

Foster clean and multimodal mobility using smartphone data

Symposium of the IFP School Chair on Electric, Connected, and
Autonomous Vehicle for Smart Mobility

24/11/2020, by Salah EL HAJJI



CleanMob - Clean mobility enabler (B2B)

Agenda



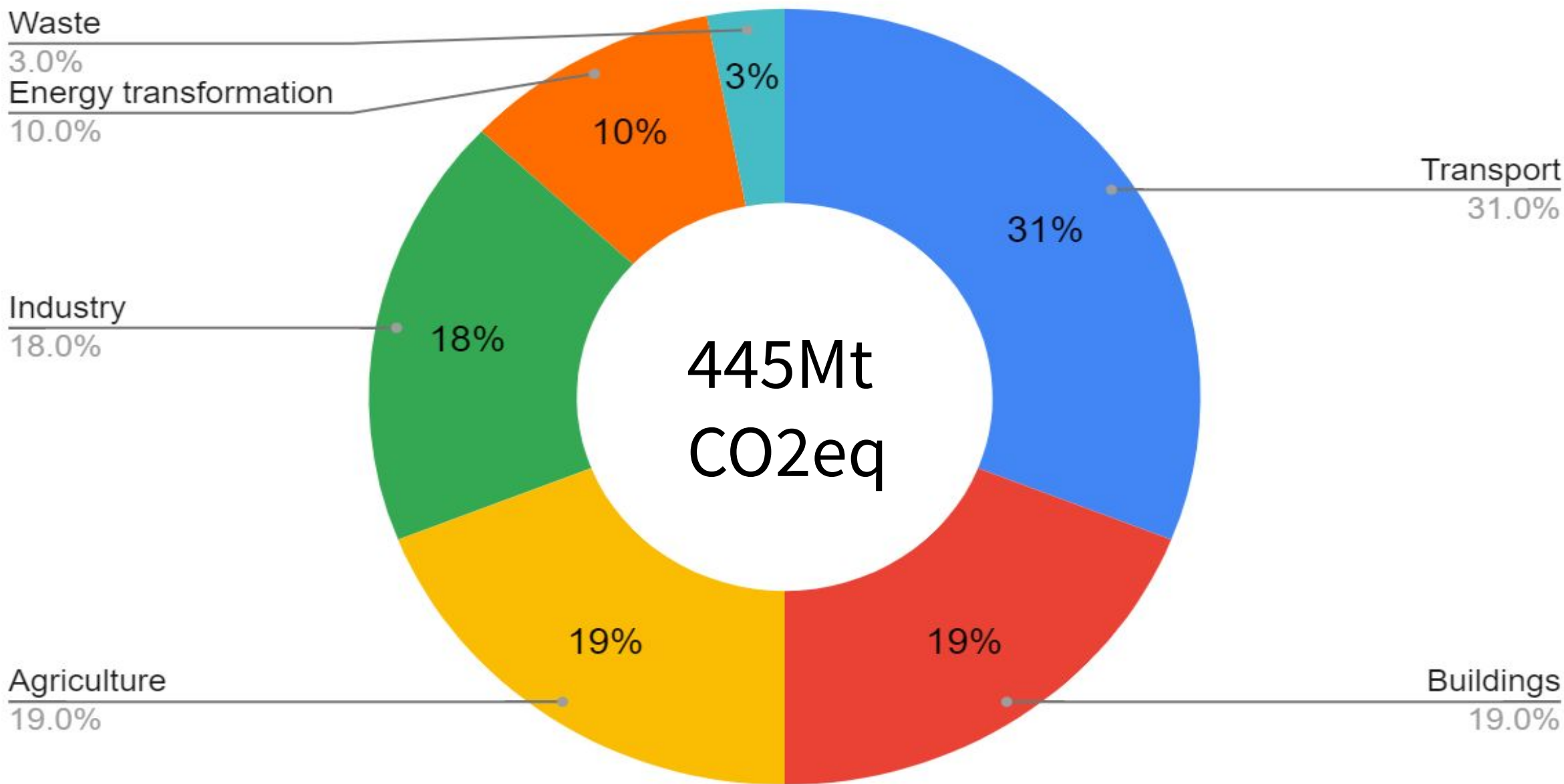
- 01** Context of modern mobility
- 02** Mitigation options
- 03** Vision, ambition and solutions
- 04** CleanMob under the hood
- 05** Conclusion

Context of modern mobility

Transport is the major contributor



National GHG emissions - France (2018)



