

# SUSTAINABLE MOBILITY

by **THALYS** 

Contributing to a more sustainable  
transport system



Thalys avoids € 140,000,000 of costs for society, every year\*



In 2013, if all Thalys' clients had chosen to drive their car, to car pool, to take a coach or a plane, there would have been many drawbacks for society in general, through negative externalities – namely: higher CO<sub>2</sub> emissions, higher road congestion costs, more road accidents, higher energy import bill for states.

It translates into costs for society of several tens of millions of euros.

\* based on 2013 data

**Agnès Ogier**  
**CEO of Thalys**



In Europe, the transport sector is responsible for more than 20% of total CO<sub>2</sub> emissions and this share is rising as people's need for mobility is increasing. At a time when reducing our CO<sub>2</sub> emissions is becoming more crucial than ever before, our societies should encourage transport modes which satisfy a demand of efficient mobility while drastically reducing transport carbon footprint.

Beyond these necessary commitments for an ecological transition, travellers' attitudes are however decisive. Yet, the environmental impacts seldom represent a major criterion in mobility choices. In order to help citizens engage to responsible choices when travelling, Thalys thus carried out a study to evaluate and measure the various impacts of transports on society.

I expect these outcomes to foster dialogue on the role of rail transport in the long-term sustainable transport system we need to design. We call it Sustainable Mobility and we strive to put Thalys at the heart of this debate.

Thanks for travelling with us!



**Jean-Marc Jancovici**  
**Co-founder**  
**and partner of**  
**Carbone 4**



Why chose train over another transport mode ?

Train is par excellence the most lauded transport mode by environmental organisations and is hardly ever put in the dock in mobility debates – except for rare occasions when a new line is to be built, in which case nobody wants it in his/her own backyard.

Environmentally friendly it is; but to what extent?

We have had the pleasure to work with Thalys to go beyond common sense and actually quantify reality. This is how we could see that train's advantages are not limited to environment but extend much further for the collectivity, in terms of reduction of the energy debt, avoided congestion and better transport safety. In addition, Thalys offers its passengers a very generous share of quality time to use "for themselves" or for work.

Maybe this is the true reason why we have always loved train so much, even before climate change and oil scarcity were topical concepts?





