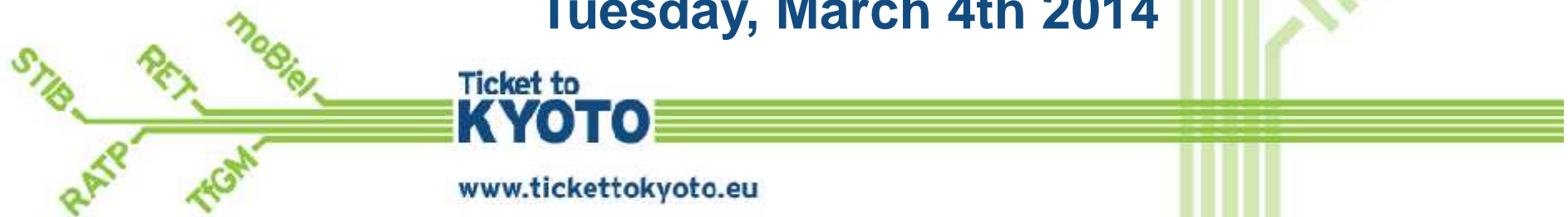


“Energy efficiency and urban transport systems”

UITP and URBAN Intergroup

Patricia Remacle, STIB
Tuesday, March 4th 2014



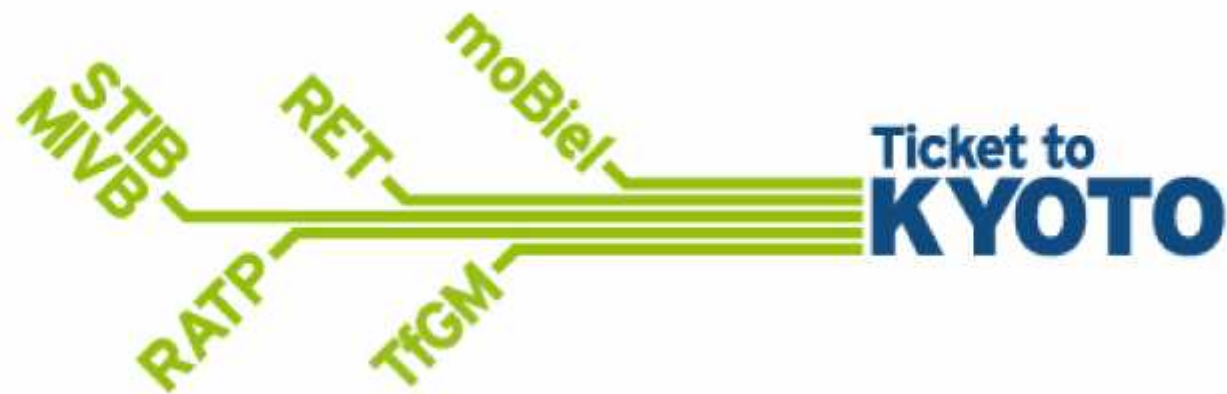