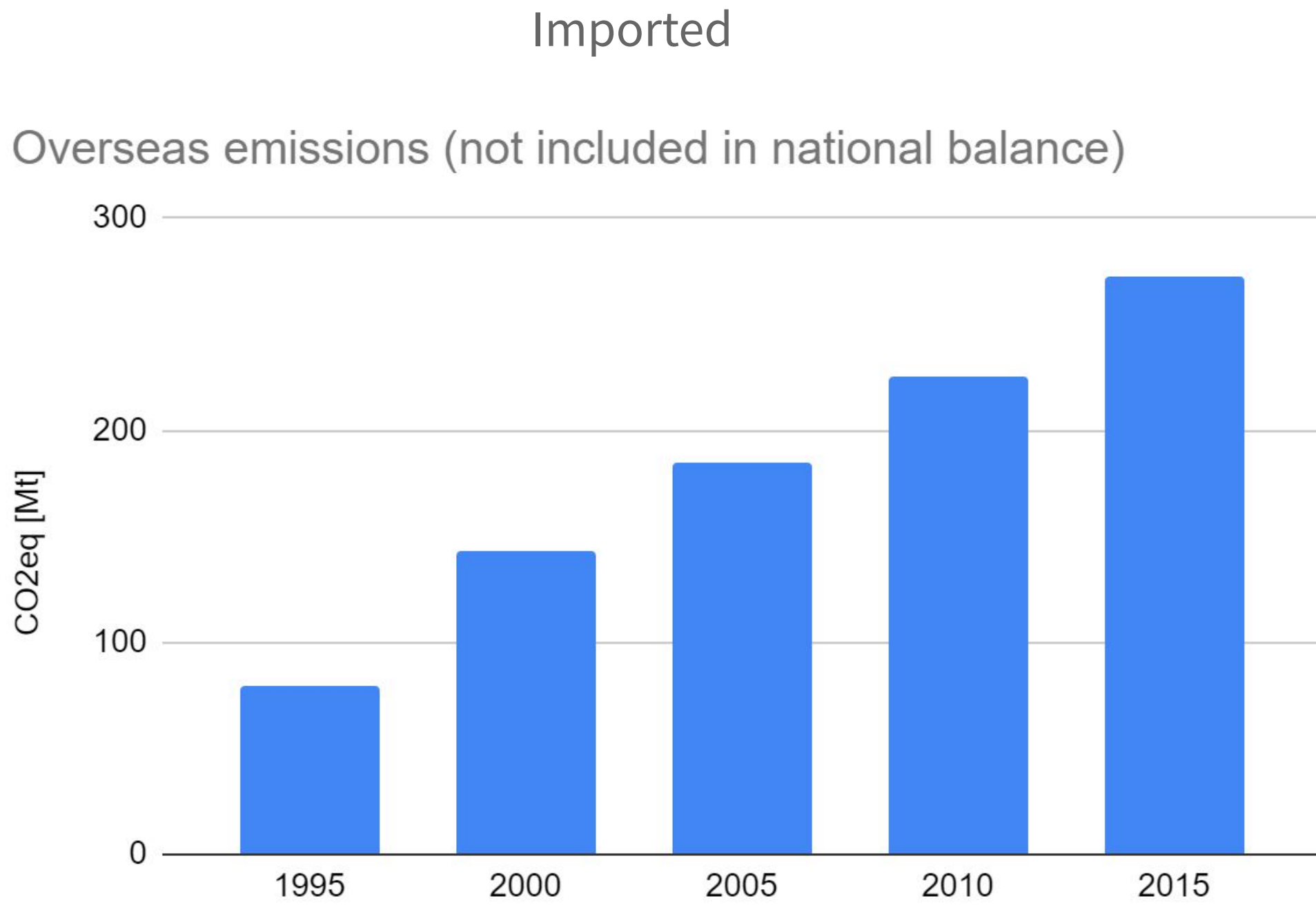
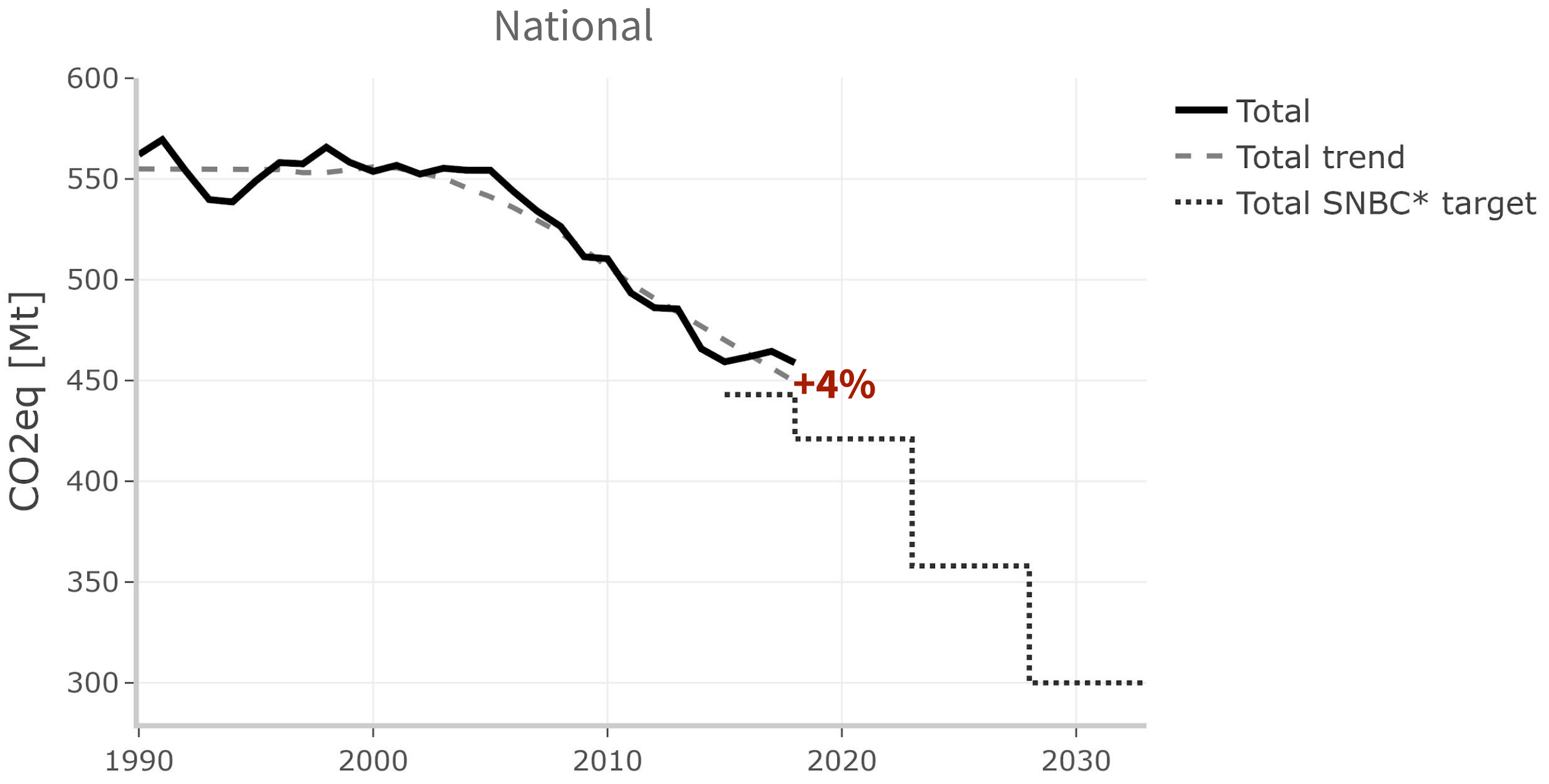
CO2 emissions by source

Source : HCC report 2019



Context of modern mobility

An insufficient reduction...



