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Policy measures for the use of e-bikes and their environmental potential

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IST-Side Event: Transition towards light electric mobility: Past dynamics and current challenges

9 September 2016

Methodology I

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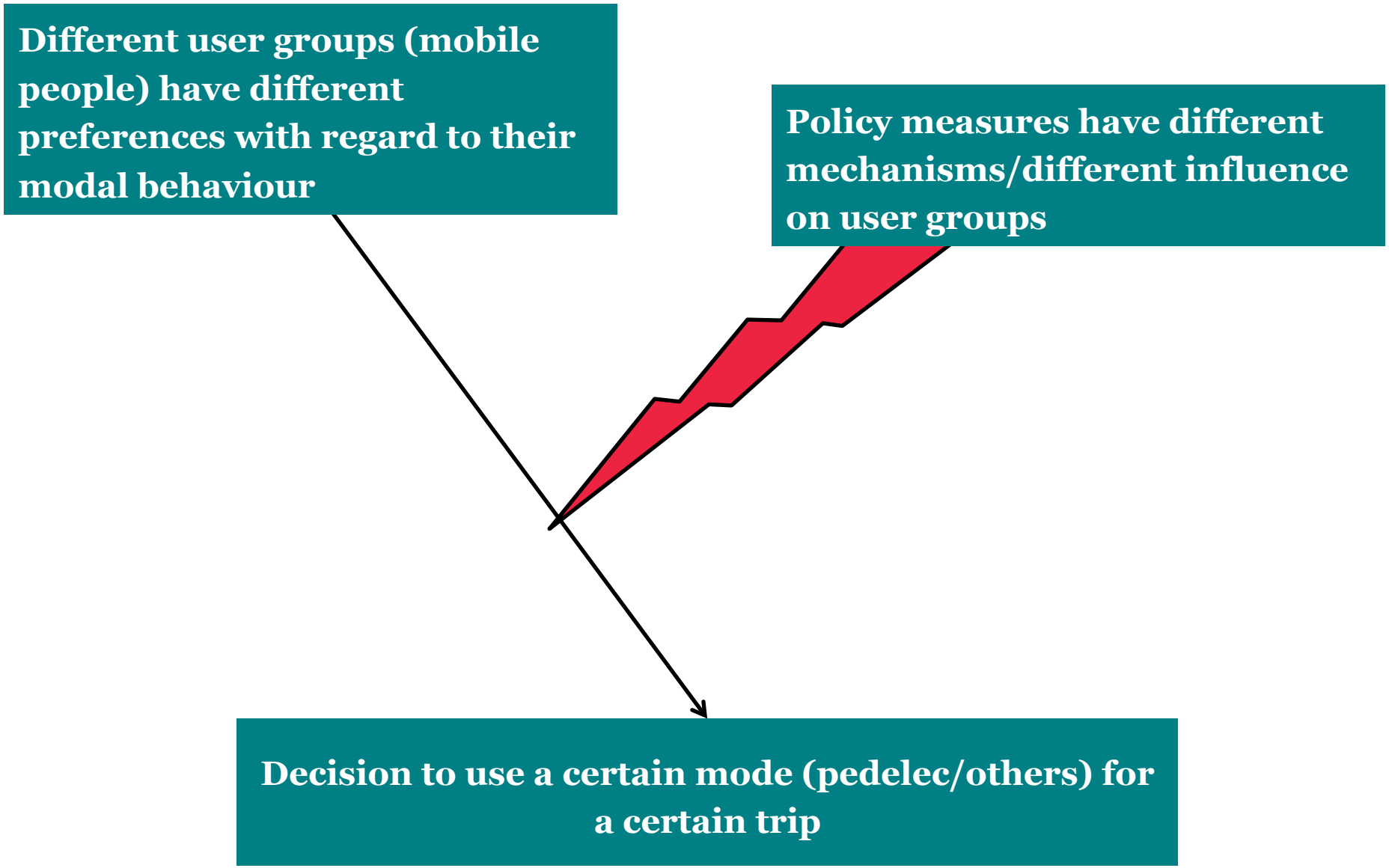
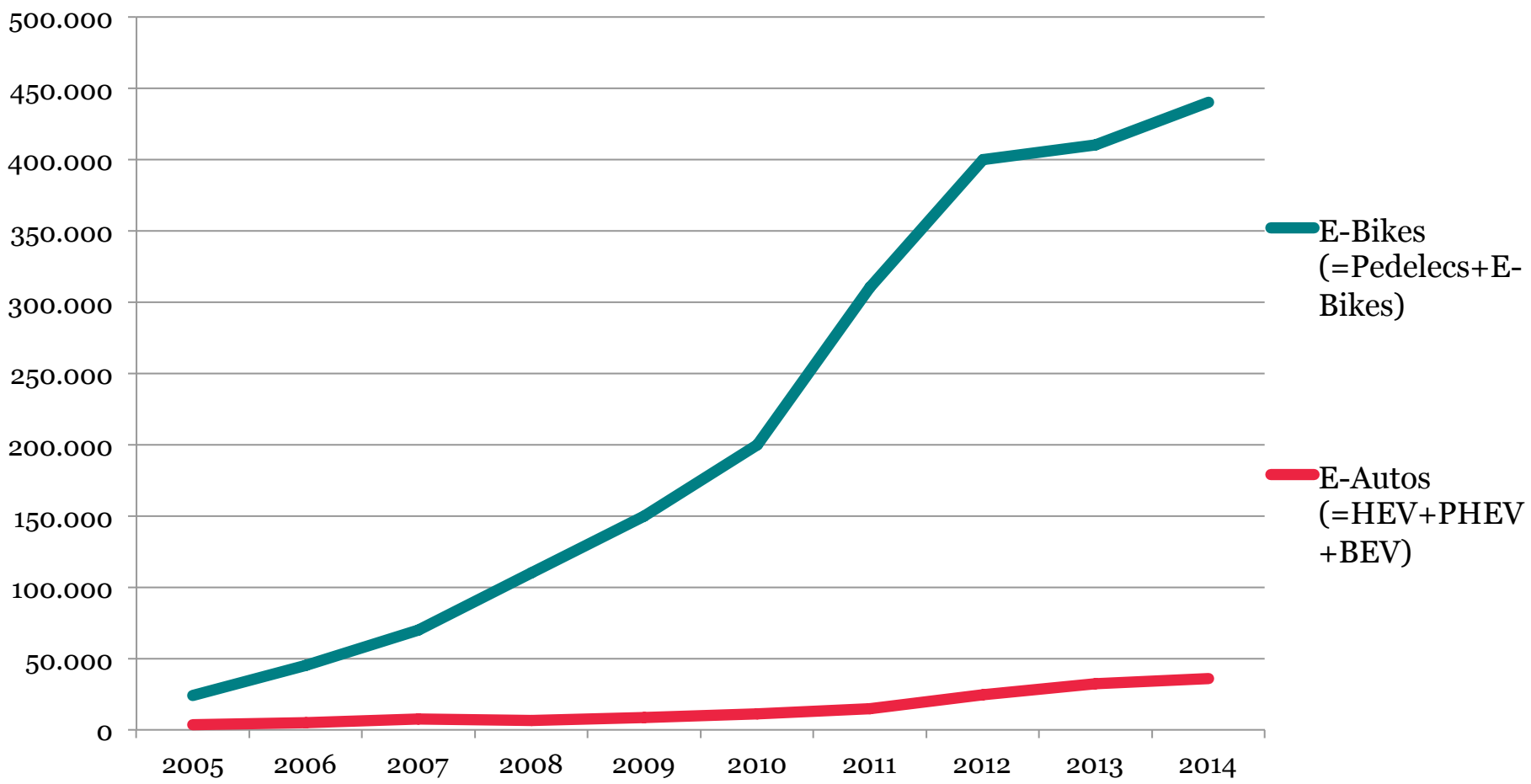