**Let's build a
strategy**





Reducing CO₂ emissions in public transport





Objectives

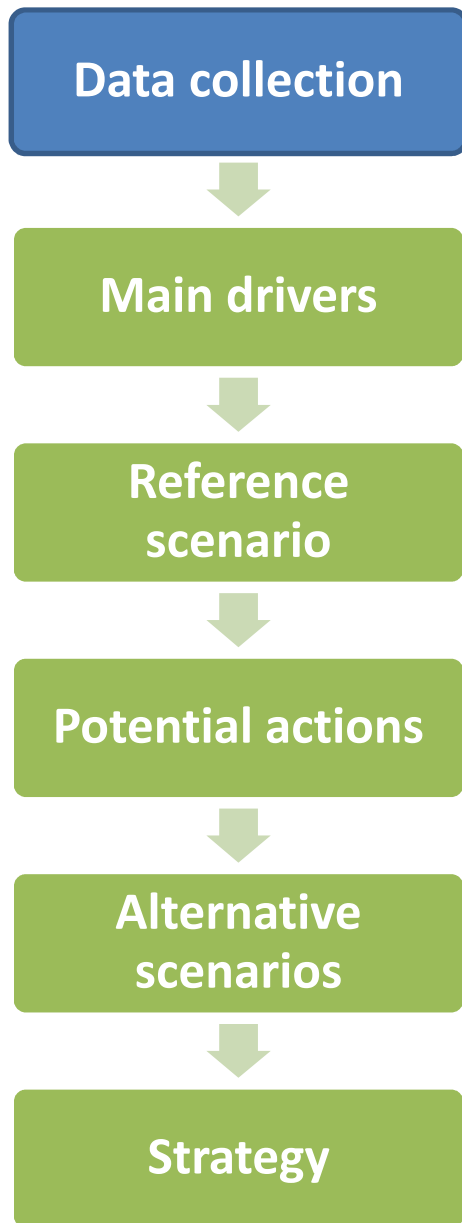
1. Reduce GHG emissions

&

2. Reduce energy consumption