## Thalys: the best combination of speed and useful time



Average public transport time to the departure / destination point



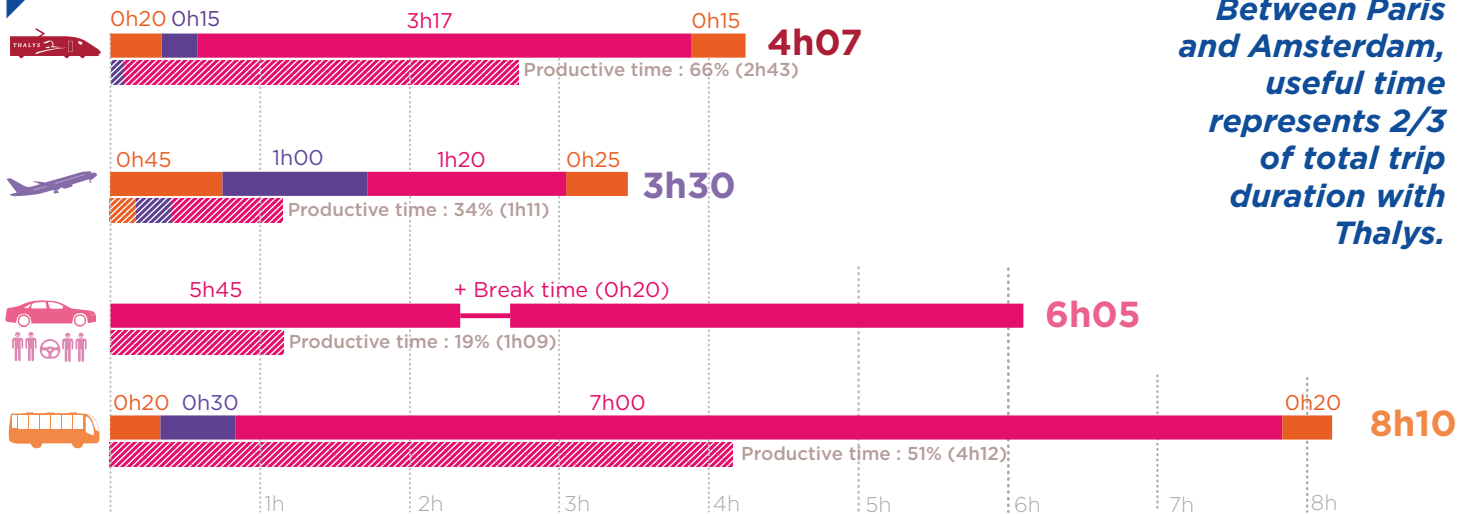
time before departure



travel time



total productive time



A fair means of comparing transportation modes in terms of trip duration requires the assessment of the overall door-to-door time between origin and destination. Except for the trip performed by car, the total trip duration is indeed equal to the sum of the average time to the departure point (airport, train or coach station), the waiting time at the departure point, the travel time itself and the average time to the destination point.

During the different phases of the journey, the quality of time depends a lot on travel conditions. A journey can then either make one gain time, or lose it. In this regard, considering the ability for a passenger to spend his/her time usefully during his/her trip, Thalys offers by far the best conditions.



## The real cost of a business trip: the cost of unproductive time

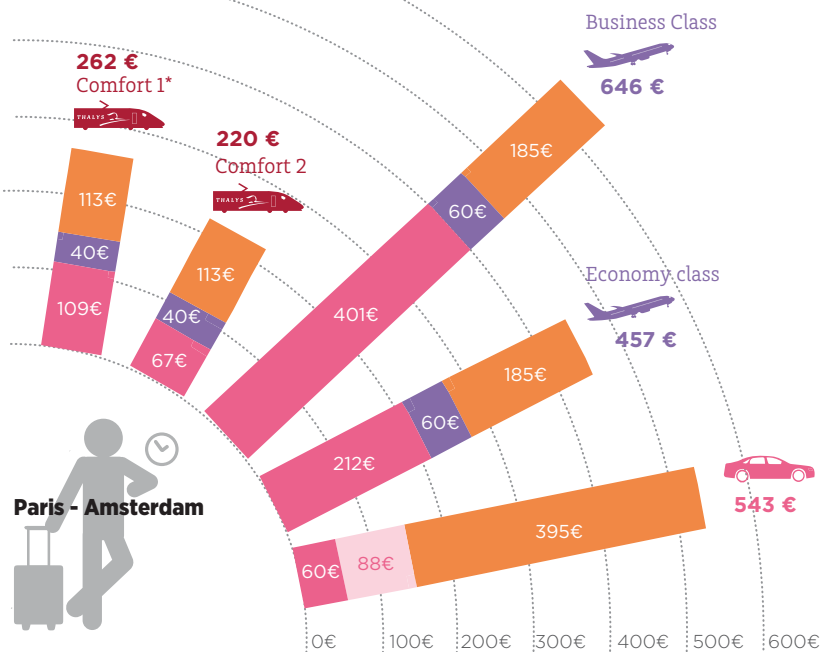
Ticket price / fuel + toll (car)

Car total cost

Pre and post routing

Cost of non-productive time (manager salary)

**On a return trip between Paris and Amsterdam, business people travelling with Thalys can save at least 400 € versus plane and 560 € versus car.**



Almost 40% of managers travelling with Thalys generally work on board. The trip is an opportunity to be as productive as if they were in their office. For the company, it means that a part of the time devoted to the trip is not lost, so that the real cost of the journey is reduced in comparison with no productive time at all. Actually, considering the average salary cost for a manager, non-productive time yields significant additional costs for the employer and can thus be considered as a negative externality.

The real cost of a business trip must then be assessed by adding not only the price of the ticket and the price of the taxi / public transport before departure and to destination, but also the cost of the business traveller's salary corresponding to the time share of the trip which is not productive.

The highly favorable working conditions provided by Thalys generate important savings for companies and strengthens its competitive advantage.

\* Thalys CF1 semi-flex price (in accordance with Thalys Business travellers main buying behaviours) (Anticipation D-15)

