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INTRODUCTION

The Erasmus+ programme is one of the most successful European initiatives, providing great opportunities to study and live abroad for young Europeans since 1987. Its impact goes far beyond the actual mobility to represent a mark in students' lives, which will last for years to come.

In the last few years, the threat of climate change powered several changes in Europe, mainly through the European Green Deal. To address this, the Erasmus+ programme defined environmental sustainability as one of its priorities for the 2021-2027 period, which will thus promote and integrate elements from it all across the programme activities.

To the HEIs students all over Europe

If you are reading this, you are most likely considering or planning to go on Erasmus+ mobility yourself. This handbook will serve as a guide to show you the hows and the whys of choosing more sustainable means of transport to go and return from your mobility destination. You will have a clear perception of the travel habits of students, their impact on the environment, the importance of choosing more sustainable transport options, while also grasping the impact of the actual trip you are planning by using the CO2 footprint calculator. We will guide you through the process of planning a more sustainable trip, so that when the time comes to actually plan your journey, you know exactly what to do and where to research. Hopefully you will also get to see why travelling sustainably is an experience in itself that will certainly be a good story to tell!

The Erasmus Goes Green project

This Handbook for HEIs students was created under the Erasmus+ project "Erasmus Goes Green". This project aims at lowering the impact that the Erasmus+ programme has on the environment. Its main objective is to find solutions to reduce the transport-related carbon footprint of higher education students taking part in Erasmus mobility within Europe and that of staff participating in transnational project cooperation activities. For more information about the project, please take a look at its website.

What are mobility students' travel patterns?

Universities are described as change-makers and important contributors to sustainable development in most literature but **internationalisation comes along with environmental costs often overlooked** (Shields, 2019). This reflection led to a series of studies and research to **analyse student mobility patterns and ways of travel**.

For this purpose, in 2020, Eurail¹ carried out <u>a snapshot survey</u> amongst the members of the Erasmus Student Network to understand the travel behaviour of Erasmus+ students during their mobility. 1,967 former Erasmus+ participants from 20 different European countries replied and **the majority travelled by plane** to reach (75%) and return from (79%) their Erasmus destination (fig.1).

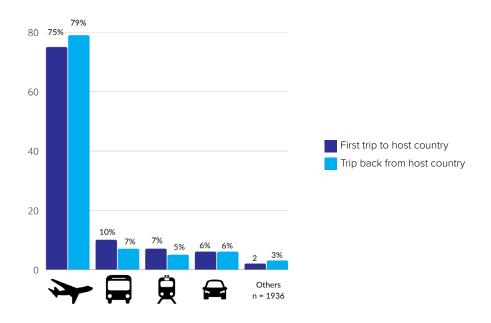


Fig. 1 - Mode of transport used for the main trip (single choice), Eurail research

Research studies (<u>Finnish National Agency for Education</u>, 2021; <u>Gabrielczak and Sokołowicz</u>, 2021) show that countries' prominence in sending students and consequently their environmental impact is uneven across Europe: Spain, France and Italy produced the

^{1 &}lt;u>Eurail Group</u> is the company responsible for the marketing and management of the Eurail and Interrail passes to connect 33 countries with one pass.

most flight emissions being the main hubs of the Erasmus+ mobility.

When it comes to transport, **the environmental impact of the Erasmus+ should also consider the leisure trips during the exchange**, which increase as the mobility period increases. In this case, buses (77%) and trains (59%) are the preferred options - probably because they explore locations in the host country or the neighbouring countries - although 50% of respondents used an aeroplane for one or more of their leisure trips (Fig. 2).

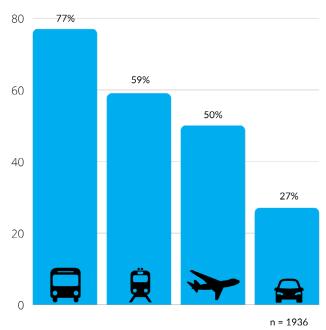


Fig. 2 - Modes of transporet used for leisure trips (multiple choice), Eurail research

Pushed by cheaper and faster solutions, only 15% of respondents considered environmental reasons when deciding about transport. The more recent <u>Green Erasmus research</u> on the habits of Erasmus Students confirmed this trend:

The biggest percentage of Erasmus students travelling to and from the mobility destination by plane prioritise price and time/distance factors. Only 5.5% (travel to mobility destination) and 6.3% (travel from the mobility destination) consider the ecological footprint of their mode of travel. It must be noted though that those who consider themselves "Very concerned" about climate change are less likely to use planes in comparison with those who consider themselves "Not concerned at all". (Diekmann and Karaiskos, 2022:26)