Market development of electric vehicles in Germany



Source: KBA/ZIV

Strategies for sustainable mobility
...and the role of pedelec promotion

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Avoid

Examples
- compact cities
- mixed land-use

Shift

Examples
- Pedelec promotion measures

Improve

Examples
- emission standards
- fuel tax

vs.

Müller et al. 1992

?

Attitude-based mobility types
...and their pedelec-affinity

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Mobility type	Motifs for modal behaviour	Pedelec-affinities
Status oriented motorists	Safety, comfort	leisure time, little usage
Autonomic car enthusiasts	Travel time	Commuting, leisure, long distances
PT fans	Travel time	only for specific situations
Bicycle fans	Travel time, comfort	supplement for traditional bike, e.g. for long distances
Self-determined, multimodal persons	Travel time, comfort, cost, Safety	equal usage for different purposes
Individual transport prefering persons	Travel time, cost	time and money are crucial
Car-dependent persons	Travel time, cost, comfort, safety	to reduce cost as compared to car, but many restrictions

Pedelec-promoting measures
...and their mode of action

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Policy measures	Mechanisms
Infrastructure (cycle ways, junctions)	Travel time, safety
Speed limit at 30 km/h (spatial comprehensive)	Travel time, safety
Parking	Travel time, comfort
Information, campaigns, Promotion, education	(Public) image
Purchase incentives	Cost
Increase of costs of motorised transport	Cost

Scenarios for the city Wuppertal
... promoting interventions assumed

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BAU	rewarding scheme			
Pedelec promotion	rewarding scheme	main routes snow clearance campaigning	tax privileges rewarding abolition motorbikes marketing speed limit 30 km/h mobility education	parking
External factors		more shopping and leisure trips of the elderly peak oil climate change multimodality		

2012 2020 2030 2050

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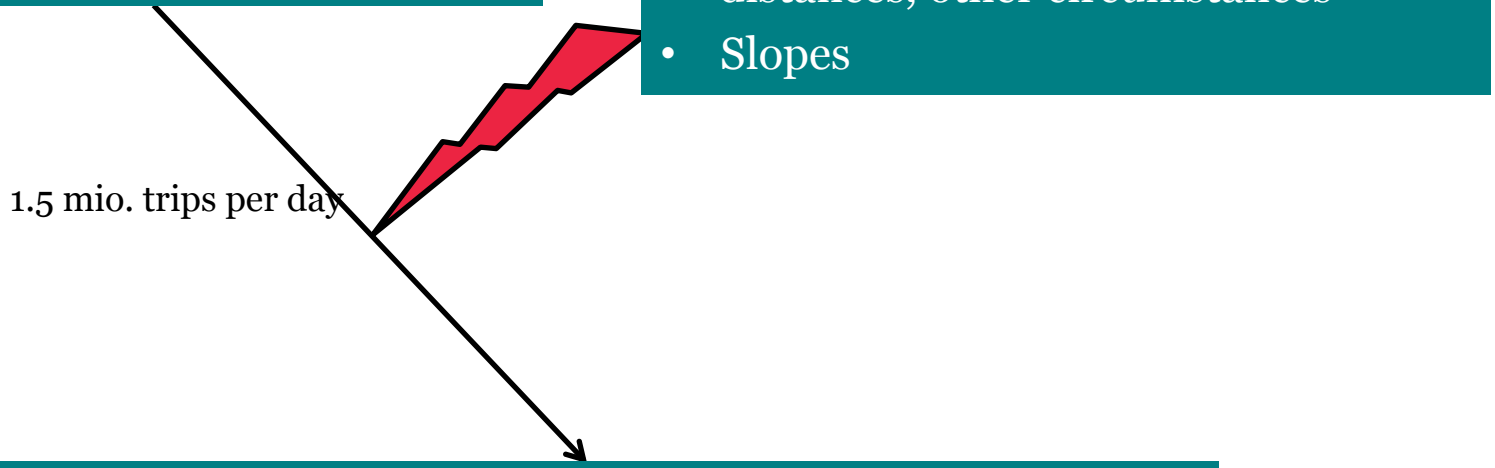
Mobility type

- Status oriented motorists
- Autonomous car fans
- Public transport fans
- Bicycle fans
- Self-determined, multimodal persons
- Individual transport prefering persons
- Car-dependent persons