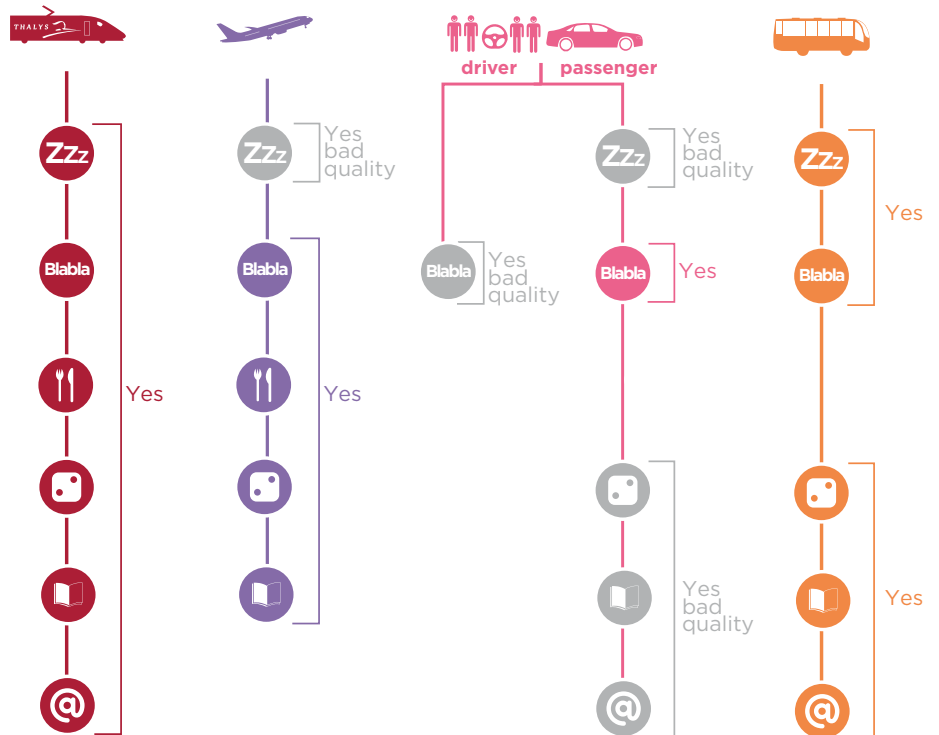


## Travel experience for leisure: when travelling with Thalys means freedom

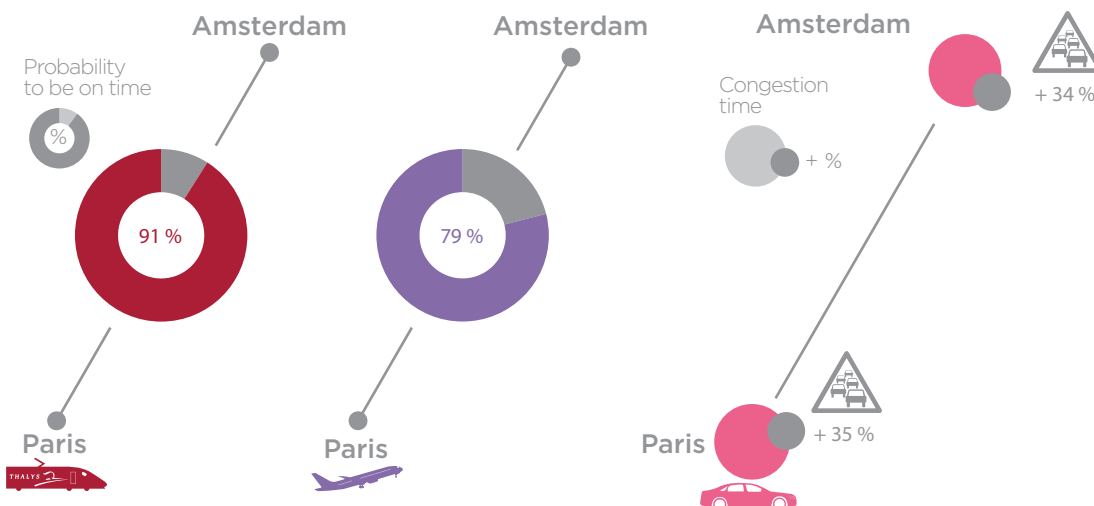
### **Quality time as the ability for travellers to spend their time the way they wish.**

For leisure travellers, time translates in qualitative terms and can be synonym of extra free time.

Thanks to the diversity of services provided, Thalys comes out as the transport mode providing the best quality time – on top of providing the highest share of quality time in the entire trip.