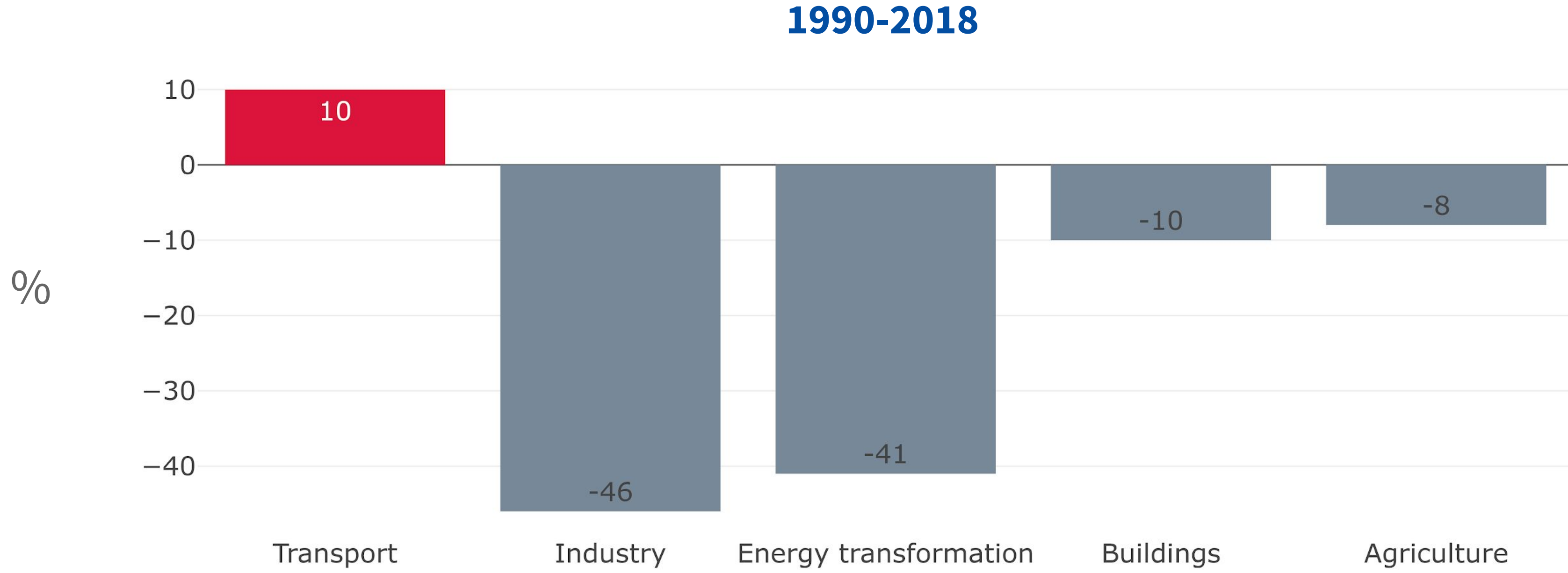
National CO2 emissions evolution

Source : HCC report 2019
SNBC*: Stratégie nationale bas carbone

Imported CO2 emissions evolution

Source : HCC report 2019

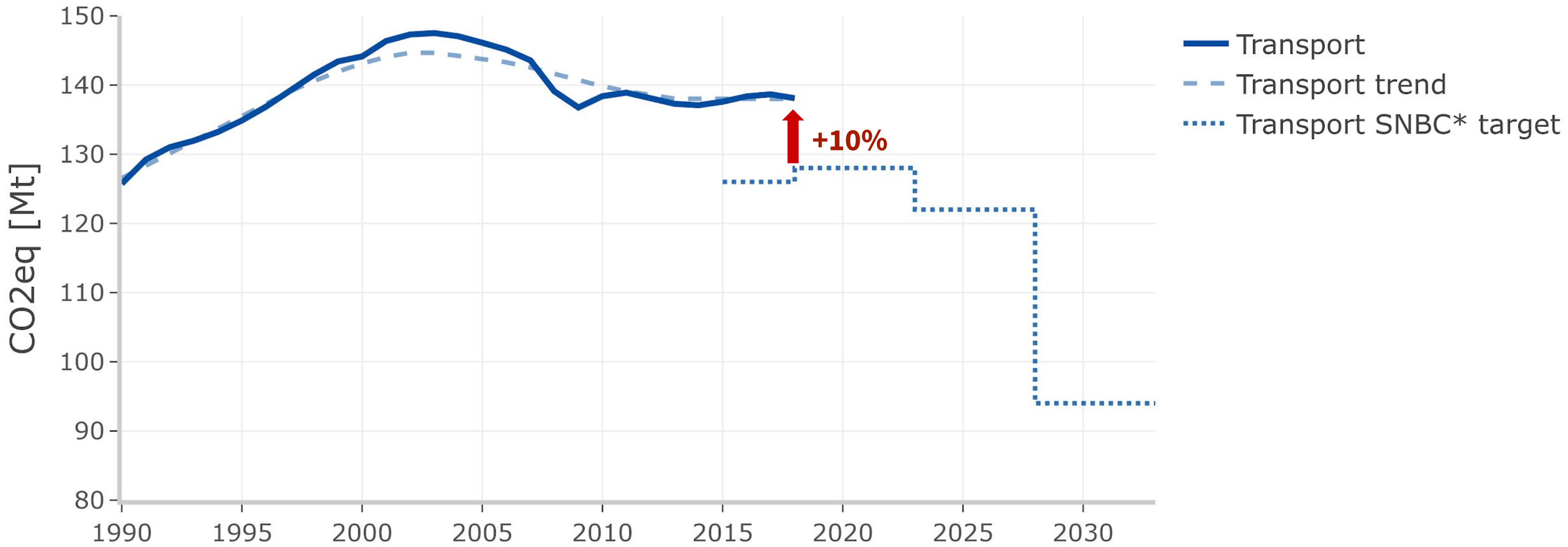
Context of modern mobility
...especially in transport