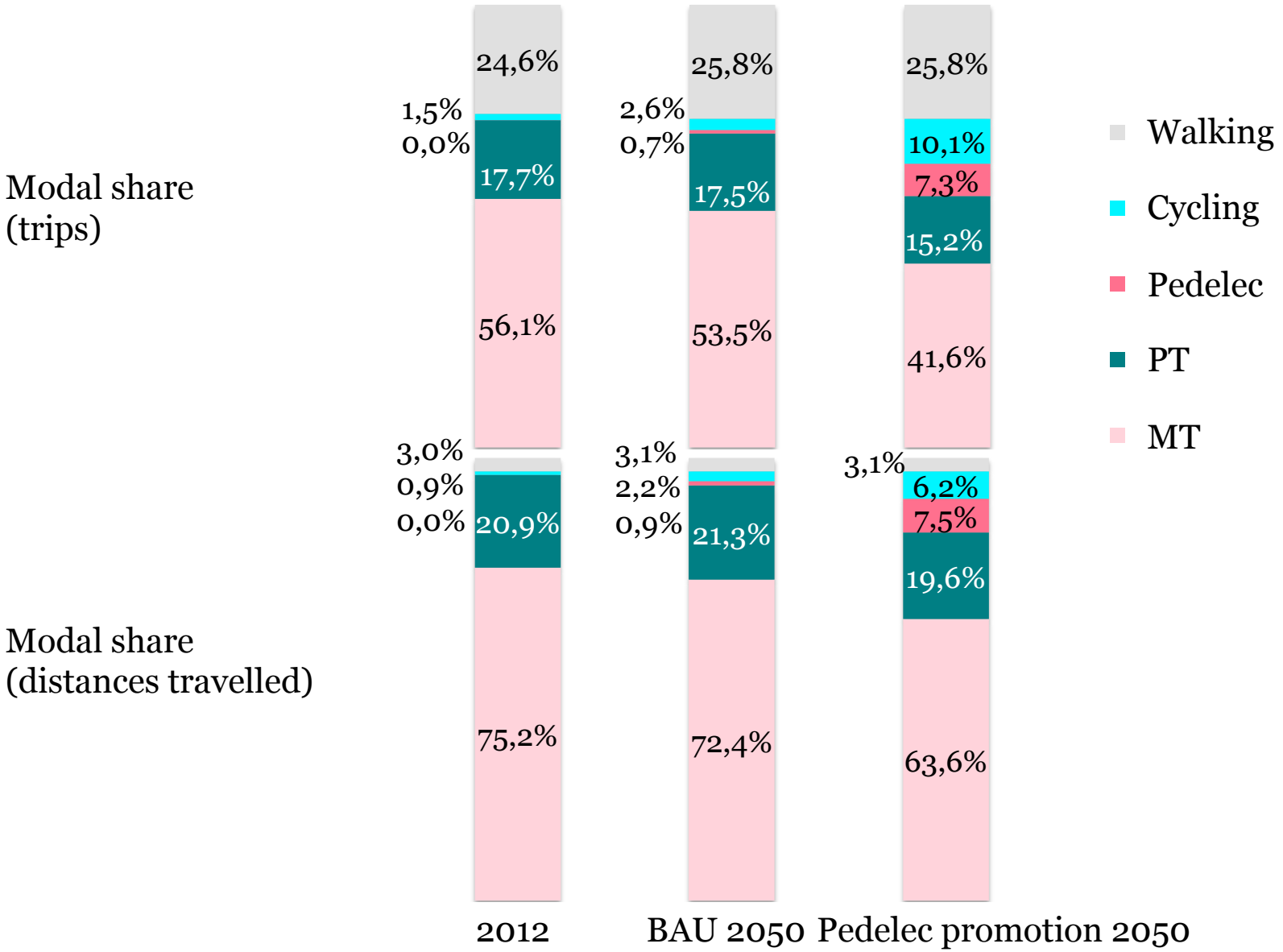
Travel demand model delivers information about

- Trip distances
- Trip purposes (working, education, procurement, shopping, leisure, accompaniment)
- Parking managment (prices)
- Parking situation (numbers, distances, other circumstances
- Slopes



Decision to use a certain mode (pedelec/others) for a certain trip (travel time, travel cost, comfort, safety)

Scenario results: modal share



Scenario results: comparison of measures' effects (carbon dioxide emissions)

