
WHAT IS THE USER PAYS PRINCIPLE APPROPRIATE FOR?

Trorence, 20 May 2019

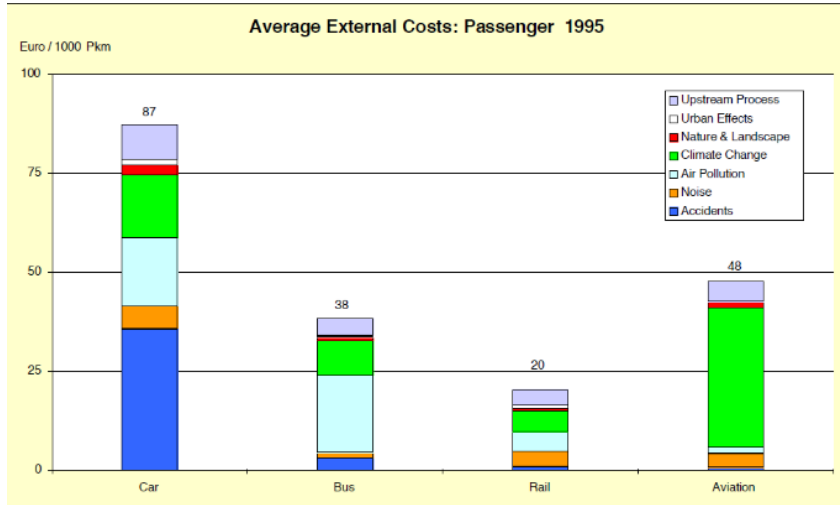
Issues

1. Reliability of cost estimates
2. Relevance of external costs
3. Comprehensiveness of accounting
4. Appropriateness of internalization

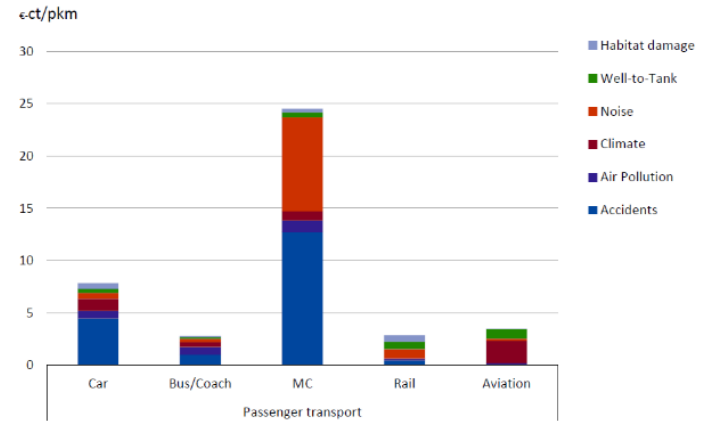
Reliability:

Some current issues on the external costs of transport

The history of external cost estimates: 1995 UIC study to 2018 EC results

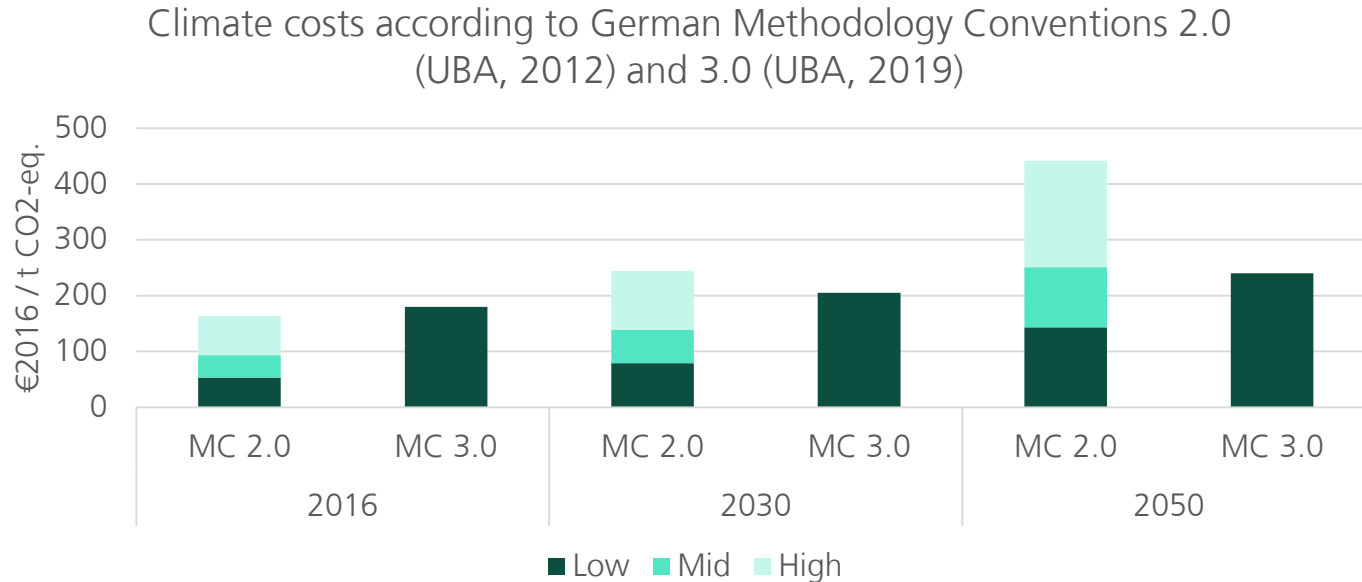


Average external costs per mode at EU28 level - Passenger



Mode	UIC 1995			CE Delft (2018)		
	€/1000 pkm	€Ct./pkm 2015	Rel. PCar	€Ct./pkm 2015	Rel. PCar	Rel. to UIC1995
Car	87	12,1	100%	8	100%	66%
Bus	38	5,3	44%	2,5	31%	47%
Rail	20	2,8	23%	2,7	34%	97%
Air	48	6,7	55%	3	38%	45%

Difference in climate prices: results from the German Methodology Convention 2.0 and 3.0



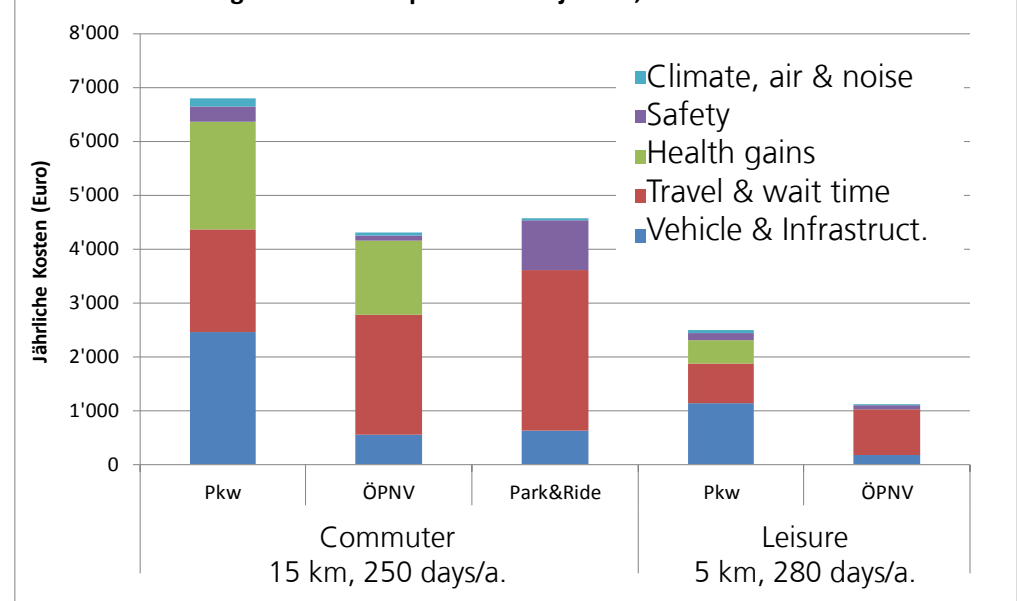
Relevance:

**Relation of external costs to user and
infrastructure costs**

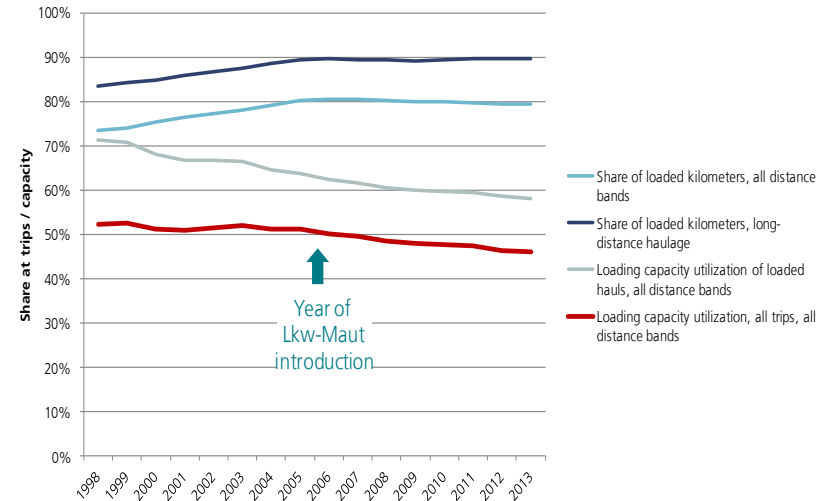
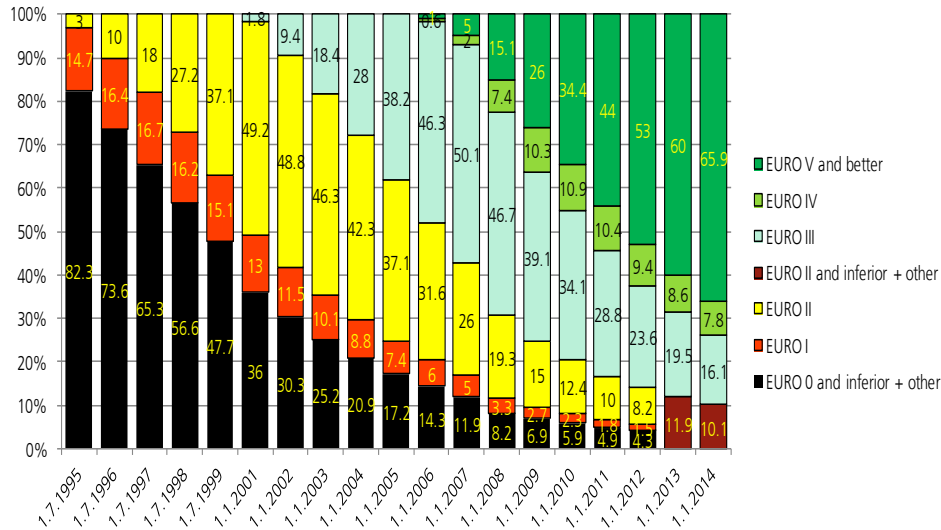
The share of external costs at total decision-relevant costs: passenger mobility

