

Internalisation of external cost at the Paris-Amsterdam corridor

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▶ Outline

- Context and overview of the study
- External costs and infrastructure costs
- Baseline scenario and internalisation scenarios
- Impacts of the scenarios on:
 - Transport demand and modal split
 - Revenues from taxes and charges
 - CO₂ and congestion (time losses)
 - External costs
- Illustrative example
- Conclusions
- Next steps

▶ Context

- TEN-T project canal Seine-Scheldt
- Eurovignette Directive:
 - Commission proposal on amendment (July 2008)
 - Recent amendment enables internalisation of some external cost: air pollution and noise
- New White Paper and Strategy for decarbonising transport: internalisation and specific targets for modal shift
- High priority for decarbonising transport: 60% target for 2050
- Objectives for reducing air pollution, noise and accidents

▶ Study overview: aim and scope

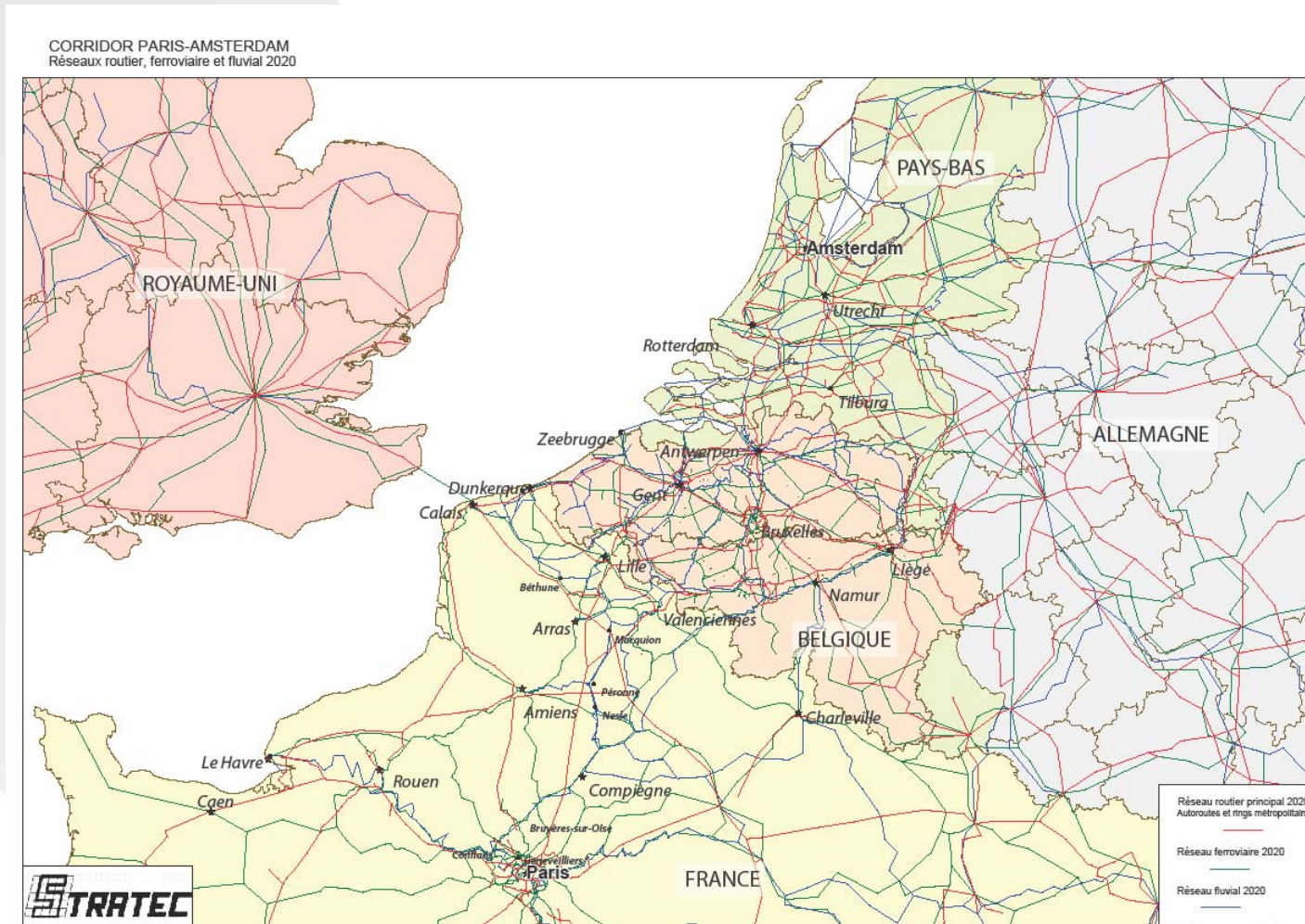
Aim:

- Assess the impacts of transport pricing schemes
- Based on the external and infrastructure costs
- Strategic EU freight corridor: Paris - Amsterdam (and related regions)

Scope:

- Road, rail and inland waterway transport
- Long distance traffic
- France, Belgium the Netherlands

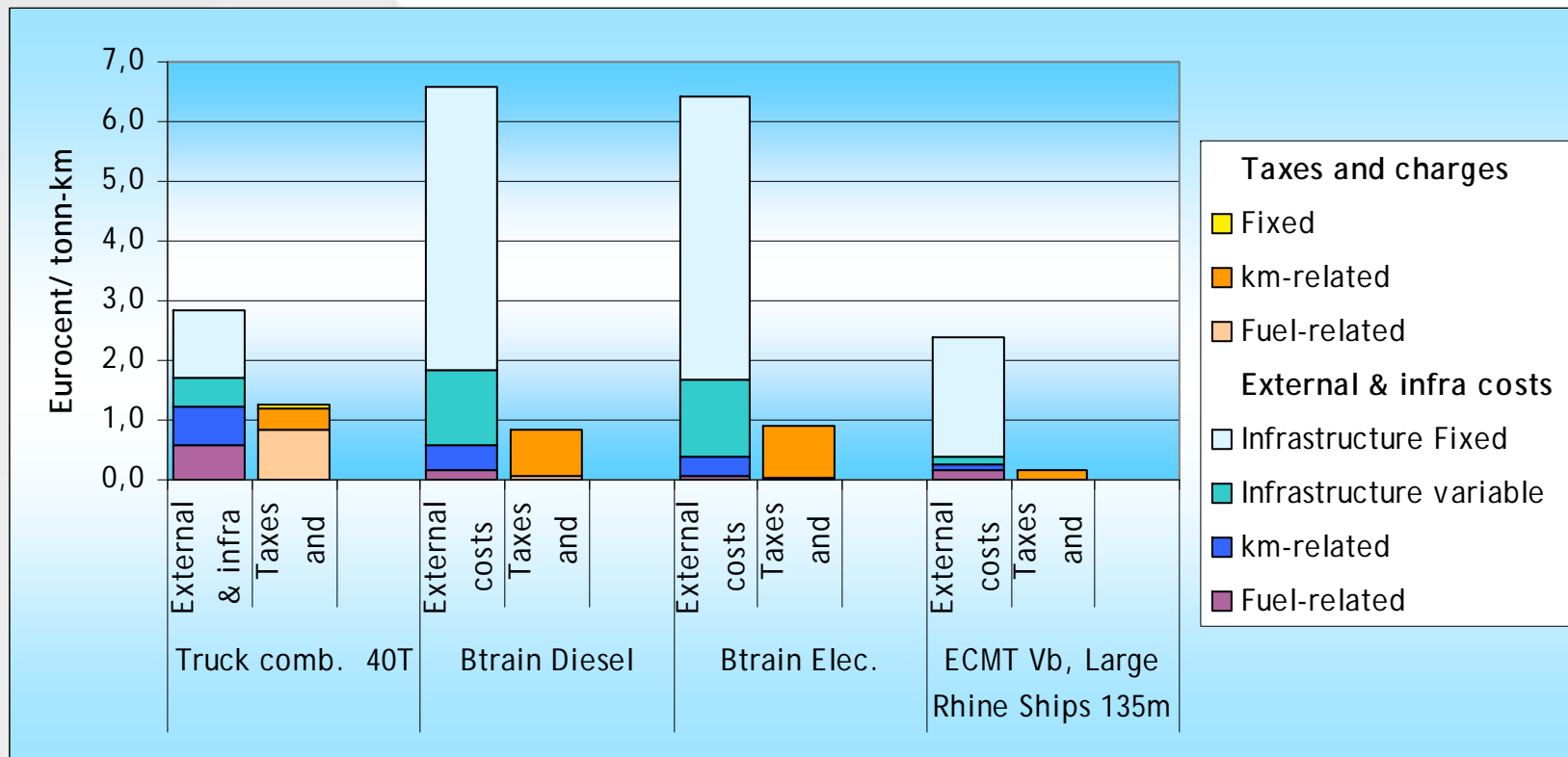
► Corridor Paris - Amsterdam



▶ Methodology external & infrastructure costs

- Infrastructure cost data:
 - For all three modes
 - For all three countries made consistent
 - Validated by scientific committee
- External costs:
 - Climate, air pollution, noise, accidents, congestion and 'upstream'
 - Corridor values in line with IMPACT handbook (2008): marginal cost
 - Data on fuel consumption, emissions and load factors made consistent with the traffic model (improvements in 2020 and 2050)
- Existing taxes and charges:
 - On vehicle registration & owning, electricity, fuel taxes, infrastructure use (tolls), subsidies

▶ External & infrastructure costs in 2020



Note: - km-related external cost = air pollution, noise accidents, congestion
 - fuel-related external cost = climate + upstream

▶ Scenario overview: BAU Business as usual and MSCP marginal social cost pricing

BAU- Reference scenario:

- Current taxes and charges
- Needed to see the full impacts of internalisation policies

