



Niche innovations and socio-technical storylines: personal land-based mobility in the Netherlands (D2.5)

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Context

Niche momentum and potential

Scenario overview

Transitions challenges

Storylines – some issues

Conclusions

Method - overview

Socio-technical:

D2.1: niches

D2.2: regimes

D2.3: breakthrough potentials

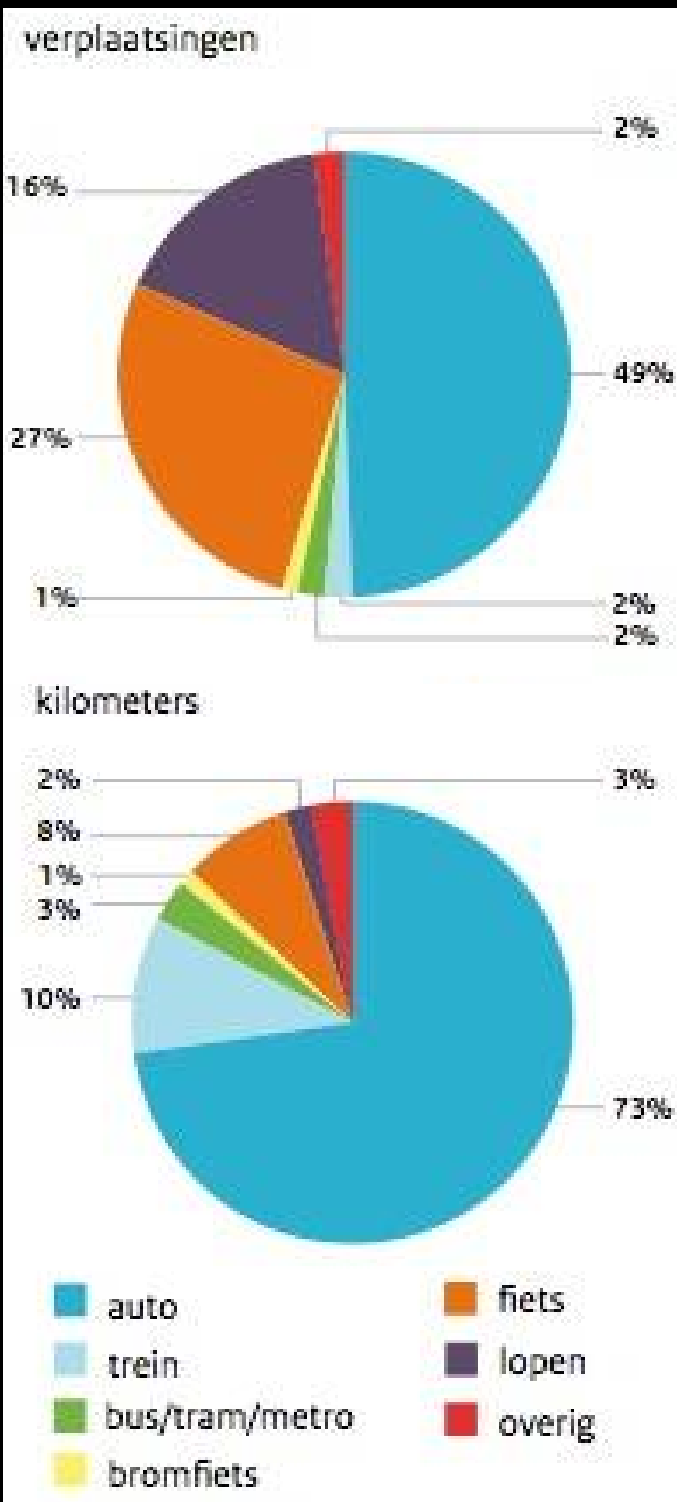
Modelling:

D1.1: preliminary scenarios

D1.3: Improved sets of scenarios



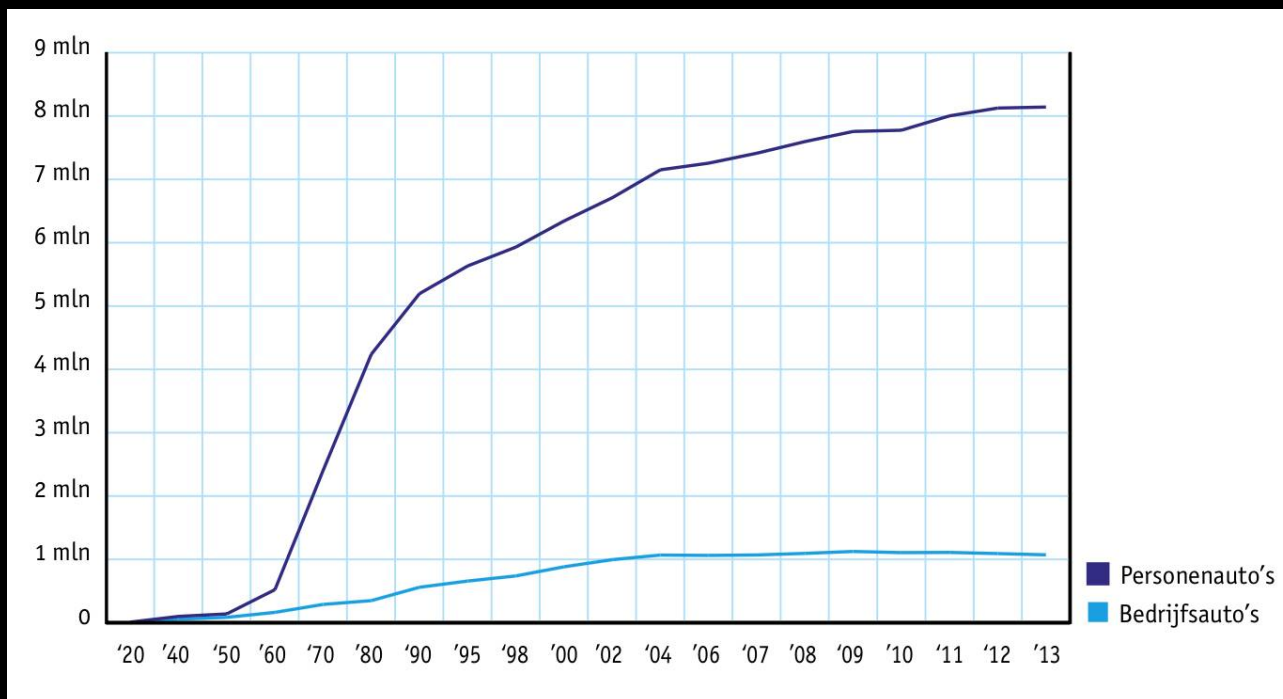
D2.5: Socio-technical storylines



Deeply entrenched **automobility** (w/ some 'greening')

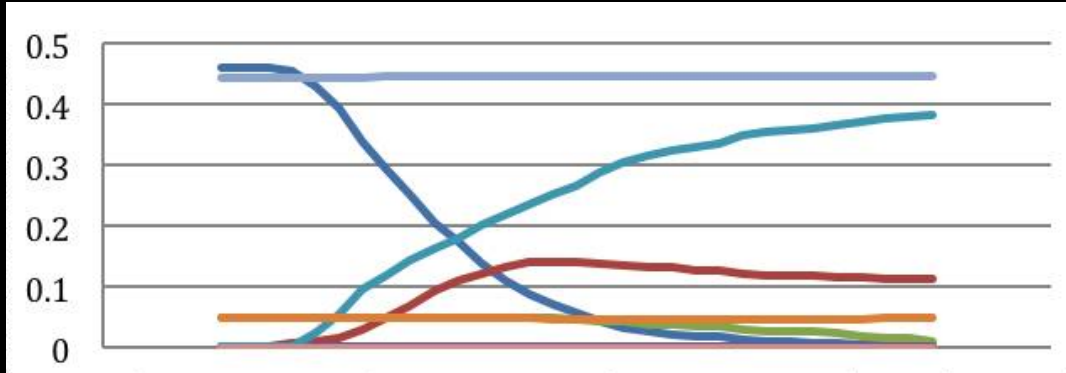
Co-existence of regimes and transportation modes:

- integrated & innovative **public transport** (ticketing, multimodality...)
- substantial and stable embedding of **cycling** (infrastructure, lifestyle)



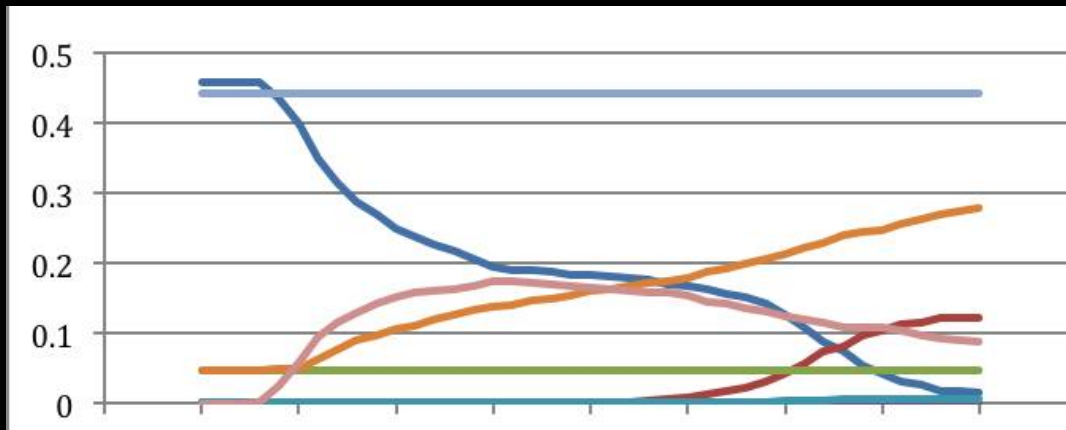
Niche momentum & potential

Niche	Momentum	Drivers of momentum (techno-economic, socio-cultural, policy)	Pathway
Hybrid electric vehicles (HEVs)	High (beyond niche)	Important market share, stable design features Stepping stone towards electric mobility Tax incentives	A
Carsharing	High	Rapid growth (urban), diversification, multiple innovations Positive cultural meanings (environment, congestion) Central to strategic mobility visions	B w/ A
Battery electric vehicles (BEVs)	Moderate	Market deployment, high innovation /no dominant design 'range anxiety' slowly overcome Strong policy support for infrastructure and rollout	A
Biofuels	Moderate	Hype/disappointment, 1G→2G, Focus on blending (≠ flexifuel) Controversies w/ competition for land/agriculture blending policy/targets (>5%)	A
Compact cities	Moderate (past)	Momentum and instalment in 1960s-90s, then abandoned Strong national political push, inconclusive results	A/B
Hydrogen fuel cell vehicles	Very low	Experimental stage, high costs, considered option from 2030 Doubts because multiple hype cycles	A