- Fully external costs (climate, air, noise) < 3% relevant costs
- Safety and health concerns much more relevant
- Steering of even nudging of behavior with cost-driven prices in passenger mobility most likely limited

Comparison mid-size car (Euro-III, gasoline), PT and bike&ride.



The regulation of pricing and regulation on road freight transport – no measurable effect



Comprehensiveness:

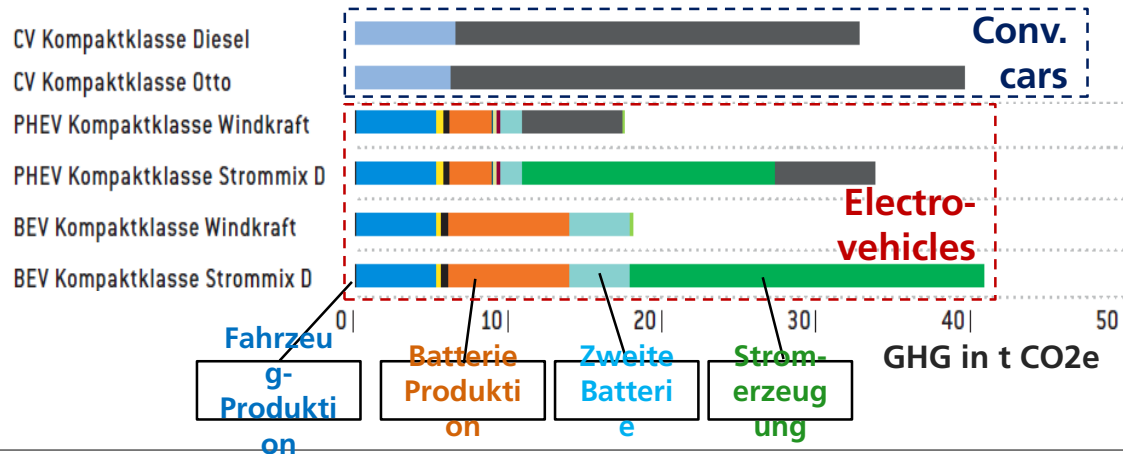
Do we consider all relevant impacts of mode and travel choices in external costs?

Life cycle considerations of electric vehicles – social impacts of battery production

- Comprehensive accounting and monetarization of social compacts missing
- Anecdotal knowledge only
- Relevance to classical externalities unclear



Source: Francesco Mocellin, CC BY-SA 3.0



- Social standards
- Water use (Lithium Triangle)
- Pollution (China)
- Mining accidents (Congo)

Issues for discussion:

Conclusions based on the issues raised

Reliability: rather stable / robust cost estimates.

Limited relevance for more sustainable behavior

Missing cost components: need for monetary social accounting

Appropriate application of internalization

- Financing: Infrastructure charges
- Upfront investments: new systems
- Demand management: congestion tolls
- General price signals

Less appropriate application

- Environmental behavior change
- Meeting sustainability targets
- Efficient funding → transaction costs

Thank you



Dr. Claus Doll
Coordinator Business Area Mobility
Fraunhofer Institute für Systems and Innovation Research ung ISI
Breslauer Str. 48, D-76139 Karlsruhe
T: +49 721 6809-354, F: +49 721 6809-135
E: claus.doll@isi.fraunhofer.de
www.isi.fraunhofer.de