Scenario 1 -Pragmatic MSCP:

- Marginal infrastructure & external cost for all modes
- For road fuel taxes not lowered to level of CO₂ cost but left unchanged.
- Congestion charges based on model calculations
- Politically not very realistic and not in line with recommendations of Eurovignette directive but sound scientific basis

▶ Scenario overview: Eurovignette

Scenario 2 - Eurovignette proposal:

- Based on 2008 Commission proposal and in line with the 2011 amendment
- Focus on road: charging for total infra cost plus air pollution and noise
- Congestion charges based on IMPACT values
- No changes for IWT and rail
- Very realistic proposal for short term

Scenario 3 - Eurovignette proposal - extended:

- Same as scenario 2 with additional carbon tax on fuel for all modes
- External costs (air pollution and noise) charges for rail and IWT (like for road)
- Congestion charges based on model calculations
- More collaborative and realistic for medium term

▶ Scenario overview: Target oriented

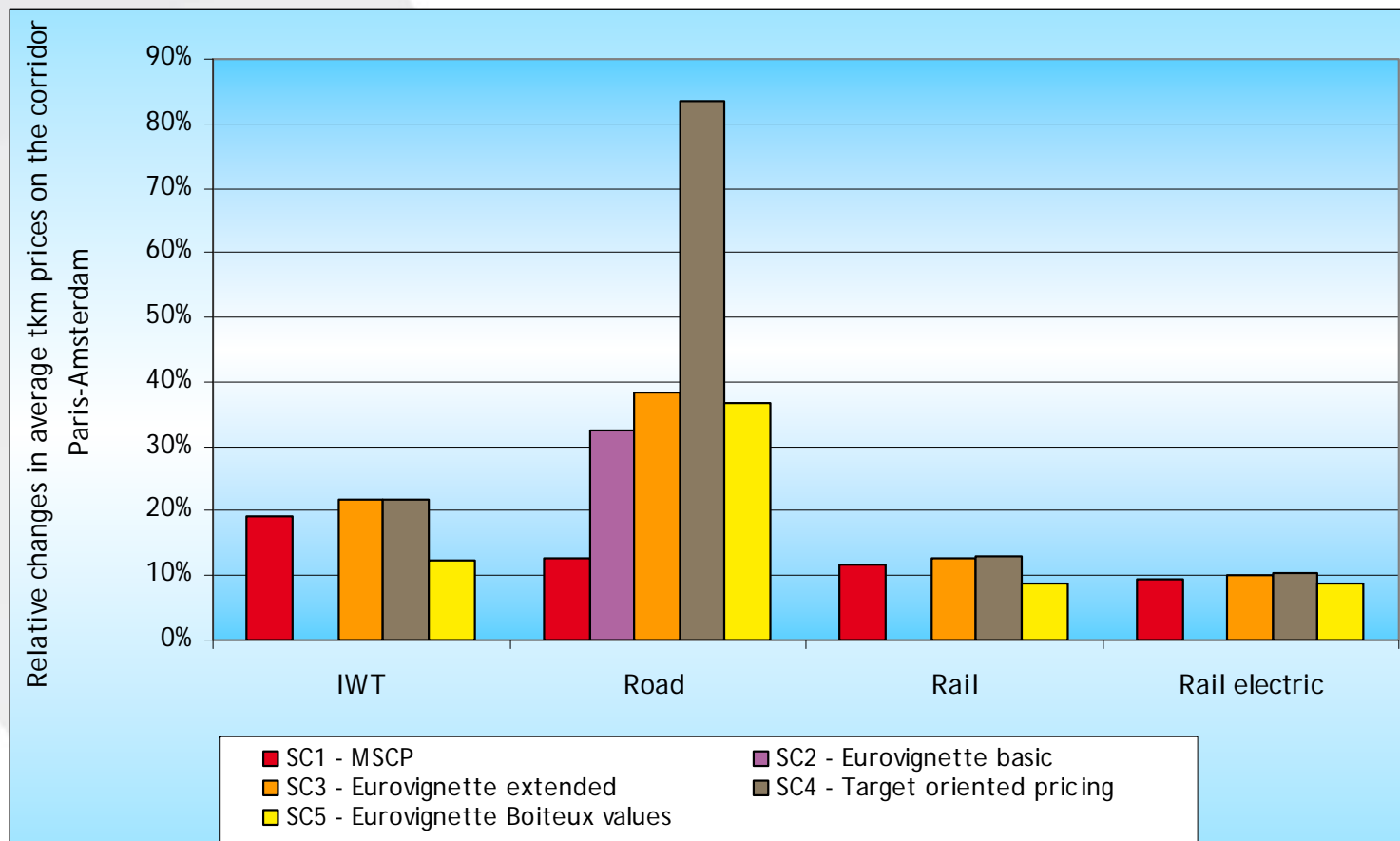
Scenario 4 - Target oriented

- To test the maximum impact of pricing on modal shift and emissions
- Carbon tax of €40 (2020) and €85 (2050) per t CO₂; doubled for road
- Km-charges for road: twice all infrastructure and external costs: air pollution, noise and accidents
- Marginal infrastructure and external costs for IWT and rail
- Congestion charges for road based on model calculations