CO2 emissions evolution by source 1990-2018

Source : HCC report 2019

Context of modern mobility
...especially in transport



CO2 emissions - Transport evolution

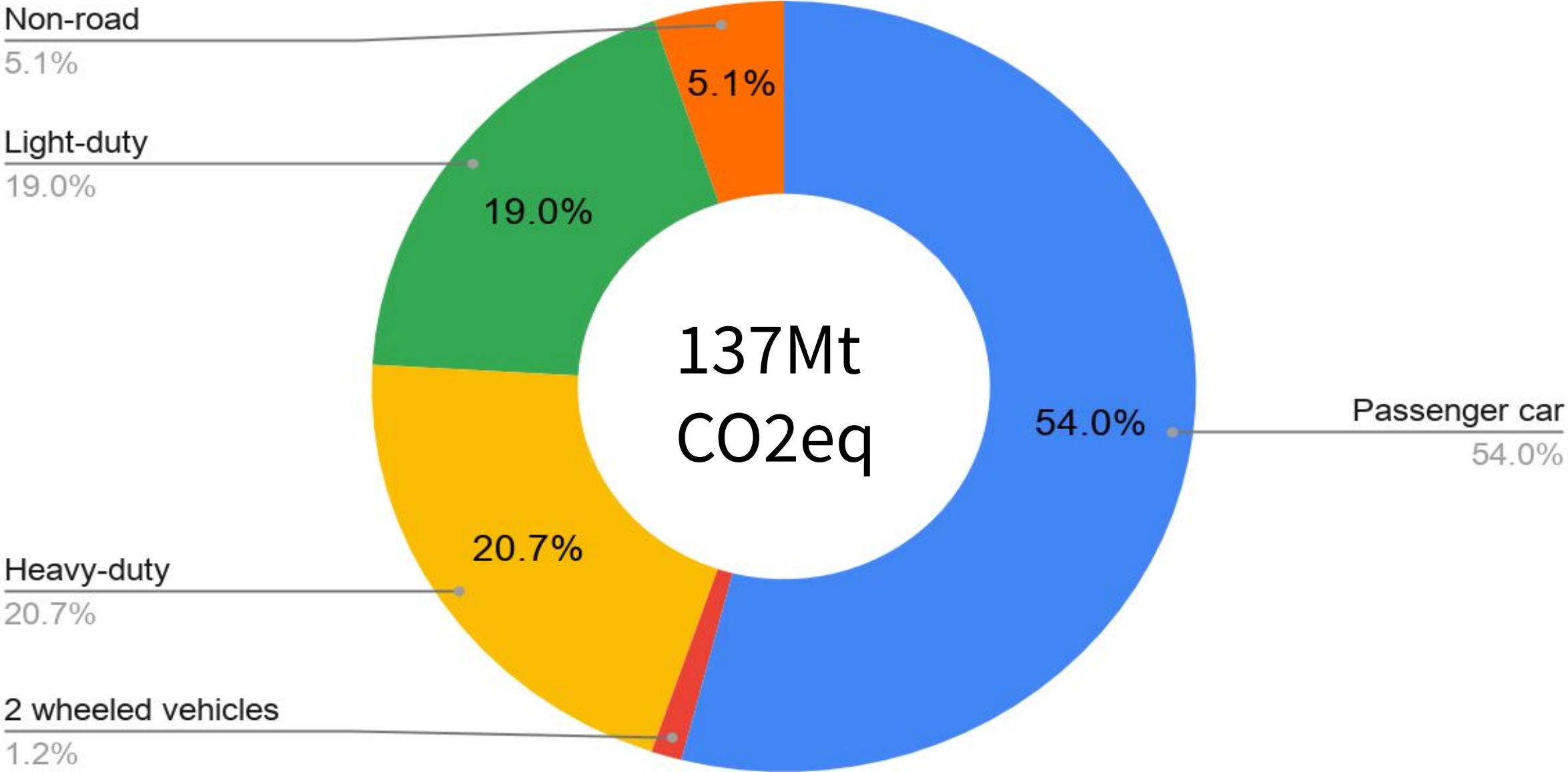
Source : HCC report 2019
SNBC*: Stratégie nationale bas carbone

Context of modern mobility

People transportation represents 60%



Transport GHG emissions - France (2018)