and costs

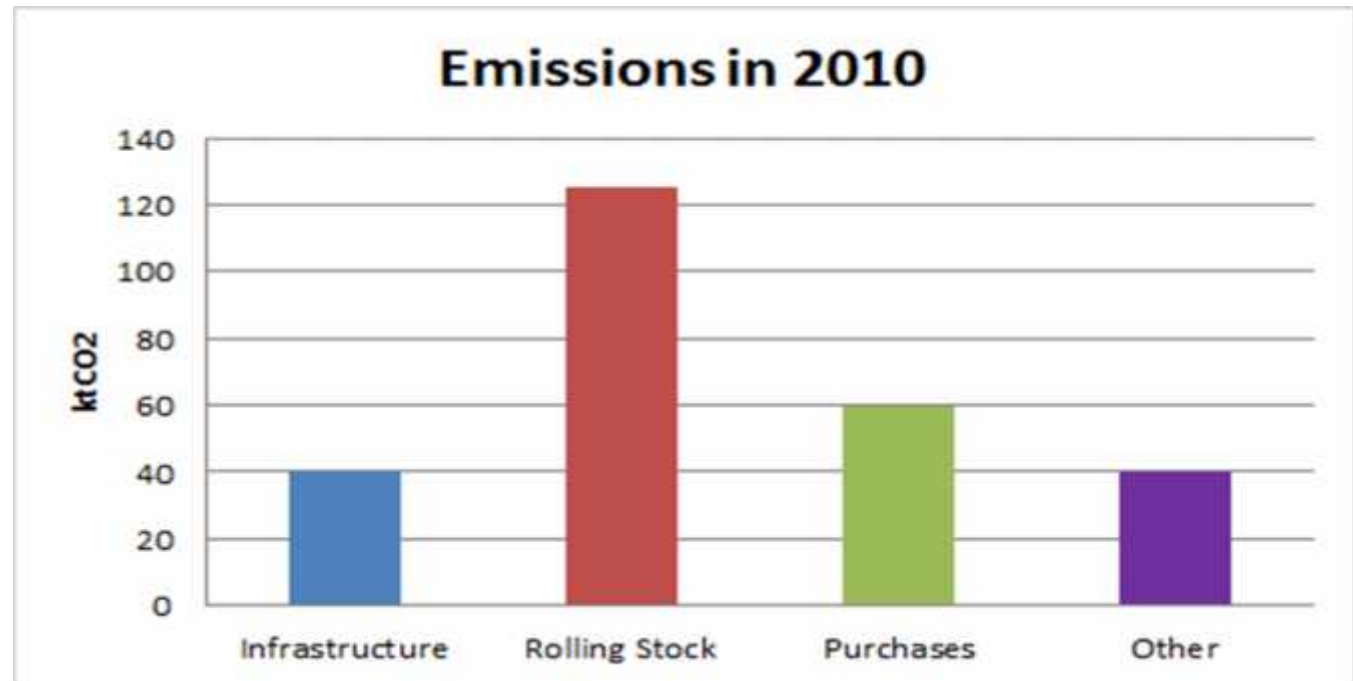
&

3. Increase share of renewable
energy



Measure

- Smart metering system
- Carbon footprint
- Indicators
- Strategic tool