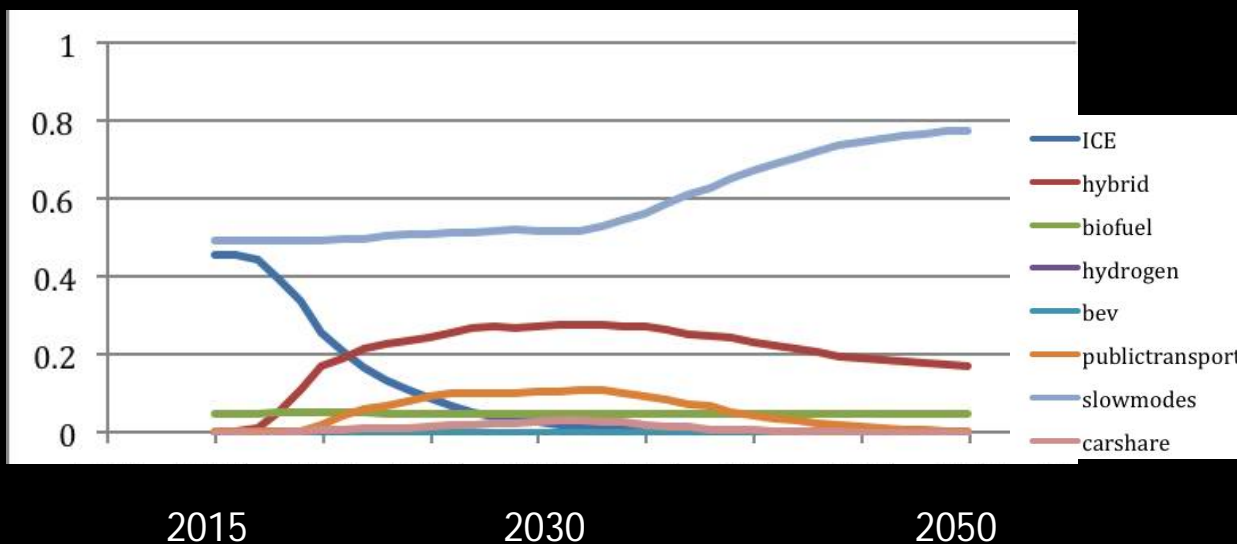
A: BEV

car-based mobility prevails
(BEV+HEV, then BEV)



B1: Public transport

away from individual
mobility (carshare+public,
then public)



B2: Slow modes

slow modes prevail
(HEV+public, then slower
and shorter)

All: rapid phase-out of ICE

Scenario requirements

Transitions challenges

A: Electric mobility

ICE Sharp reduction from 2020, phase out by 2040

HEV Key role (to 2030)

BEV from 2020, mass rollout from 2025

Inertia, stock replacement, industry resistance, policy, cultural preferences

Costs, market size, tax exemptions

Readiness, range anxiety, then scaling down niche support

B1: Public transport

ICE halving 2015-30, plateau 2030-40, phase out by 2050

PT Substantial steady increase throughout

CS 2015-20 to make up for ICE decline

Idem

Infrastructure/cost, logistics, multi-modality, user-innovation, cultural preferences

Behavioural shift

B2: Slow modes

ICE **Very rapid** phase out by 2035

HEV Rapid initial roll out (2015-20)

SM Strong increase from 2030

Idem – unprecedented rate?

Costs, market size, tax exemptions

Infrastructure, shortening distances, cultural/economic paradigm shift

Storylines – some issues

‘Forcing’ societal and political dimensions:

- deliberate destabilisation (struggle with car industry, ‘special concessions’)
- overcome cultural reticence (BEVs pathway A)
- civil society (B2 role of hyper-localist movement, B1-2 experimentation)
- persistence w/ low-carbon agenda (not too many distractions)
- large infrastructure investments (A:BEV charging, B1: rail, B2: cycling)

Opportunities: alignment of issues (e.g. democratising EV w/LWEVs)

Multiple targeted instruments (including ‘transitional’ provisions)

Imaginative innovation trajectories to deal with emergent issues:

- LWEVs as affordable & versatile (vs. high-end BEV)
- stepping stones, e.g. carsharing to support electrification or phase out

Conclusions

NL: Interesting context (subaltern and 'test-bed')

Challenging pathways (even in NL), 'forcing' needed

Deliberate strategies, interventions, and consistent low-carbon agenda

Supporting variety (B1, B2) vs. technology priorities (A)

Multiple sources of tension and conflict btw. actors

Twists, turns, devptal patterns (e.g. stepping stones, recombinant innovation)

Branching points where significant shifts occur