



# Future Transport Research Agenda

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# Change of the mobility system



- Driven by policy, technological innovation, social trends etc.
  - Fundamental change: future transport system  $\neq$  recent system
- ⇒ Goal: identify main drivers, estimate trends within and related to the system, understand characteristics of change, develop a picture of tomorrow
- ⇒ Derive research needs – considering political goals and requirements for system continuation



# Sketch of the Future Transport System



## IMPACT FACTORS

### Megatrends

- Globalisation
- Urbanisation
- Demographic ageing
- Scarcity of resources

### Growth of

- Economy, complexity
- Cities, population
- Disparities
- Consumption, emissions

### Economy

- Additive manufacturing
- Digital knowledge economy
- Industry 4.0

### Society

- Sharing vs. owning?
- Working world & labour market?

### EU Policies

- GhG/CO2 reduction
- Circular economy
- Inclusion

## TRANSPORT SYSTEM

### Technologies

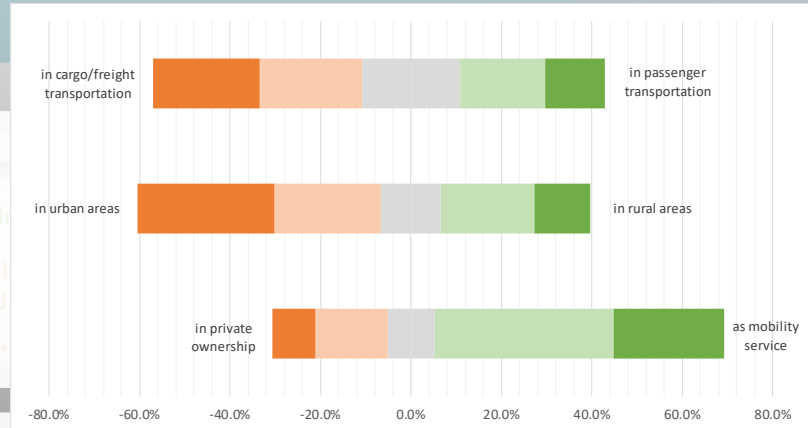
### Services

### Infrastructure

### Operations



## Sociotechnological Trends & Transformation



## TRANSFORMATION

### Mobility nature and paradigms

Changing role of mobility  
Travel – work - leisure  
Appraisal of time, distance  
Digital = mobility divide

Autonomous Vehicles  
+ efficiency, sustainability  
- private car ownership  
+/- decentralisation

⇔ AV as problem solver  
⇔ rebound effects?

### Game changer

+ drones in freight  
+/- drones in niches  
+/- innovative, large infrastructure as isolated solutions

### Transport market

+ restructuring  
+ new player

⇔ IT, data, information > infrastructure  
⇔ change of systemic borders

Business as usual

Vision development goals



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European Union

# Fundamental changes leading to system transformation



- Technological innovation and potential game changers
- Vehicles, materials, operations, services under change
- New players entering the market
- Restructuring of transport system and market



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# System transformation => Transformation of research