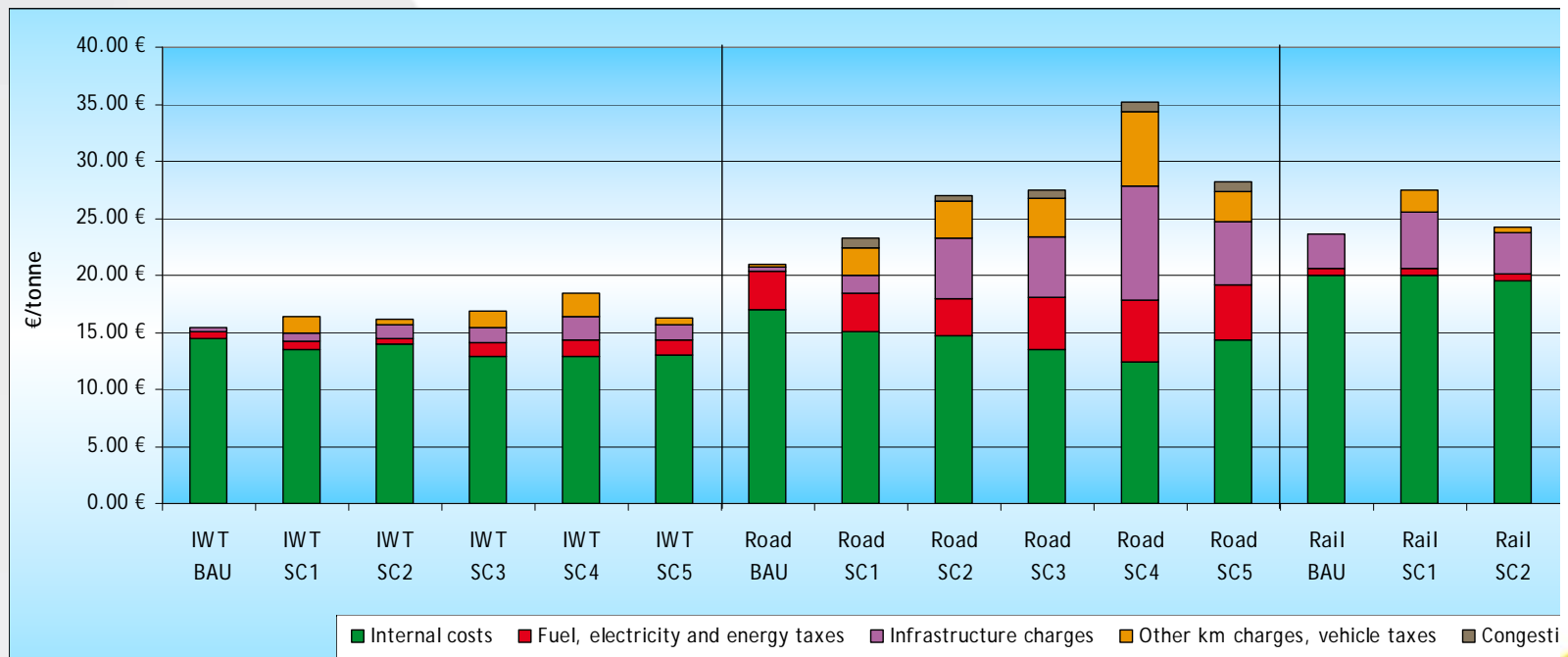
Scenario 5 - Eurovignette proposal - Boiteux values

- Same as scenario 3, but with French external cost values from Boiteux methodology (differs from IMPACT)

