit-to-work' day.

54 Include sustainability in the mission and vision of the company, make this topic visible on the website, social profiles, company presentations, business cards and more.



"The business should strive to create products and solutions in line with the values of sustainable development, so that it could be a "force for good". In 2020 we at VMware set up 30 ambitious goals for the coming decade, based on three pillars – confidence, equality and sustainability. They are related to the products we develop, the individuals included in the process, and the planet we consider at every step. Now with our programme for shared trips with bicycles and electric cars we provide better opportunities to our employees, set an example for other companies and contribute to the cleaner environment in Sofia."

Diana Stefanova,
Vice-President
"Global strategy for development", VMware

"Businesses have a critical role for the sustainable development of the urban environment. On the one hand, it sets the course through its corporate culture and influences the behavior of its employees. On the other hand – by creating innovative services and solutions for its clients. That is why, we at A1 work intensively on the digitalization of businesses and clients, as well as, our internal processes. A good example is the digital ticket for the metro in Sofia which we offer."

Iliyana Zaharieva,
Director Corporate Communications,
A1 Bulgaria

IDEAS FOR UNIVERSITIES AND EDUCATIONAL INSTITUTIONS



UNIVERSITIES HAVE THE POTENTIAL TO SPUR A REGIONAL TRANSITION TOWARDS SUSTAINABLE MOBILITY. BROADLY SPEAKING, THIS MAY BE ACHIEVED VIA THREE ROUTES: TECHNOLOGICAL CHANGE, MODAL SHIFT, AND REDUCED TRAVEL DEMAND. THE UNIVERSITIES CAN ACHIEVE THAT VIA THE CHANNELS OF TEACHING, RESEARCH AND OUTREACH. BORDERS BETWEEN SOCIETY AND ACADEMIA ARE DISSOLVING. MANY HIGH-PROFILE UNIVERSITIES ACROSS THE WORLD ARE REACHING OUT PAST CAMPUS BOUNDARIES TO FORM AMBITIOUS PARTNERSHIPS WITH INDUSTRY, GOVERNMENT AND CIVIL SOCIETY ORGANISATIONS.

THE UNIVERSITY'S ROLE OF CO-CREATION MOBILITY AND SUSTAINABILITY SOLUTIONS WILL CONTINUE TO EVOLVE AND EVENTUALLY BECOME A KEY COMPONENT OF THE URBAN SHIFT TO SUSTAINABILITY ACROSS THE GLOBE.

- 1 Colleges and universities are essentially mini cities. They may have their own transportation systems, housing developments and perhaps even their own electricity and water systems. Therefore, they are perfect testing grounds for larger-scale initiatives.
- 2 Create a digital campus, and thus continue to provide a highly skilled, digitally-savvy workforce, world leading research, technological innovation and business support that makes universities so central to the city success. The uses for the data could potentially include informing decisions on traffic controls, air quality and flooding issues, among others.
- 3 Create a smart ecosystem with the city. A forward-thinking, technology-centered city can provide exciting projects and courses for universities. This improves the reputation of the university which will attract new students.
- 4 Unlock and analyze urban data for the good of citizens.
- 5 Develop and test new smart mobility technologies and turn ideas into prototypes.
- 6 Collaborates with local partners to improve public sector mobility service delivery.
- 7 Act as a “connective anchor” – universities as institutions that connect the local with the national with the international. International cooperation in research and innovation is a strategic priority for the universities. It enables: 1) access to the latest knowledge and the best talent worldwide; 2) business opportunities in new and emerging markets; and 3) science diplomacy to influence and enhance external policy. Multilateral research and innovation initiatives are the most effective way to tackle challenge facing our world – climate change - that are global by nature. Working together reduces the global burden, pools resources and achieves greater impact.
- 8 Cooperate with the city to organize an (international) student summer school on mobility.
- 9 Develop internship programmes at municipal companies or organisations working to meet urban mobility challenges.

IDEAS FOR UNIVERSITIES AND EDUCATIONAL INSTITUTIONS



- 10** Being together interdisciplinary teams across university programmes to tackle mobility issues, such as travel planning, transport-related behaviour change, intelligent transport systems, mobile ticketing, biometrics, automatic number plate recognition, big data analysis and spatial mapping.
- 11** Develop incentives for the promotion of inter and multi-disciplinary collaboration.
- 12** Respond to new knowledge needs - "climate change competency framework" as part of the European Green Deal. This will help gain societal consensus regarding difficult decisions with impact on everyone's way of life, and sustain societal cohesion. Education is slow to change, so be a pioneer and embed new modes of teaching across the curriculum.
- 13** Target suitable niche markets in sustainable mobility to maximize the impact of your research.
- 14** Literacy remains a challenge. And literacy now must be a concept that extends beyond reading and numbers. It must include civic, social and science literacy, and in this context, this includes environmental literacy.
- 15** Identify, promote and celebrate individual faculty members - highly engaged "frontrunners" enacting mobility change.
- 16** Create educational alliances with local schools.
- 17** Hold a regular annual event/fair – or take part in a traditional relevant city event like Sofia Science Fair – showcasing the newest research and development in the field of sustainable urban mobility.
- 18** Constitute a recognition label "Leadership in sustainability design" to award to outstanding researchers and students.
- 19** Attract sponsors and establish a scholarship for sustainability studies for undergraduate, graduate and PhD students, thus providing an incentive for place-based action research.
- 20** Organize hackathons and competitions to foster creative new sustainability ideas.
- 21** Policy-makers have much more links to industry than to science. Contribute to bridging the science-policy gap between academic research and policy-makers and practitioners by using advocacy and participatory approaches, message framing, creating own mobility policies.
- 22** Have a rigorous research agenda that includes areas like the role of fashion in sustainability, the economics of low-carbon mobility scenarios, public health and well-being outcomes, issues of equality and ethics.
- 23** Develop monitoring and evaluation methodologies and assessment tools to measure local transition to sustainable urban mobility.
- 24** Involve members of the general public as active participants in research through citizen science, thus increasing both scientific knowledge production and setting goals and mobilizing resources for addressing sustainability problems.
- 25** Increase the quality of information that reaches the public and reduce disinformation and "transport taboos".

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IDEAS FOR UNIVERSITIES AND EDUCATIONAL INSTITUTIONS



"Sustainable urban mobility comprises various aspects of the economic and social city development. Mobility policies have long term effects and their research cannot be confined to the immediate area of application – transport or infrastructure. Universities not only conduct research, they focus knowledge in diverse domains. They could make a comprehensive analysis of different policy implications – ecological, technological, economic and social. For local governments the cooperation with universities offers not only an opportunity to use the expert potential but also to reach out to one of the most active parts of society – the students."

Associated professor Stanimir Kabaivanov, PhD,
Dean of Faculty of Economic and Social Sciences,
Plovdiv University

"Universities can contribute to the achievement of sustainable urban mobility not only with scientific research and innovations but also with suitable teaching formats both for students and for the broader public. Last but not least, universities can provide positive examples by encouraging sustainable practices among their students and faculty."

Associated professor Atanas Georgiev, PhD,
Dean of Faculty of Economics,
Sofia University

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