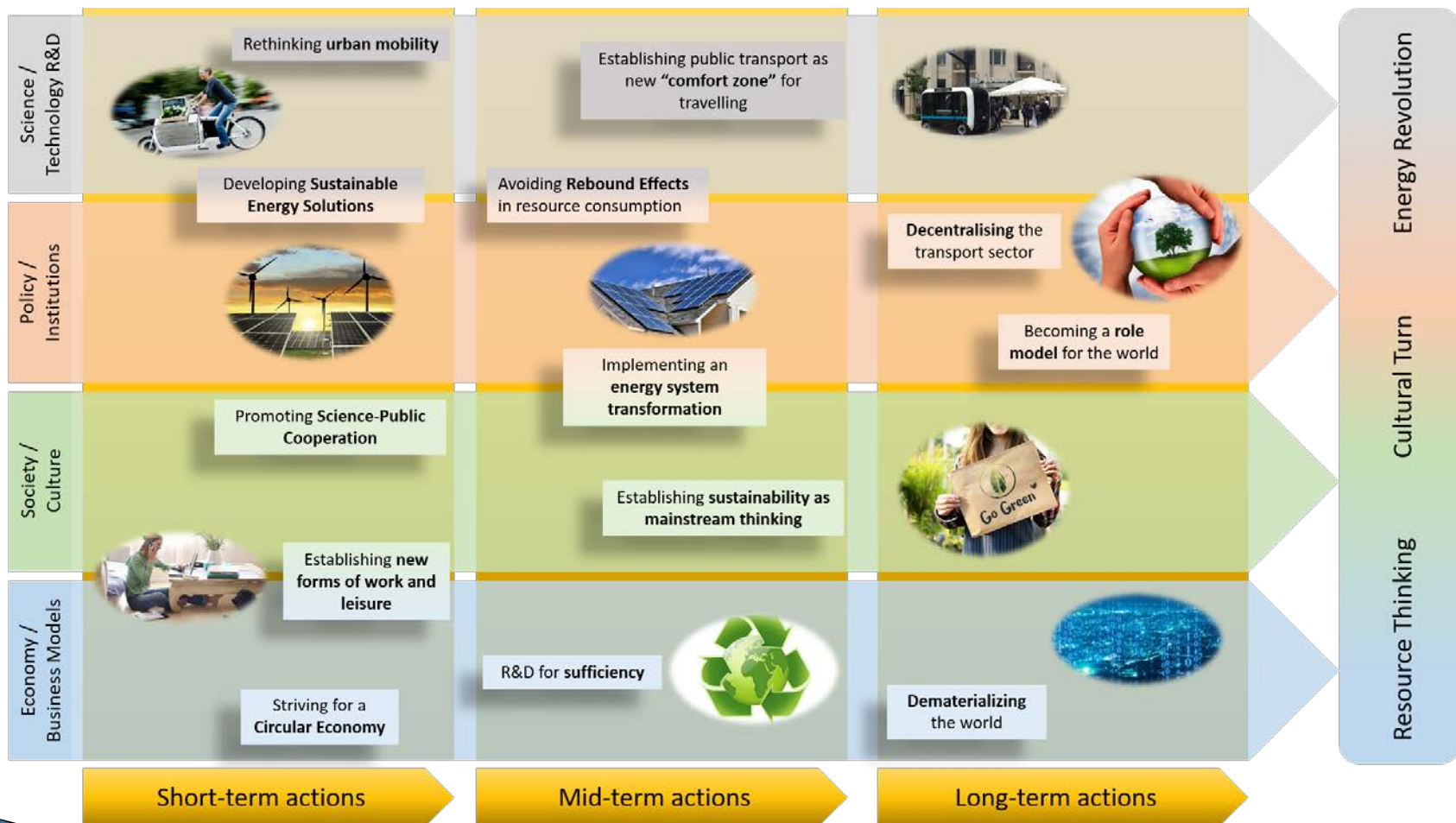
- How to support socio-technical change?
- Options of technology convergence?
- Success factors and effects of competition?
- Coordination  $\Leftrightarrow$  self-organization?