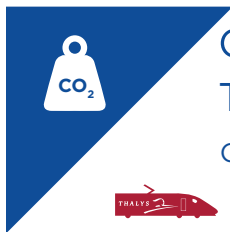
## Road congestion is a burden for societies: Thalys helps reduce it *not to mention that road congestion considerably increases uncertainty to be on time for car and car-pooling users.*



**Car traffic avoided  
thanks to Thalys  
corresponds to  
savings of about  
€50,000,000 of  
avoided road  
congestion.**

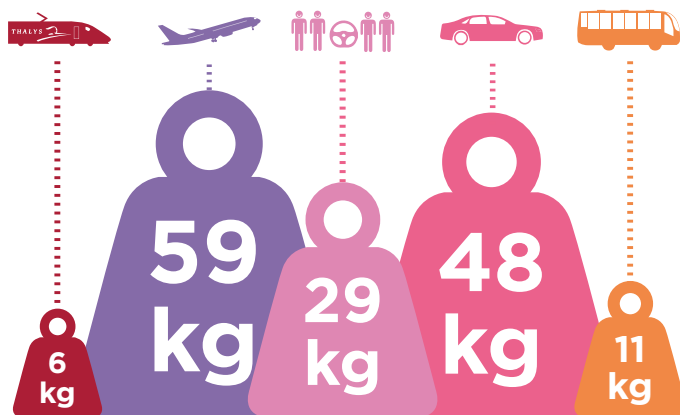
Rail and air transport punctuality is monitored very closely. 91% of Thalys trains arrive on time or with a delay lower than 15 minutes.

For road transport, most frequently found data reflect the average delays undergone by car users in the cities. These figures give a reasonably good idea of how much time drivers and car passengers spend, stuck in their cars, when in Paris, Amsterdam, Brussels or Cologne. The percentages here express the average additional time experienced by car users in those cities, compared with a free-flow situation (e.g. at night). These high figures demonstrate that the uncertainty on the duration of a road journey is very high: to be on time at arrival requires a wide security margin. Broadly speaking, considering free-flow journeys of around 30 minutes in each of those cities (which is a conservative assumption) implies minimum delays between 20 and 30 minutes to connect these cities by car.



## CO<sub>2</sub> emissions: Thalys is always the best option

CO<sub>2</sub> /passenger Paris <-> Amsterdam



### A passenger in Thalys emits at least :

- 8 times less than on plane
- 7 times less than on car
- 4 times less than with carpooling
- 1.5 times less than on coach

Even if we consider indirect CO<sub>2</sub> emissions related with infrastructure construction, energy transformation and transport, rolling stock manufacturing, Thalys remains less emissive than its competitors.

Taken its traction alone, Thalys avoided in 2013 circa 200,000 tonnes of CO<sub>2</sub>, which can be translated into roughly €10,000,000 of additional burden for our society, assuming a shadow price of carbon of 50 € / tCO<sub>2</sub>.

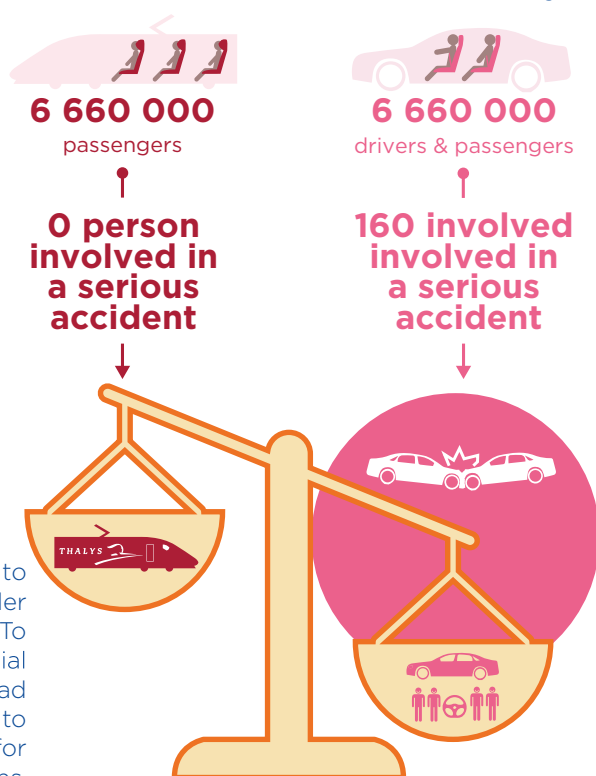


## Accidentology: Thalys contributes to a safer mobility

**Thanks to Thalys, society avoided in 2013 around €40,000,000 of social costs due to fatalities and injured people (needing hospitalization), due to additional accidents.**

When preferring Thalys to road transport, a traveller opts for a safer solution. To illustrate this reality, official international data on road accidents have been used to estimate average figures for fatalities and injured persons.

Assuming that all Thalys passengers in 2013 had chosen to travel by car instead, it would have generated an additional motorway traffic higher than 1,300,000,000 vehicle.km. Combining this figure with the official road accidents statistics (on motorways only) suggests that this additional traffic would have caused around 160 serious accidents.