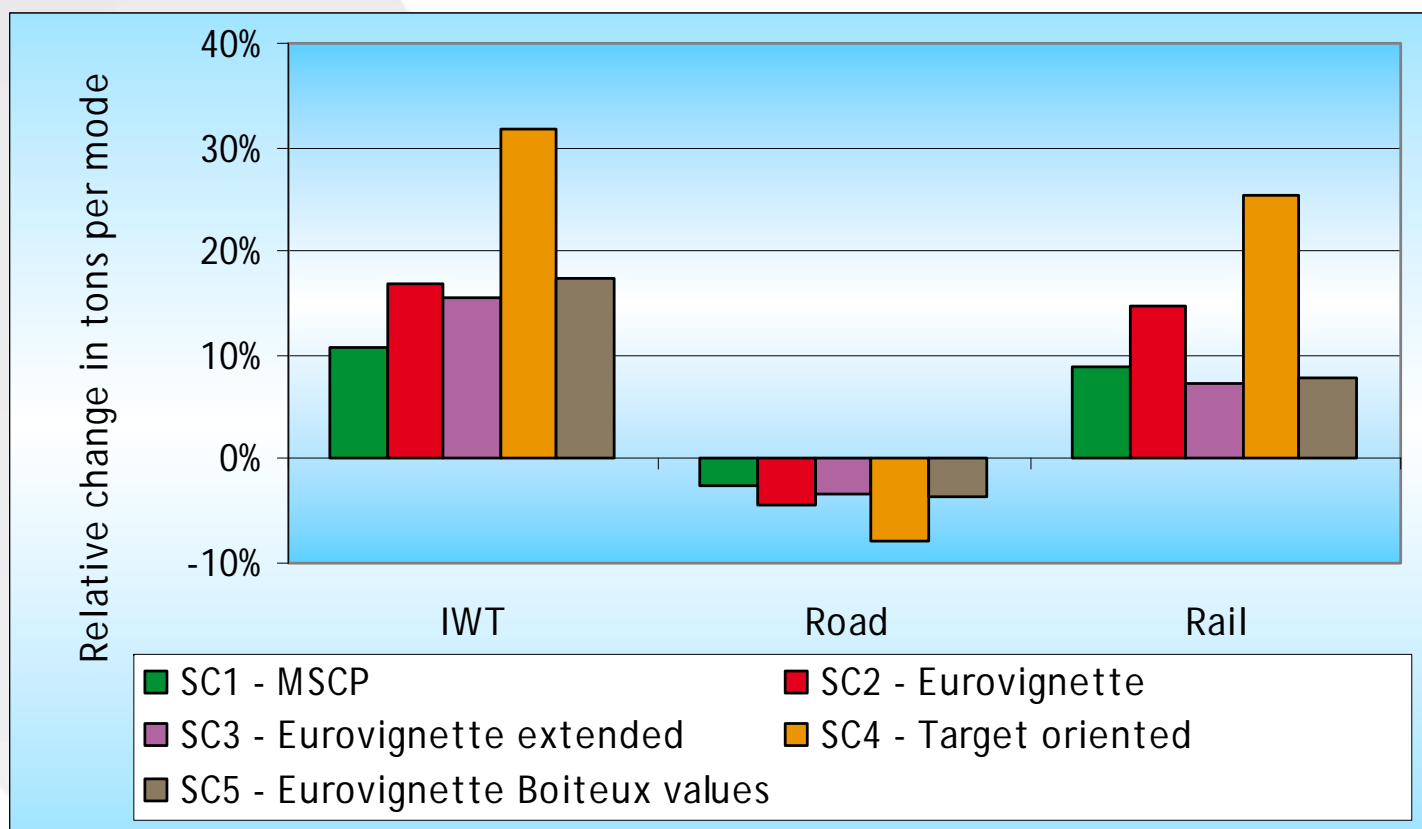
▶ Initial impacts on price levels



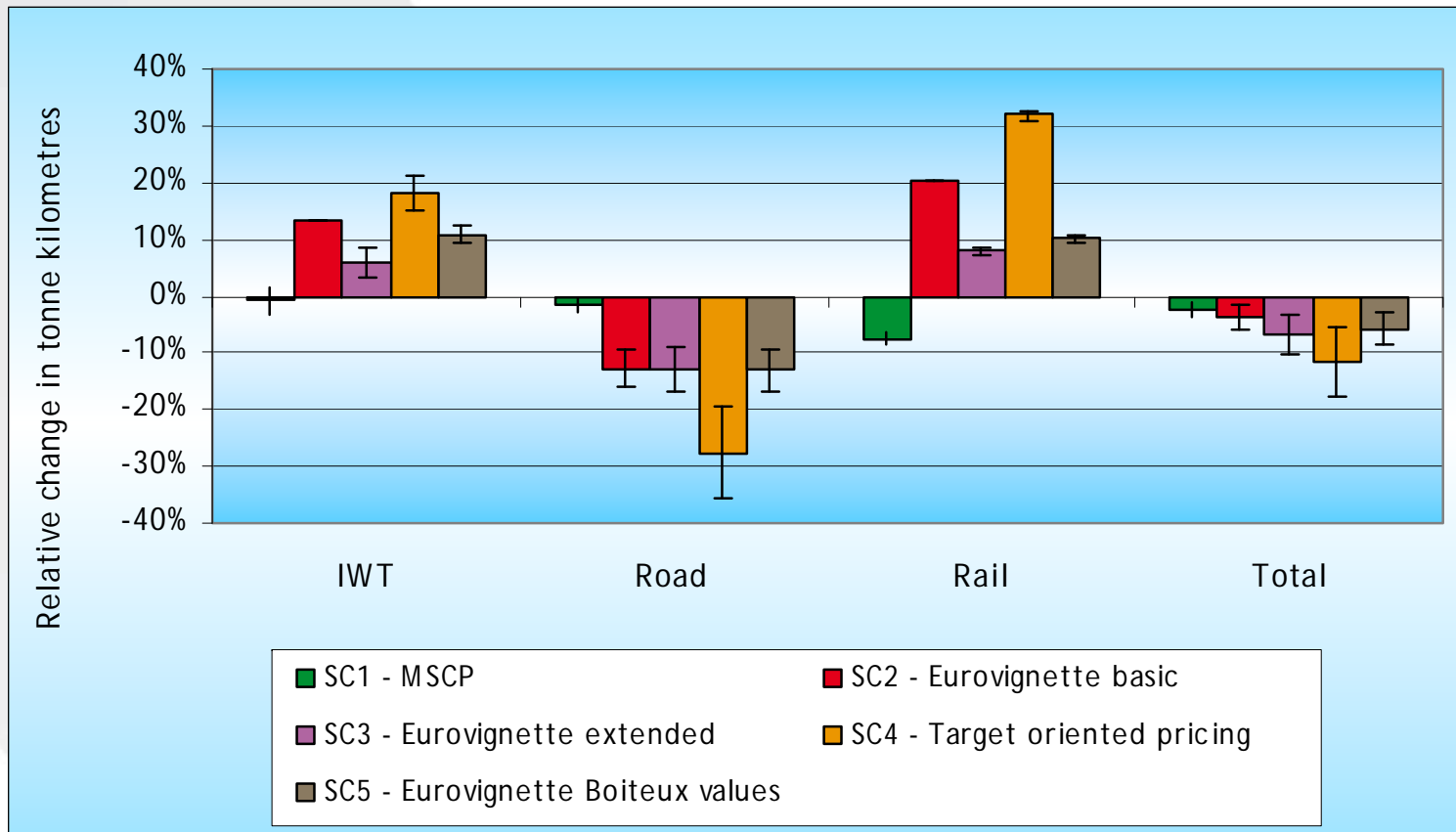
▶ Costs for an average trip on the corridor