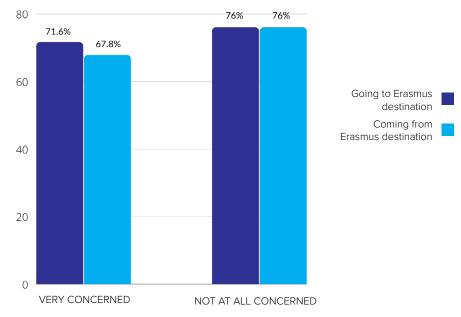


Fig. 3 - Use of plane and environmental concern, Green Erasmus research

However, the same research shows that the differences between the two groups are **not very significant** (Fig. 3). This leads to the conclusion that external factors such as cost affect students' travel choices and possibly hinder the development of more sustainable habits (Diekmann and Karaiskos, 2022:31).

When it comes to tourist trips during Erasmus mobility, train emerges as the most popular choice of transportation (28.3%) also in the Green Erasmus research, followed by bus (24.9%) and plane (22.3%).

What is the environmental impact of Erasmus+ mobility?

International student mobility is a global phenomenon that has grown considerably in the past two decades. The OECD statistics report that, in 2019, **6.1 million university** students worldwide had crossed a border to study, more than twice the number in 2007 (OECD Education at a Glance, 2021). Between 2014-2020, only within the Erasmus+ programme, more than **1.5 million student mobilities** (out of almost 1.9 million including HE staff) were successfully conducted (Gabrielczak and Sokołowicz, 2021)

- On average, a student mobility lasted 155 days (one semester) with an average distance of 1,374 km travelled;
- For staff, an average mobility lasted for 5 days (one working week) with 1,754 km travelled.

The estimation of the transport-related carbon footprint of those mobilities sits around **half** a **million tonnes**, and the **expectation is that these numbers increase** considerably in the 2021-2027 period. This goes against the wave of other European Union initiatives to reduce the environmental impact and it signals the need for change in how students and staff travel to their mobility destination and back.

On average, the CON footprint of student mobility by plane is between 100 and 200 KGs. By comparison, if the same student would use buses to get to their host city, the emissions would be reduced approximately by more than 50% (numbers calculated according to the baseline and alternative conversion factors mentioned in <u>Gabrielczak and Sokołowicz, 2021</u>, considering the average lenght of a university student trip mentioned above).



Why is it so important to avoid the plane?

According to Our World in Data, global aviation (including domestic and international; passenger and freight) accounts for 2.5% of global CO2 emissions. If aviation were a country, it would rank number six in the world in CO2 emissions, after Japan (Global Carbon Atlas). However, its overall contribution to climate change is higher (Ritchie, 2020). The fossil fuel burnt by aeroplanes not only releases CO2 but has non-CO2 effects due to nitrogen oxides (NOx), vapour trails and cloud formation triggered by the altitude at which aircraft operate (Transport&Environment).

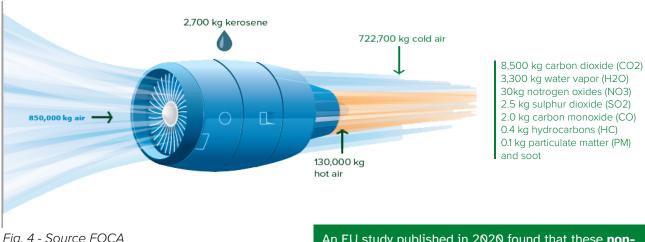


Fig. 4 - Source FOCA

An EU study published in 2020 found that these non-CO2 emissions contribute twice as much to global warming as aircraft CO2 and were responsible for two-thirds of aviation's climate impact in 2018

Lee et al. (2020) quantified the overall effect of aviation on global warming considering the CO2 and non-CO2 emissions' impact and calculate the "Radiative Forcing".

Radiative forcing measures the difference between incoming energy and the energy radiated back to space. If more energy is absorbed than radiated, the atmosphere becomes warmer.

With this new calculation in mind, aviation accounts for approximately 3.5% of warming (Ritchie, 2020).

Moreover, although "global passenger operations are becoming more fuel-efficient,

this is not happening fast enough to offset traffic growth" (Graver, Rutherford, Zheng,

2020).w This means that technology itself is not sufficient: we need to fly less. However, the data run in a different direction. Europe is the second largest passenger market, between USA (1st) and China (3rd), and intra-Europe routes increased by 35% in 2019 compared to 2013, the second highest intra-region increase.

Approximately 61% of passenger transport CO2 emissions in 2019 come from international aviation. If we considered the international flights from all EU member states², the flights from the EU to a non-EU country would put Europe as the top country in Passenger CO2 emissions from international operations.

When it comes to domestic flights, European Union would be the second-most emitting region, behind the United States. Domestic flights within each EU country are 22% of intra-EU flights (Graver, Rutherford, Zheng, 2020). These last figures are very striking if we think about the size and political mission of the EU which makes it the perfect candidate to improve and increase land transportation, firstly rail connection.