CO2 emissions - Transport

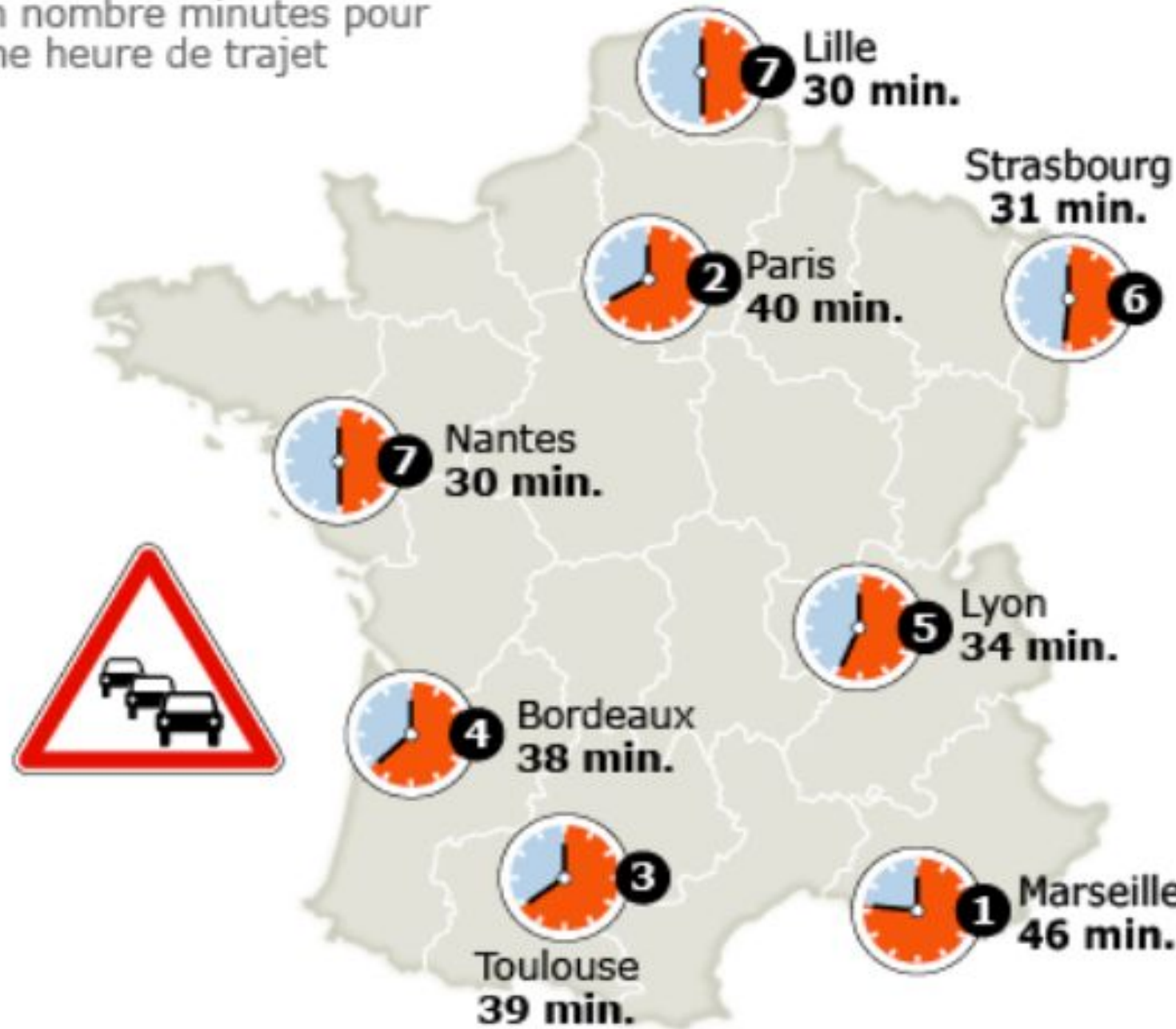
Source: AEE 2018

Context of modern mobility

Personal car, a habit that needs change



TEMPS PERDU DANS LES EMBOUTEILLAGES
EN PÉRIODE DE POINTE
en nombre minutes pour
une heure de trajet



75%

of the french population uses individual cars for trips of less than 8km (5km in cities)