ABOUT THALYS :

Thalys is the high-speed red train which links France, Belgium, Germany and the Netherlands, thus bringing together more than 45 million Europeans.

Paris-Brussels : 1h22 | Paris-Amsterdam : 3h17  
| Paris-Cologne : 3h14

For increased efficiency and fluidity, and even greater improvements in terms of customer service and satisfaction, Thalys became a full-function railway undertaking on 1 April 2015.

Thalys has created an exceptional and innovative service which is today considered a benchmark for railway undertakings worldwide and where its signature slogan "Welcome to our world" is synonymous with passenger comfort, a warm multilingual welcome, high quality catering, the Comfort 1 service package, new communication technologies, etc.



## Our next steps towards a "Sustainable Mobility"















This study shows how Thalys is part of the solutions against climate change. It also provides new key indicators to measure Thalys's CSR performance and will contribute to:








- reinforce pride and feeling of belonging for the Thalys teams,
- raise awareness for the clients and encourage them to make responsible transport choices,
- further the debate with stakeholders on the role of railways in the ecosystem of transports society needs for tomorrow.

So as to strengthen these elements on the long term, Thalys is implementing an ambitious and measurable action plan focusing on the reduction of its carbon footprint.

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## Summary for the main Thalys lines

<div>Time and useful time</div>					<div>CO<sub>2</sub> emissions</div>					<div>Punctuality</div>			
													
Paris	4h07	3h30	6h05	8h10	Paris	6kg	59kg	48kg	29kg	11kg	Paris	91%	79%
Amsterdam	66%	34%	19%	51%	Amsterdam						Amsterdam		
Paris	4h35	3h50	5h54	9h10	Paris	6kg	57kg	47kg	29kg	11kg	Paris	87%	90%
Cologne	67%	42%	19%	52%	Cologne						Cologne		
Paris	2h17		3h41	4h55	Paris	4kg	NA	29kg	18kg	7kg	Paris	95%	NA
Brussels	53%	NA	20%	46%	Brussels						Brussels		
Brussels	2h45		2h44	4h10	Brussels	2kg	NA	20kg	12kg	5kg	Brussels	NA	NA
Amsterdam	56%	NA	19%	43%	Amsterdam						Amsterdam		

<div>Real cost of a business trip</div>						<div>Congestion</div> <div>average additional congestion time compared to free-flow situation</div>				
	 Comfort 1	 Comfort 2	 Business Class	 Economy Class						
Paris	262€	220€	646€	457€	543€	Paris	+35%	→	+34%	Amsterdam
Amsterdam										
Paris	223€	200€	683€	388€	502€	Paris	+35%	→	+25%	Cologne
Brussels										
Brussels	179€	165€	NA	NA	320€	Paris	+35%	→	+19%	Brussels
Amsterdam										
Brussels	185€	165€	NA	NA	230€	Brussels	NA	→	NA	Amsterdam
Amsterdam										

\*NA = non-available

## A few words about our methodology

Accordingly with its track record and its reputation, Carbone 4 developed an assessment method based on transparency and up-to-date data from scientific and technical literature.

This work was performed in continuation of the « Travel Time Efficiency » study published with EPSA in 2012, going further in the investigation of sustainable mobility and quality / usefulness of time for travellers. The analysis was carried out from a number of well-identified sources.



On the one hand, the choice was made to focus on the criteria which are the main concerns of Thalys clients: trip duration, quality of time, price, punctuality, security. On the other hand, other items for which reliable information is available were added: CO<sub>2</sub>, time value, energy bill. For each criterion that was analysed, a specific method was used.

Which areas for progress for this approach?

Beyond usual comparison criteria between modes (such as trip duration), not all externalities were covered in this study: the rationale was to focus on the ones which are either the main concerns of Thalys clients or with accessible reliable information. Therefore, the analysis could be completed with the investigation of other impacts of Thalys: noise, land use, biodiversity, soil, air and water pollution, employment, trade balance (on top of its energy component), GDP, added value, etc.

Furthermore, irrespective of the sources, some methodological choices could be challenged. Our analysis show that the methodological modifications we identified marginally alter the present conclusions and results.

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Graphic design: © Kamisphère  
Responsible editor: Agnès Ogier, Thi Factory, Place Stéphanie 20, B-1050 Brussels.  
The information contained in this document is subject to change after publication.