2 decreasing population

3 more shopping and leisure trips of the elderly

4 Peak Oil

5 climate change

6 multimodality

7 main routes network

8 snow clearance

9 campaigning

10 tax privileges

11 rewarding public bodies

12 rewarding local transport operator

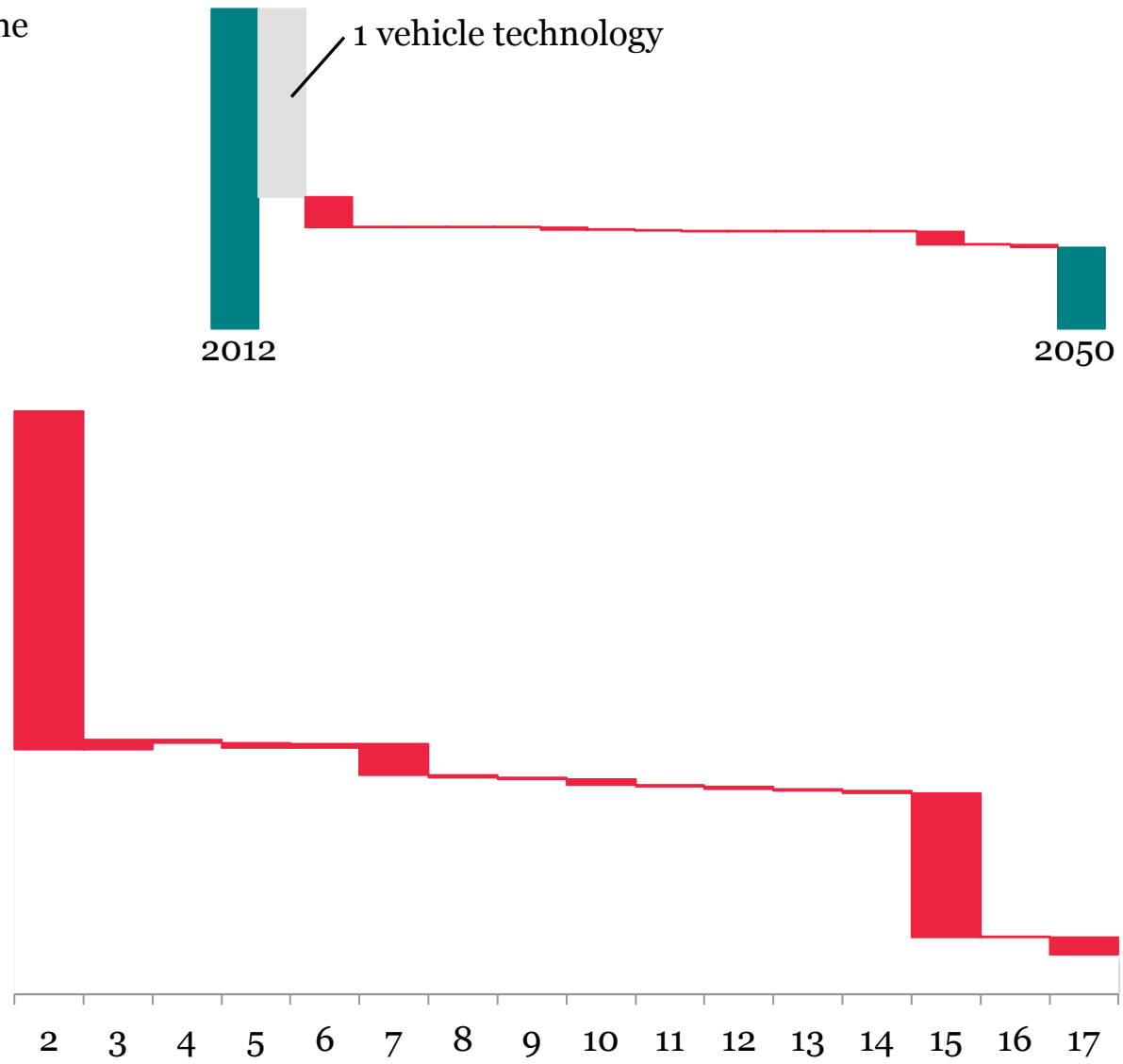
13 abolition motorbikes

14 marketing

15 speed limit 30 km/h

16 mobility education for pupils

17 parking



Conclusions

- Promotion of pedelecs is worth the efforts, but it needs ambition (not a no-brainer)
- most important policy measures are speed limits (spatially comprehensive) and parking
- If policy is ambitious, than purchase incentives can play a role
- traditional cycling benefits significantly, public transport remains stable
- The potential for Wuppertal is high, but policies are important everywhere
- Local decision makers are main actors, the transition towards sustainable/low-carbon mobility can be realised independent from car manufacturer‘s activities

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Making Utopia possible

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