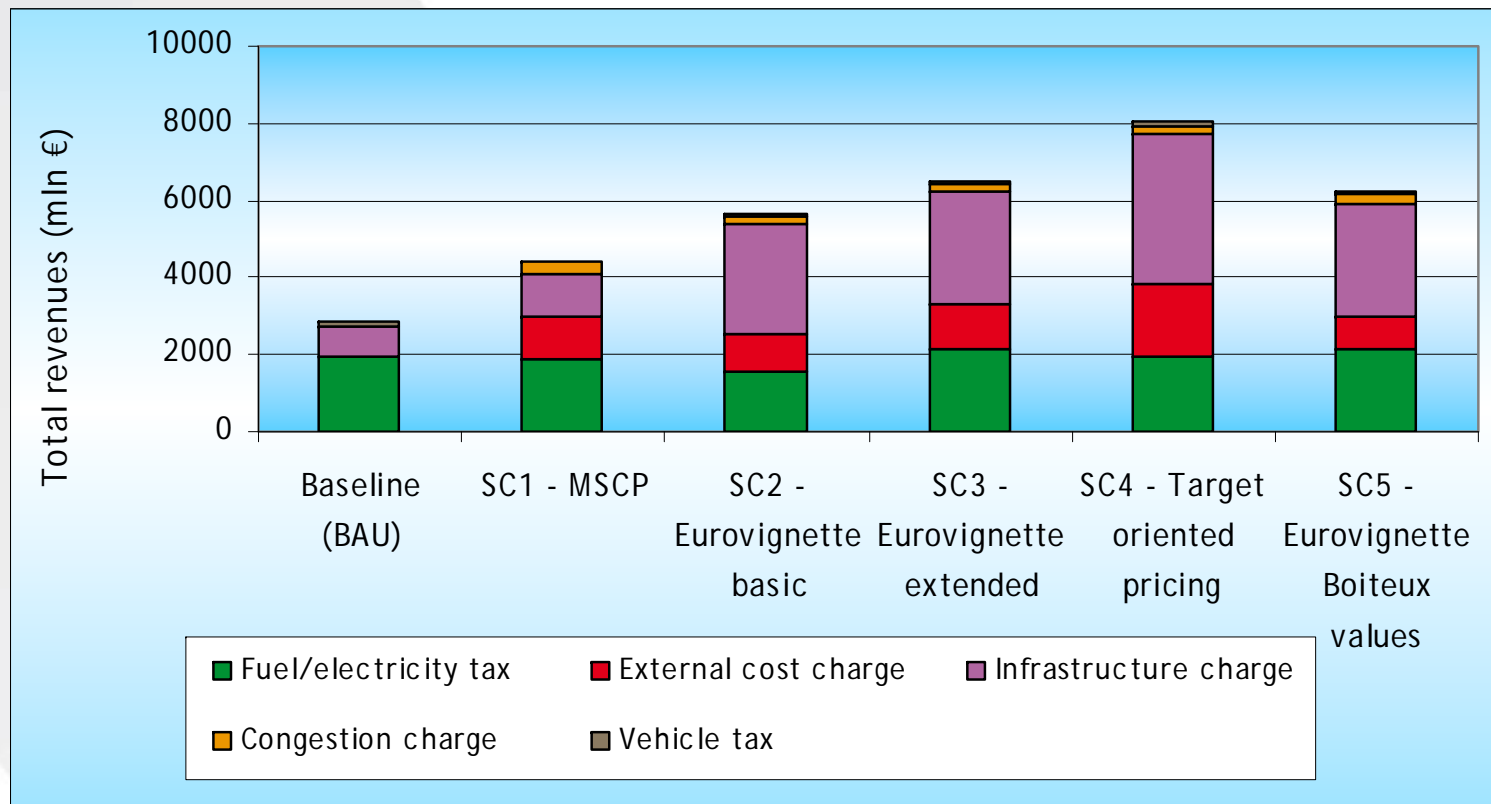
► Impacts on tonnes for the corridor in 2020