Data collection

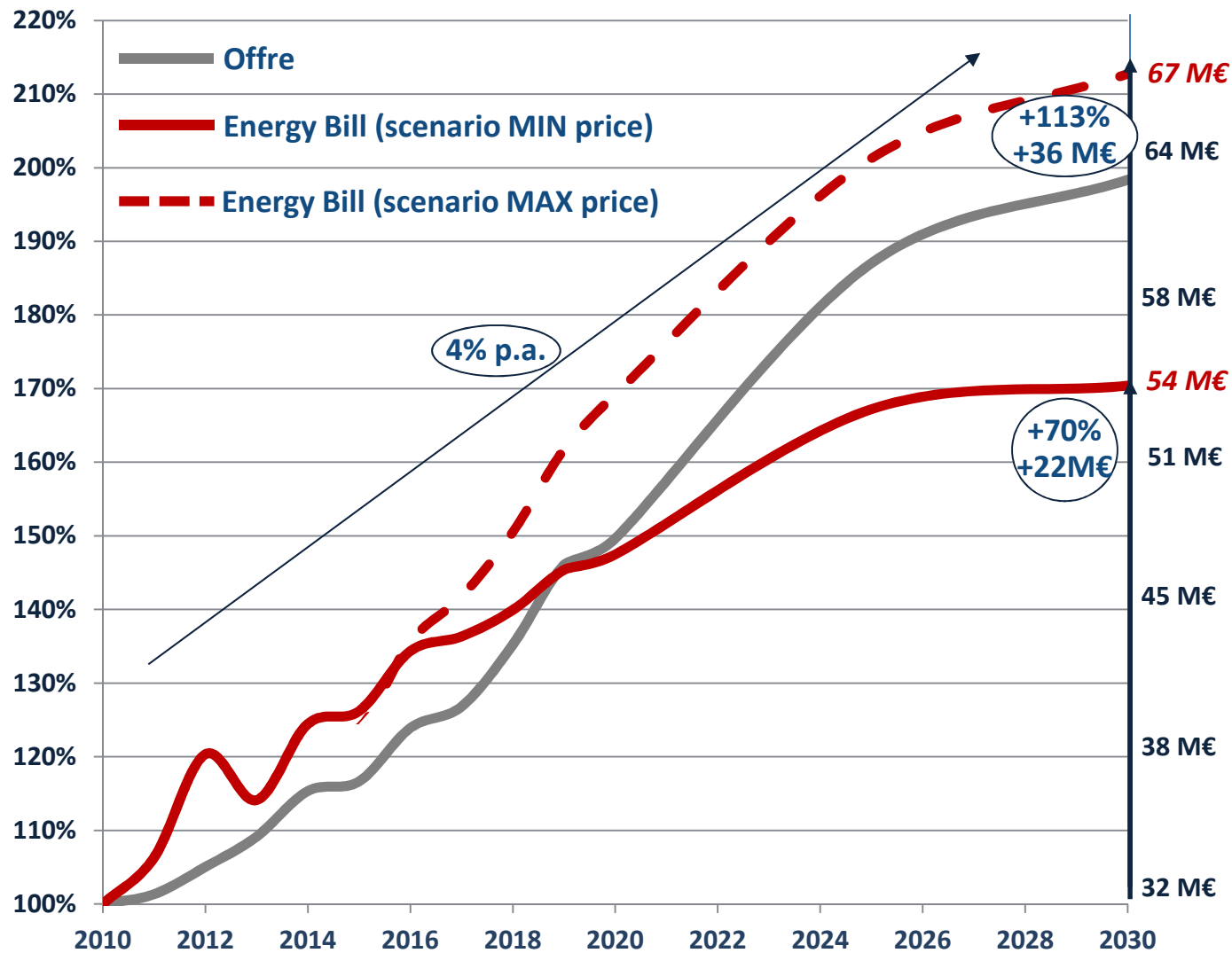
Main drivers

Reference scenario

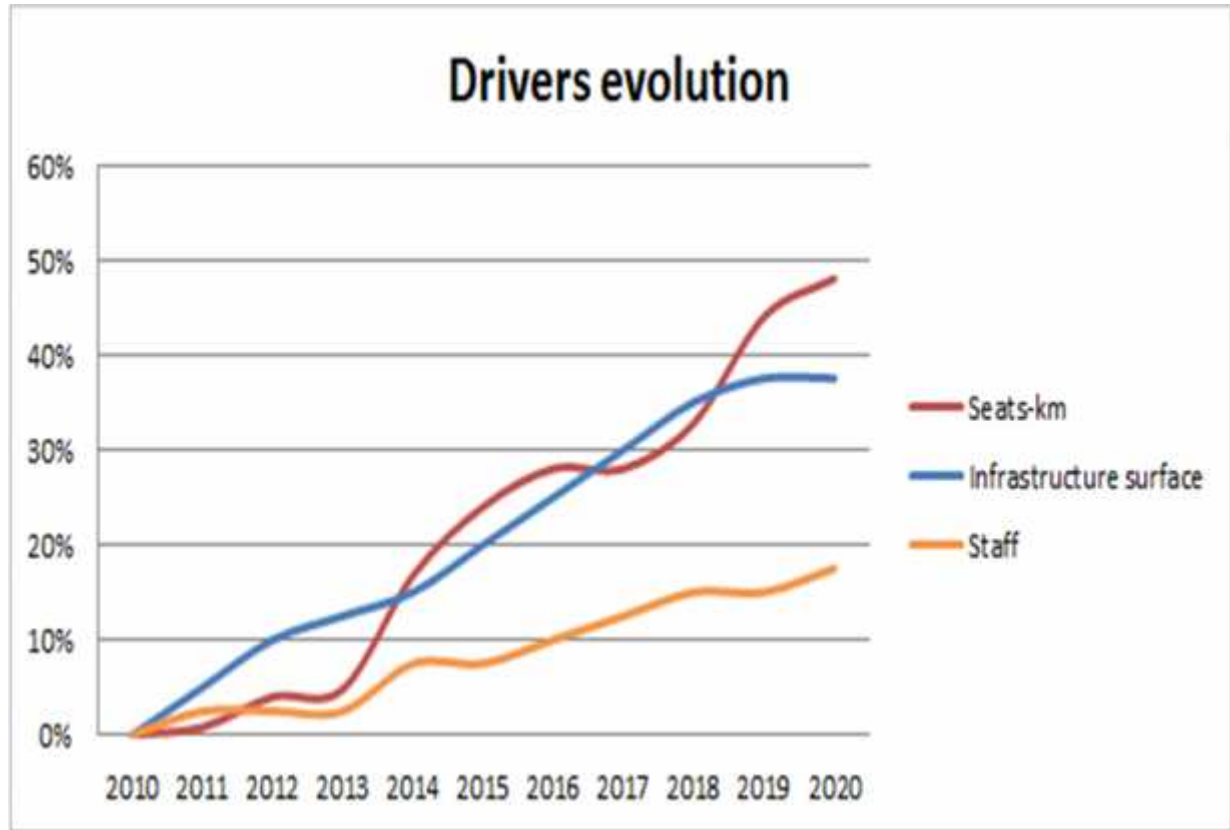
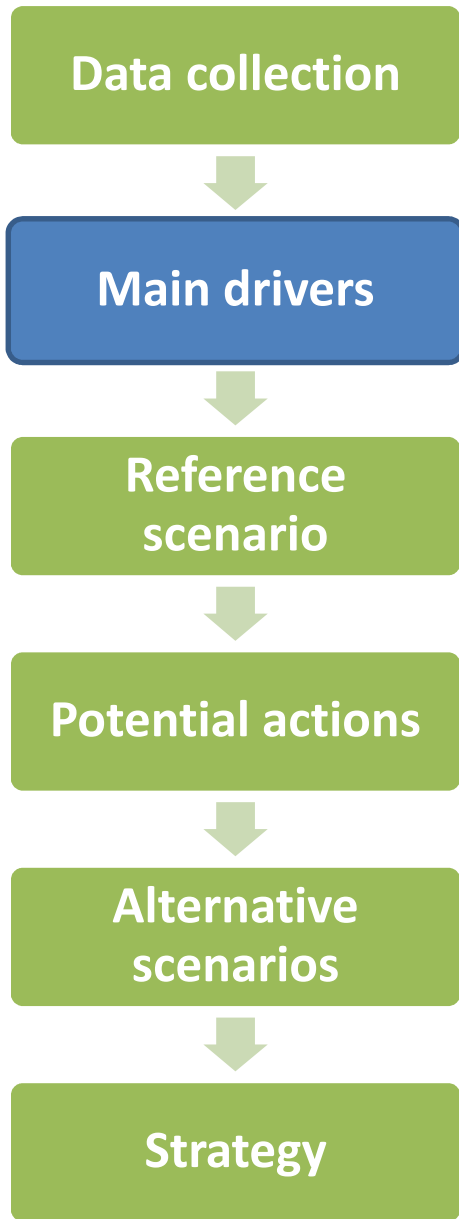
Potential actions