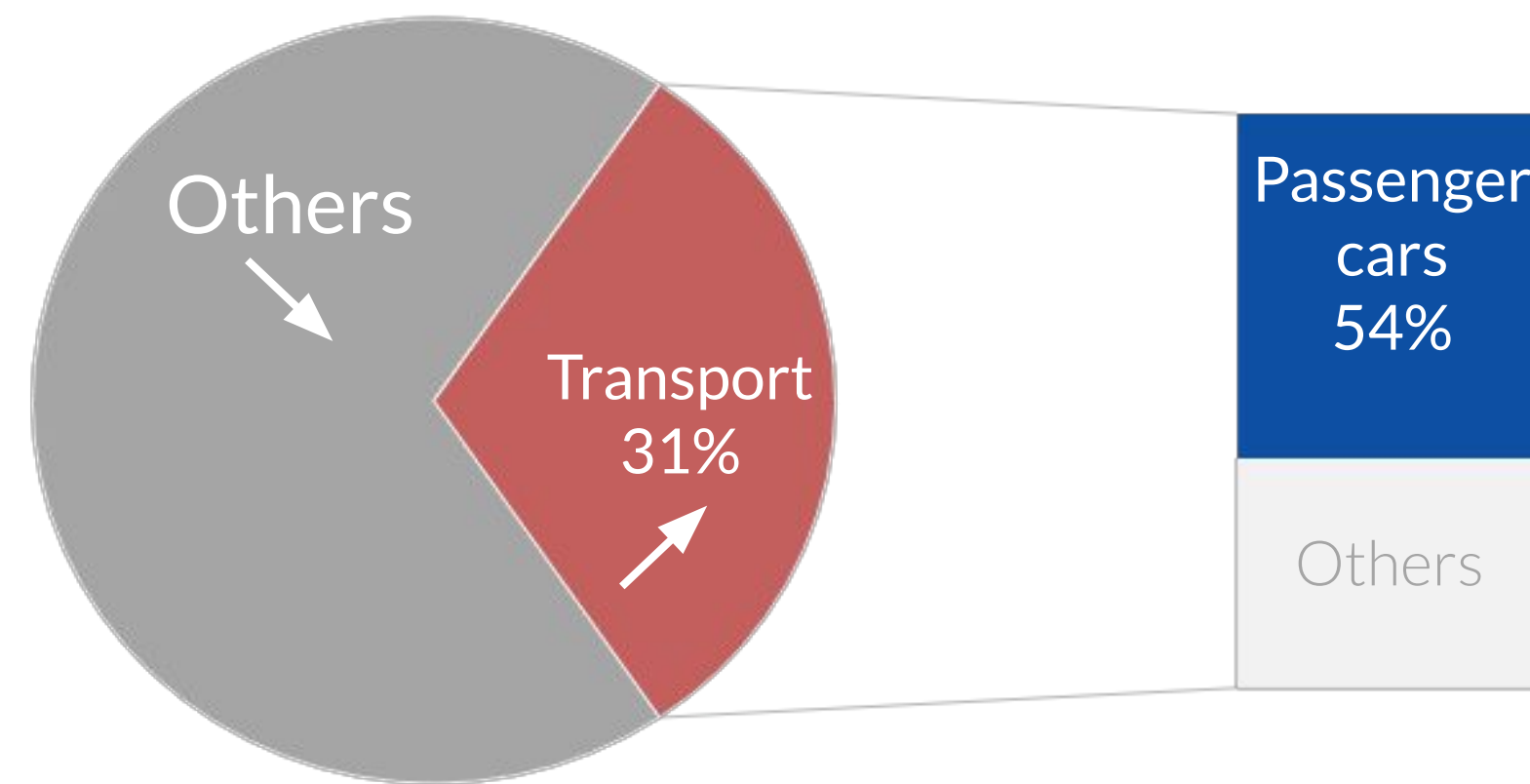
INSEE 2014

Traffic congestion

Source: tomtom.com/congestionindex

Context of modern mobility

Today transport innovation is mainly focused on energy efficiency and personal car...



- Excessive energy demand
- High dependency on oil
- High CO₂/km
- Noxious emissions
- High usage of public space
- BEVs will increase imported emissions

...But is personal car our only option ?

Transport contribution to national CO₂ emissions

Source: AEE 2018 / HCC report 2019

Context of modern mobility

A holistic view on the mobility problem



- 01 Context of modern mobility
- 02 Mitigation options**
- 03 Vision, ambition and solutions
- 04 CleanMob under the hood
- 05 Conclusion









Mitigation options

Mitigation options

Diversification will be key







Worse Neutral Improved

Scenarios	 ENERGY	 CO₂	 TRAFFIC CONGESTION	 NATURAL RESOURCES	 LOCAL POLLUTION	 HEALTH
Business as usual (Fossil fuels, individual car)	-	-	-	-	-	-

Mitigation options

Diversification will be key







Worse Neutral Improved

Scenarios	ENERGY 	CO ₂ 	TRAFFIC CONGESTION 	NATURAL RESOURCES 	LOCAL POLLUTION 	HEALTH 
Business as usual (Fossil fuels, individual car)	-	-	-	-	-	-
Fossil free fuels (Bio-fuels, E-fuels,...)	-	+	-	=	-	-

Mitigation options

Diversification will be key

Worse Neutral Improved

Scenarios	 ENERGY	 CO ₂	 TRAFFIC CONGESTION	 NATURAL RESOURCES	 LOCAL POLLUTION	 HEALTH
Business as usual (Fossil fuels, individual car)	-	-	-	-	-	-
Fossil free fuels (Bio-fuels, E-fuels, ...)	-	+	-	=	-	-
Vehicle technologies (EVs, Hybrids, ...)	=	+	-	-	=	=

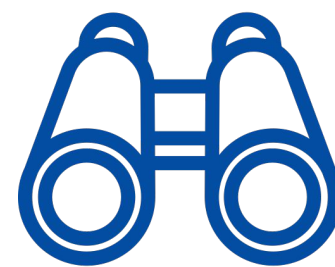
Mitigation options

Diversification will be key

Worse Neutral Improved

Scenarios	ENERGY	CO ₂	TRAFFIC CONGESTION	NATURAL RESOURCES	LOCAL POLLUTION	HEALTH
Business as usual (Fossil fuels, individual car)	-	-	-	-	-	-
Fossil free fuels (Bio-fuels, E-fuels, ...)	-	+	-	=	-	-
Vehicle technologies (EVs, Hybrids, ...)	=	+	-	-	=	=
Modal shifts (Public transport, micro and shared mobility, ...)	+	+	+	=	+	+

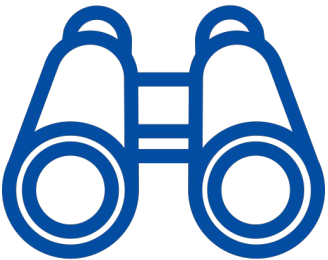
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Vision, ambition & solutions

Vision, ambition and solutions

Our vision



Energy sobriety is our best leverage for a successful energy transition

Resilient economy

Less sensitivity to strategic resources

Values CO2 reduction

Vision, ambition and solutions

Our mission



*Promote sustainable mobility for **all employees***

***Empower** individuals*

Vision, ambition and solutions

Ambition : Key levers to success !



Behavior changes with positive psychology

For a well adopted behavior and maintained for a long time



Tech for good

Leverage the **phone sensors data**, and couple it with **AI and physics based models**

Vision, ambition and solutions

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Vision, ambition and solutions



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1 In
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Vision, ambition and solutions

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Vision, ambition and solutions

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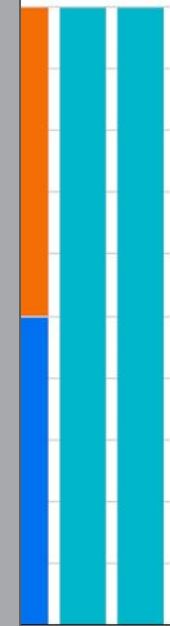
into the data.