=> To be considered

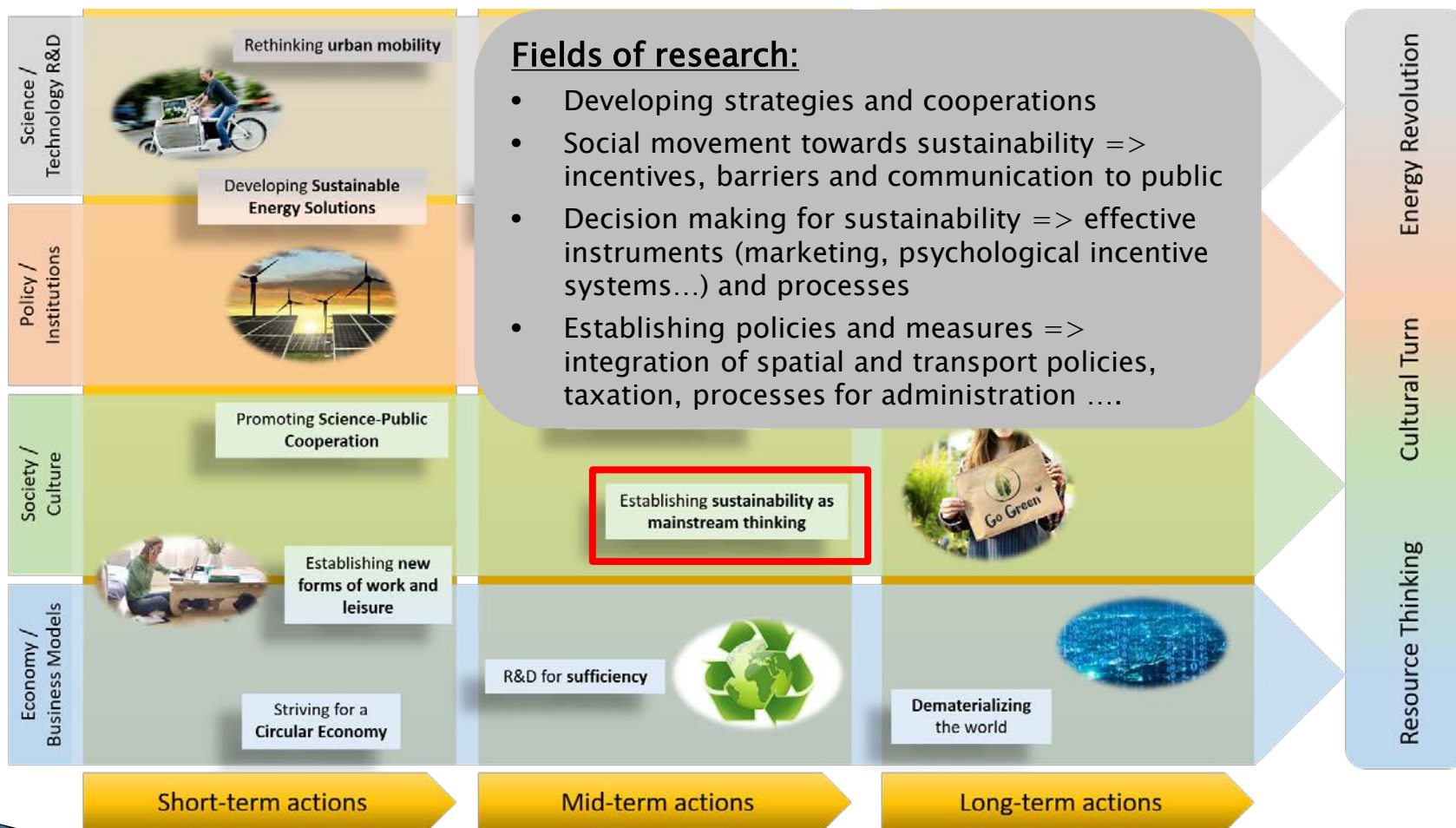




# Blind Spots => Future priority research needs



# Towards a new research agenda for mobility





# Conclusion

- Developing broader perspectives: re-organizing mobility beyond innovation and technology
- Bottom-up problem driven research, free innovation space
- Fundamental transformation of the prevailing system
  - Re-organisation of the mobility system
  - Energy Revolution
  - Resources Thinking
  - Cultural Turn => Sufficiency





# Project Partners



Zurich University  
of Applied Sciences



UNIVERSITY OF BELGRADE  
THE FACULTY OF TRANSPORT AND  
TRAFFIC ENGINEERING



**CERTH**  
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