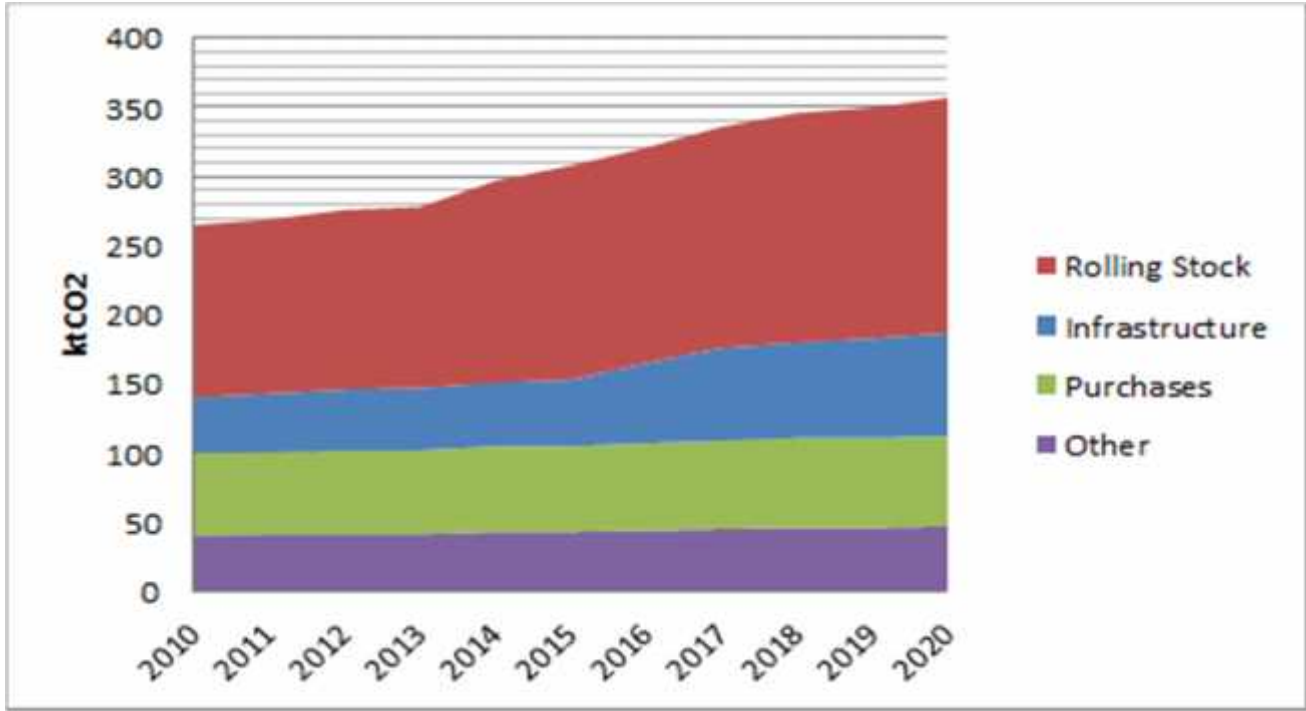
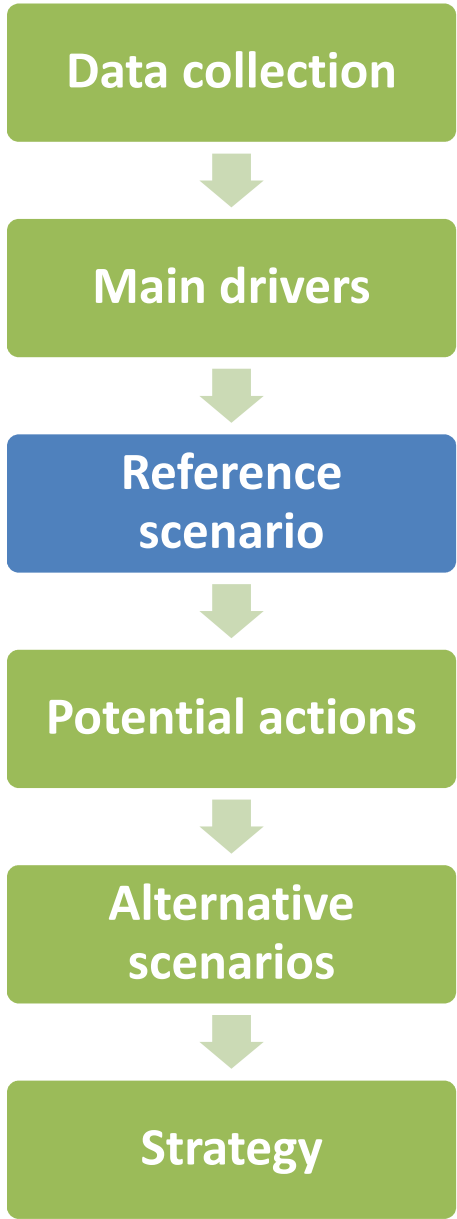
Alternative scenarios