63

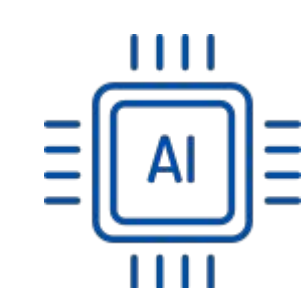
Trips/Commuter
20.67
↓ -23.5%

Modes/Commuter
2.83
↑ 28.8%

1 2 3 4 5 6



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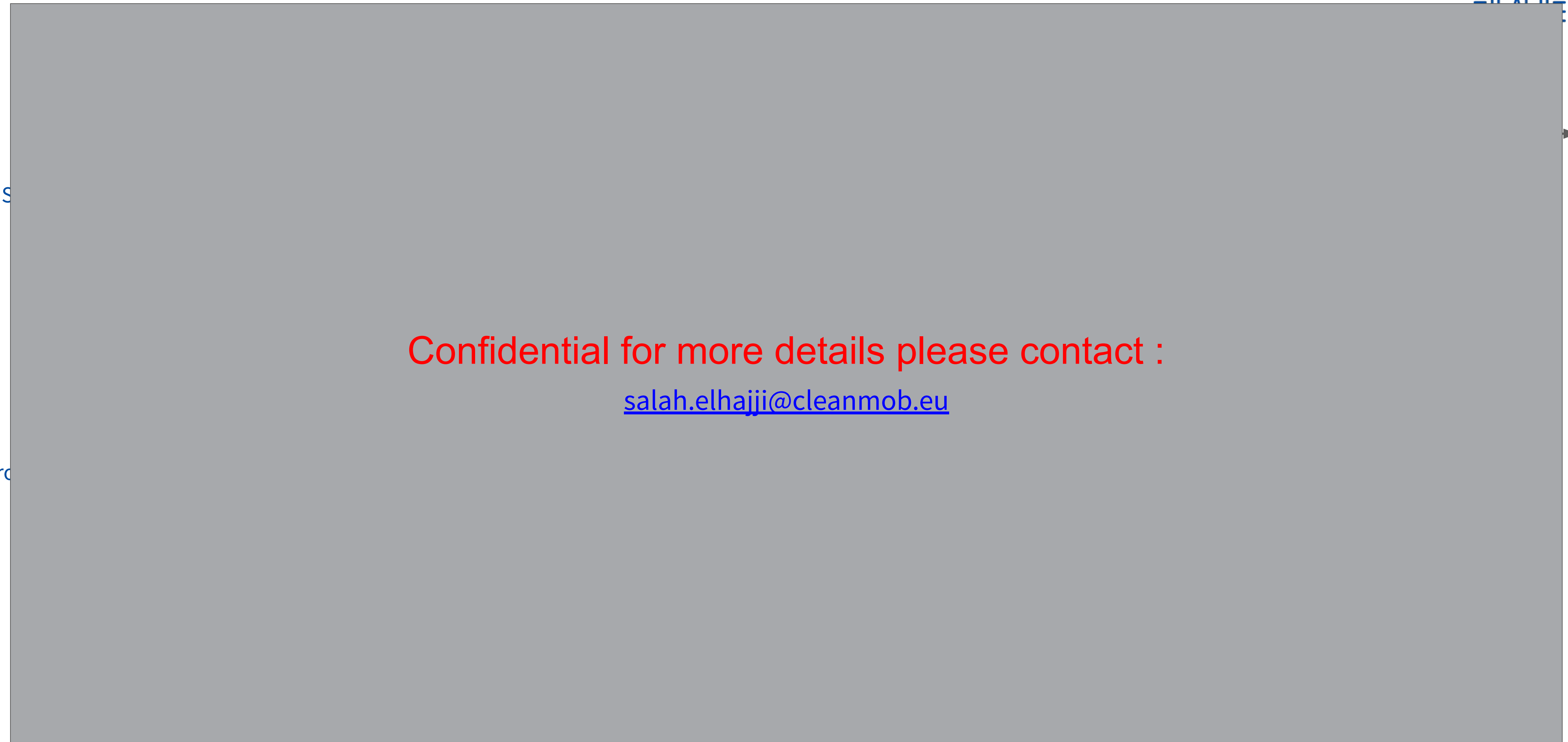
CleanMob under the hood