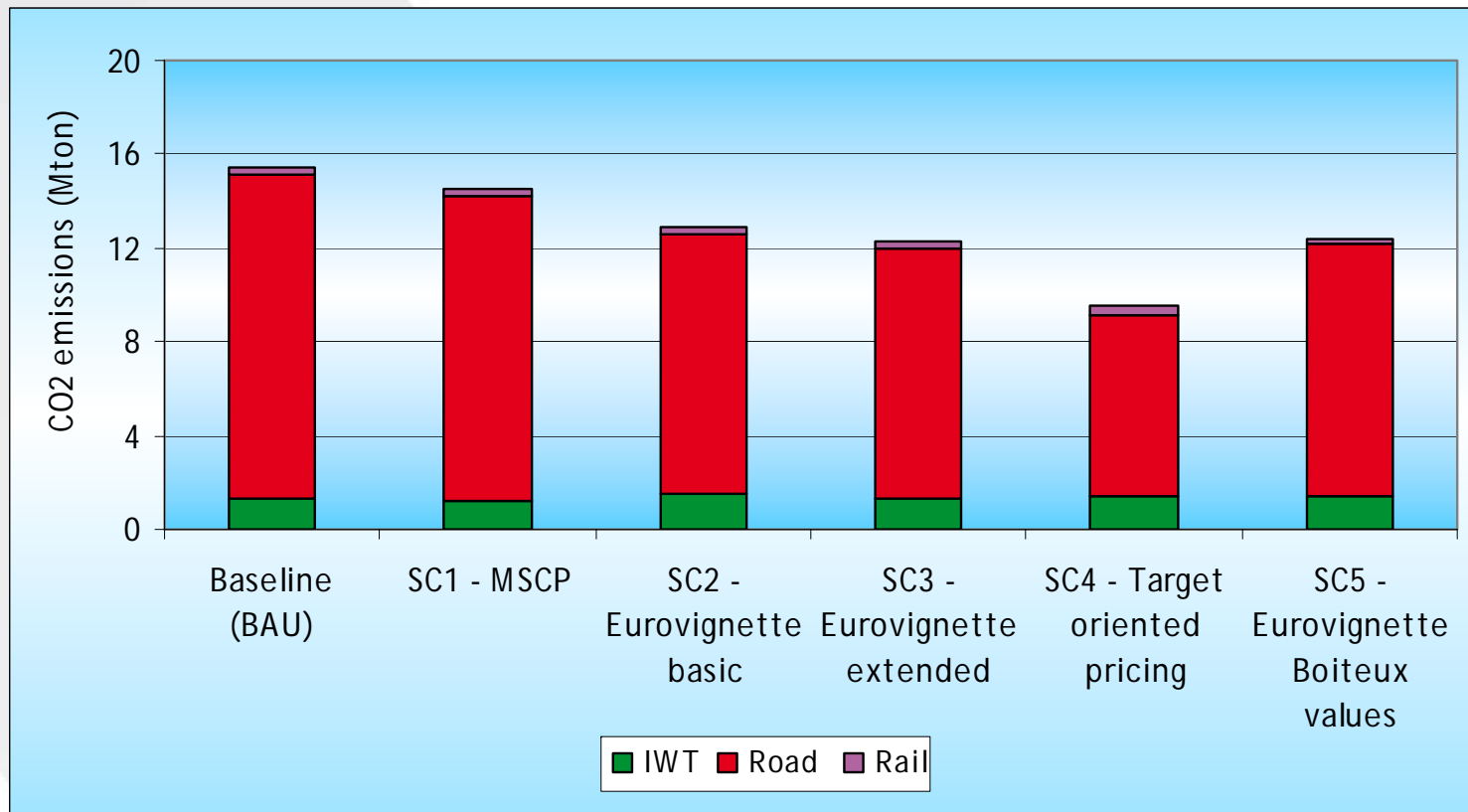
Impacts on tonne-kilometres for the corridor in 2020