Strategy

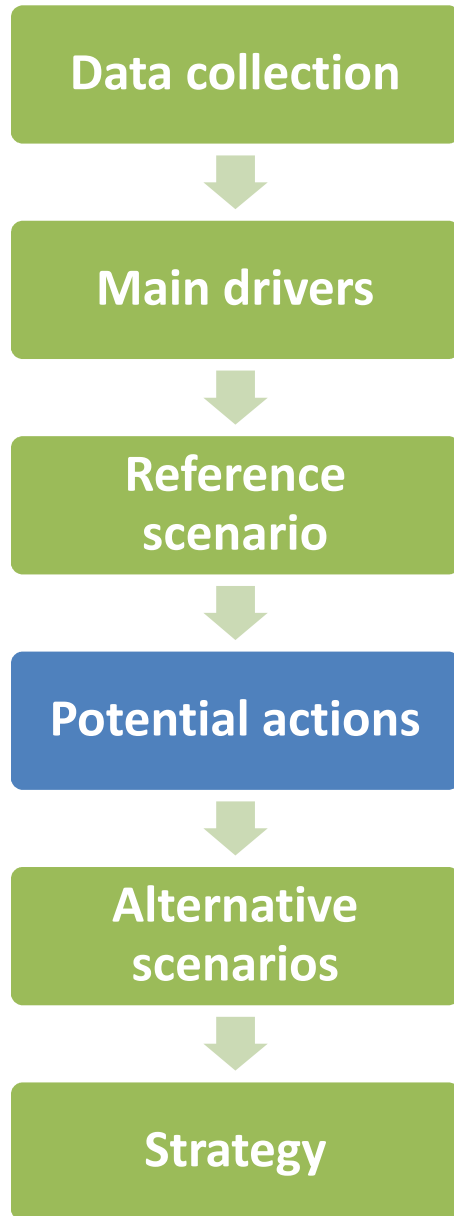


Source: STIB, Climact





55 actions



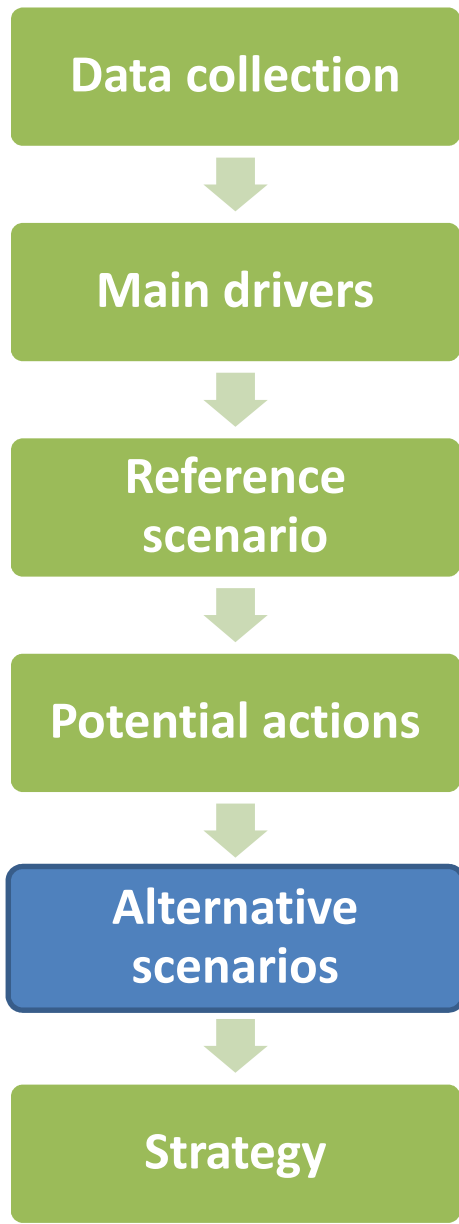
RENEWABLE ENERGY	
Electricity contract	Guaranties of Origin
Renewable energy	Wind power Photovoltaic panels