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CleanMob under the hood



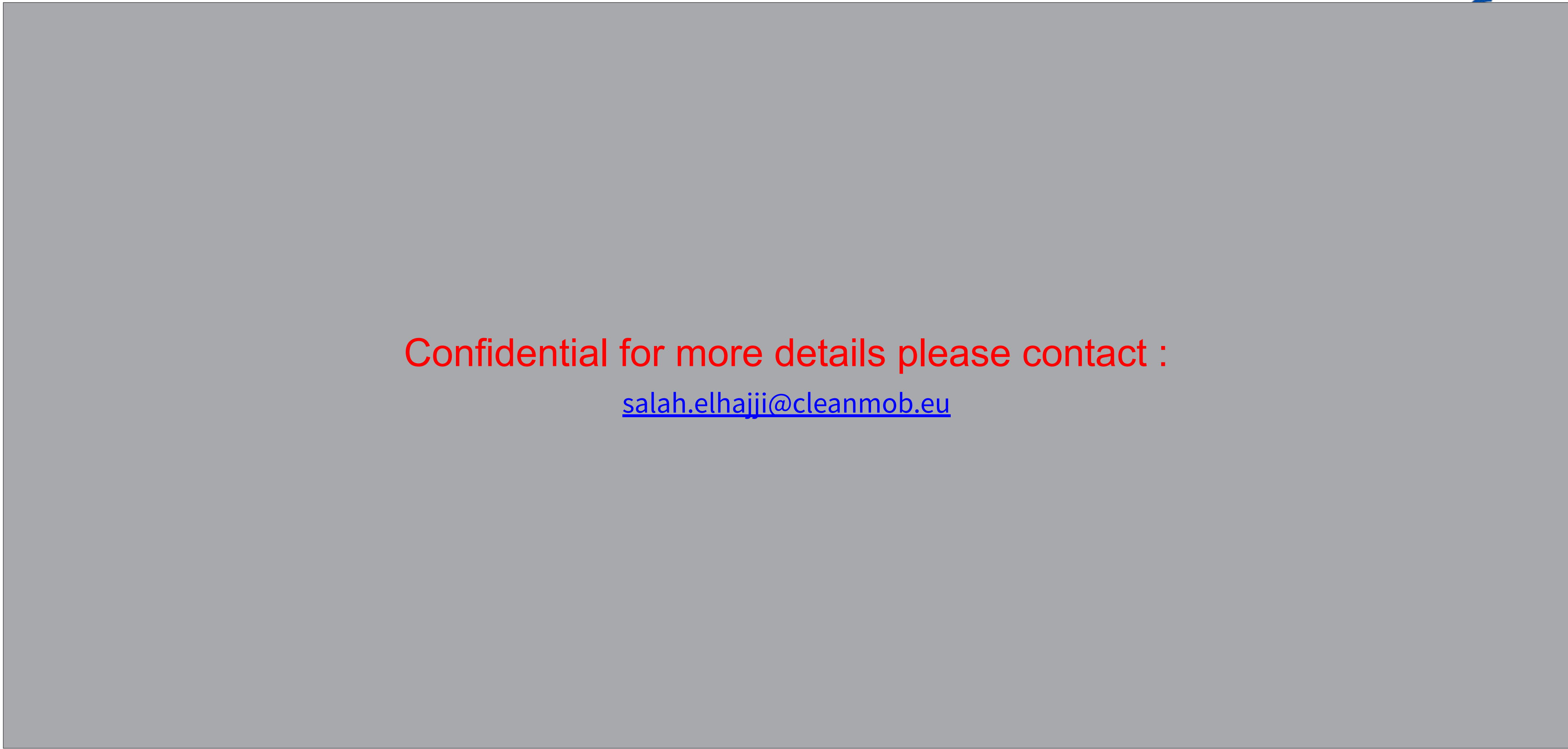
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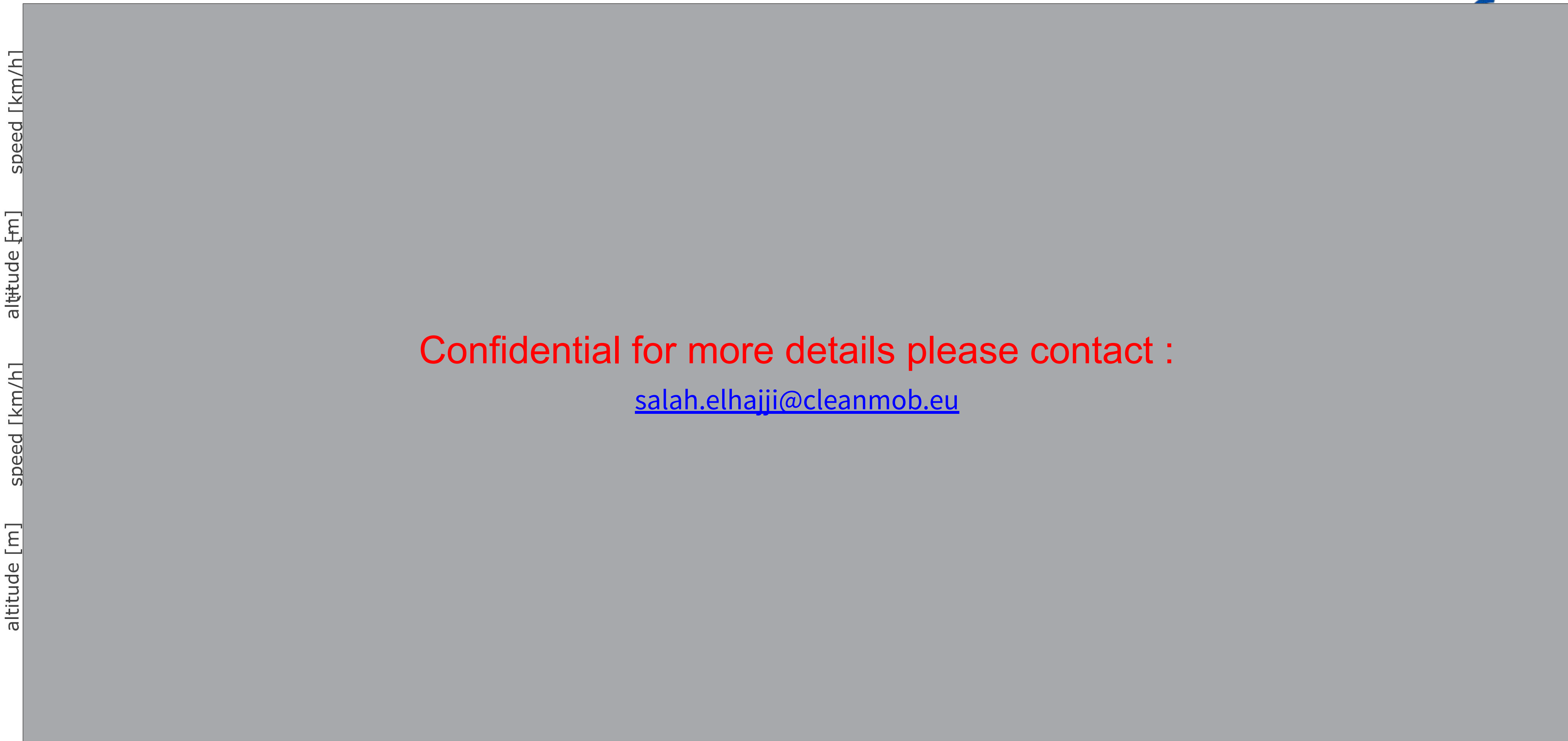
CleanMob under the hood



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Conclusion

Conclusion

We shape tomorrow's mobility today



Personal car is not the only option

We propose a holistic framework to optimize our mobility

You can measure accurate climate impact of your mobility using our app