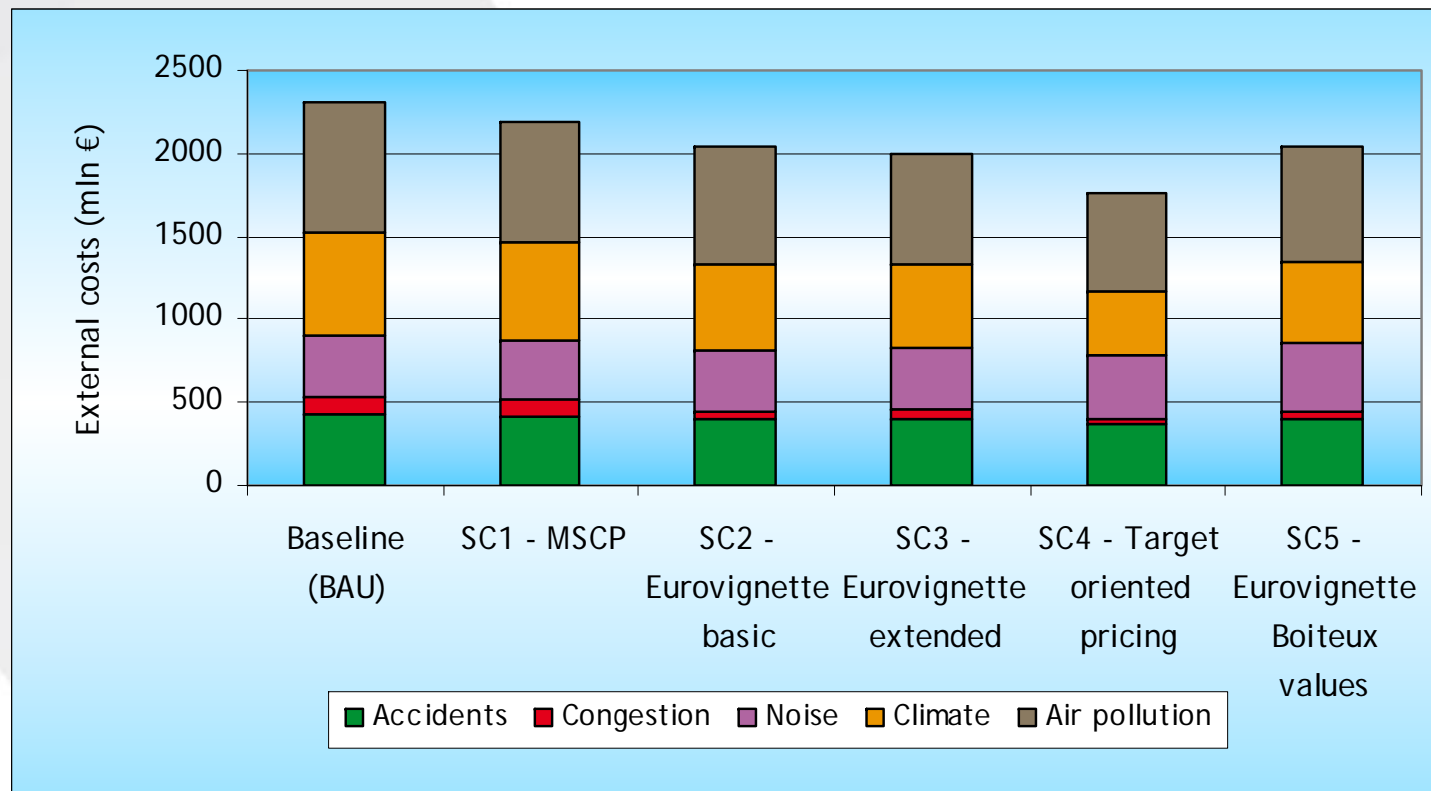
▶ Impacts on revenues on 2020



▶ Impacts on CO₂ emissions in 2020



▶ Impacts on external costs in 2020



▶ Main conclusions on scenario analysis (2020)






- Significant modal shift (up to +30% tonnes by IWT and 25% by rail; 7% to 17% in Eurovignette scenarios)
- Higher revenues (doubled in Eurovignette scenarios)
- Related impacts:
 - Higher vehicle loads (11% in Eurovignette scenarios)
 - High reduction of congestion (50%)
 - Lower CO₂ emissions (20% in Eurovignette scenarios)
 - Lower pollutant emissions (up to 30% in Eurovignette scenarios)
 - Strong reduction of external costs (up to 14% in Eurovignette)

▶ Strategic considerations

- Short term: charging full infrastructure, air pollution and noise costs:
 - Technically feasible
 - No legal barriers
- Medium term: charging for all external costs for all modes and marginal infra costs for rail and IWT
- Strong and smart pricing policy fits well in long term strategy for decarbonizing transport (e.g. carbon taxation)
- Key evidence of the study: multimodal and international tolling is rational, efficient in terms of competitiveness of rail and IWT
- Important revenues generated
- Next phase in IWT emission standards recommended

▶ Thank you for your attention

- Leaflet summarising the study available in three languages (ENG / F / NL) on website www.seine-nord-europe.com
- Study itself available on request (ENG / NL):

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