ROLLING STOCKS	
Fleet	Hybrid Buses / electric buses, new trams and metros
Technical measures	Energy recovery from Braking, HVAC measures
Network	Commercial Speed, Metro Automatisation
Behavior	Eco-Drive
Monitoring and management	Vehicle telemetering

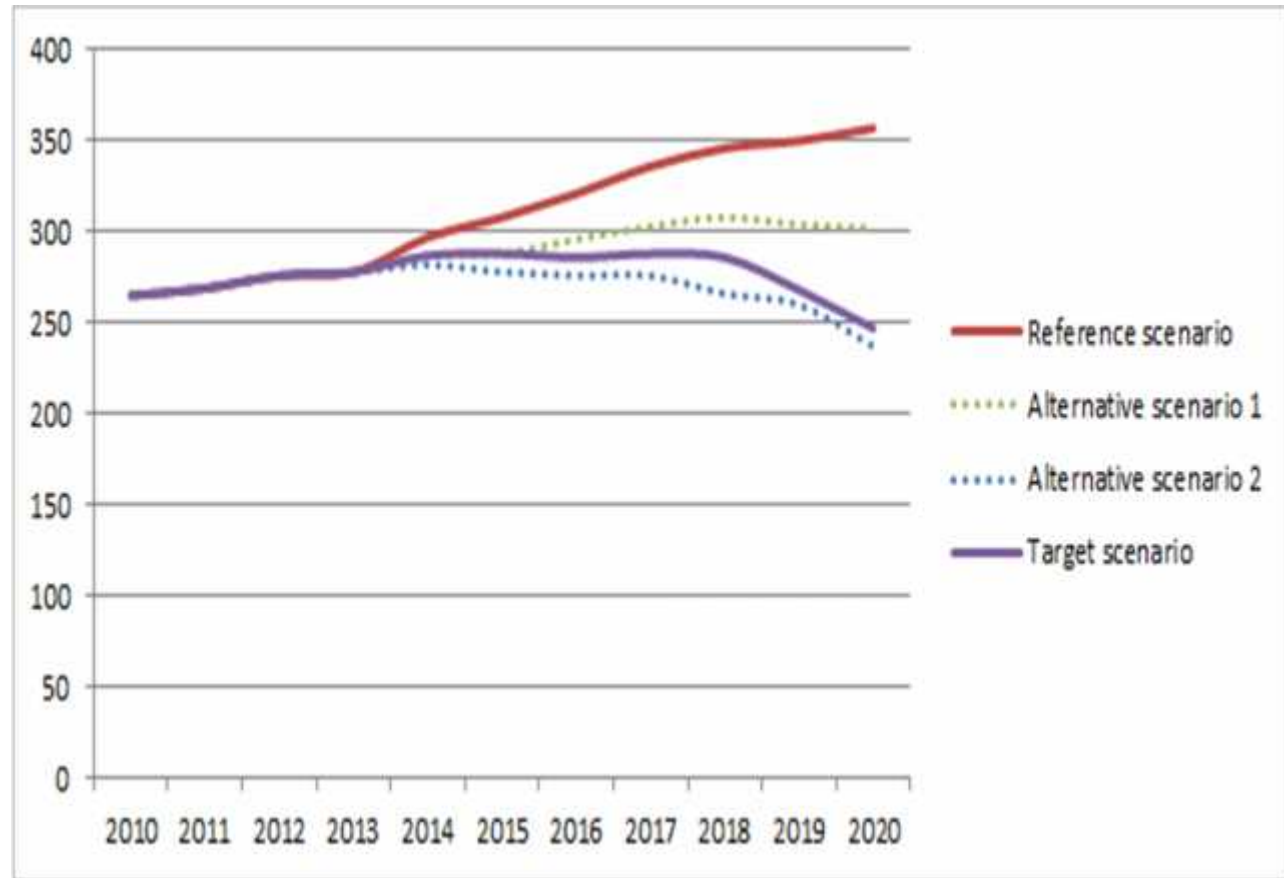
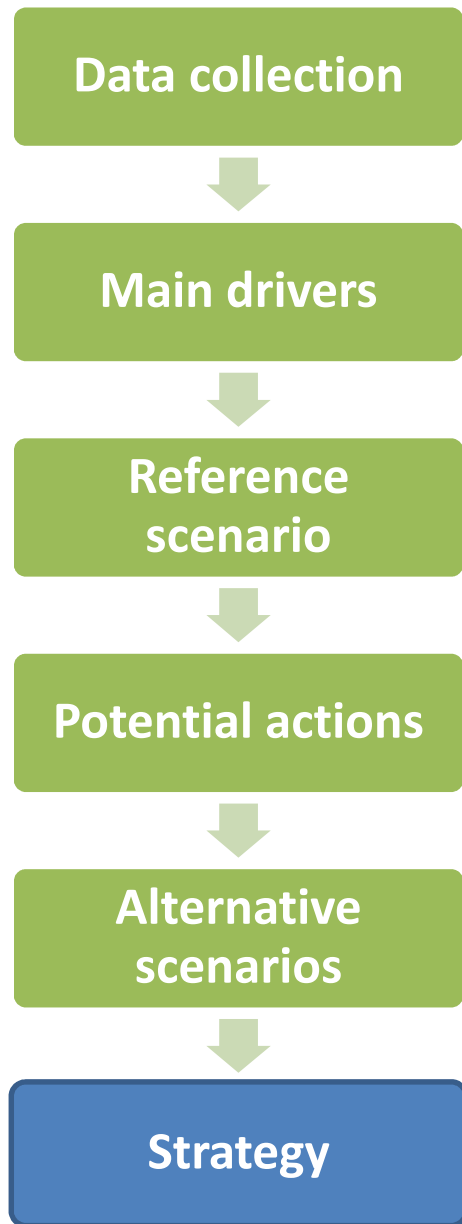
INFRASTRUCTURE	
Technical measures HVAC	Renovation of boiler, Isolation, Cogeneration (Combined Heat and Power)
Monitoring and energy management	Smart Metering
Behavior	Influencing individual behaviors
Technical measures - lighting	LED, Natural light, Other technologies
Technical measures - IT and devices	Green data centers

PURCHASE
Improve knowledge
Reduce quantities
Improve quality

OTHERS
Mobility plan
Waste



Criteria
GHG emissions
Energy consumption
Financial impact
Timing of implementation
Human Resources
Reputation
Technical difficulty



Key factors of success

- **T2K expertise and EU financial contribution**
- **Comprehensive approach and simulation tool**

Some hints on STIB observation

- **Most ambitious but realistic scenario has the best return on investment**
- **Biggest CO₂ impact : transition from diesel buses to hybrid/electric buses**
- **Low potential in terms of renewable energy**
- **Contribution to the reduction of regional CO₂ emissions**

T2K feedbacks to EU

- 1. Public transport is a key actor for CO₂ reduction in the transport sector**
- 2. Need to CO₂ raise expertise within PT companies**
- 3. CO₂ reduction = costs reduction**
- 4. Transition to hybrid and electric buses is by far the most important action for CO₂ reduction.**

T2K feedbacks to EU

- 5. Harmonized guidelines needed to select emission factor for electricity (contract, supplier, national)**
- 6. Green electricity debate – Guaranty of Origin**
- 7. National hypothesis (emission factor, energy costs, carbon costs)**
- 8. EU financial support is essential**

If you want to know more...

- Check out www.tickettokyoto.eu
- And register for the newsletter

**Final Event T2K
Paris 16/05**