IF YOU
NEED TO
FLY,
KEEP
THIS IN
MIND

First class and business class pollute more. Why? They take up more floor area on an airplane than economy seating and thus can be apportioned a larger share of the fuel burn (Graver, Rutherford, Zheng, 2020).

Direct flights emit less. Why? According to a NASA report, landing and taking off operations are responsible for about 25% of airplane emissions.

The longer the distance, the more efficient flying becomes, since cruising requires less fuel than other stages of a flight.

How to calculate the CO₂ footprint of the different transport options

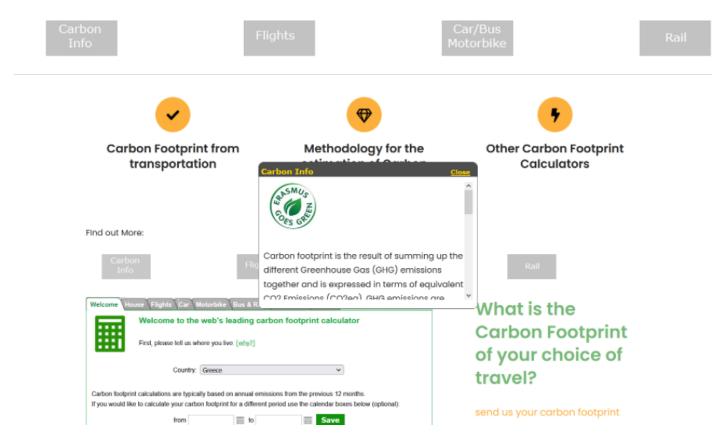
The Erasmus Goes Green Project (EGG) has created <u>a dedicated website</u> to help you understand, evaluate and decide which is the most environmentally friendly way to begin (and end) your Erasmus journey.

What's in it for you?

There are several things you can do to make the most of the calculator.

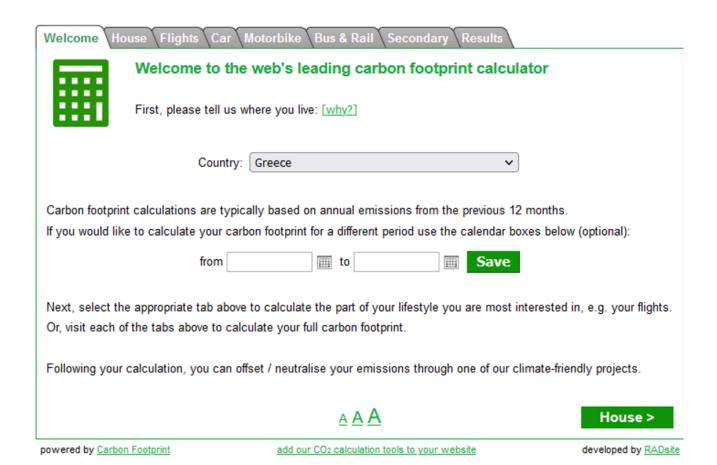
1. Discover how the EGG carbon footprint calculator works

The website includes all the needed information to help you understand what a carbon footprint is and how the carbon footprint is calculated. Above the footprint calculator there is a dedicated space with 4 buttons (carbon info, flights, car/bus/motorbike, rail). Each click leads to a pop-up window that contains the needed information to understand which factors affect the carbon footprint of each transportation included in the carbon footprint calculator.

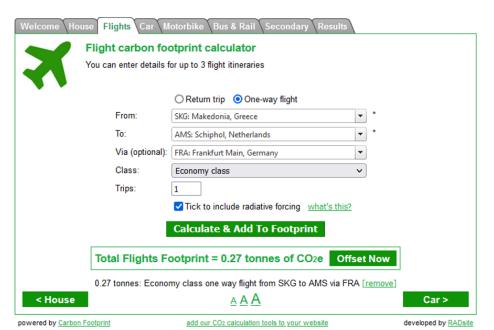


2. Explore the different options the tool gives you

Here is a snapshot of the calculator. This is where the "magic" happens. You simply click the respective tab and fill in the needed details. It is not necessary to fill in every tab you see in order to calculate your footprint. This allows you to freely explore the options you have to reach the destination of your choice. Are you the slow traveller who seeks to take the bus or train on your trip? Do you want to know how much CO2 you've saved compared to travelling by plane to your destination? We've got you covered.



Each tab requires specific information to be filled in with the minimum effort.



The "Flights" tab for instance, simply asks your starting and end-point airport, the passenger class and how many trips you will do.

| Welcome House | Flights Car Moto | rbike Bus & Rail Secondary Results | \ |
|-----------------------|---|---|---------------------|
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| | Mileage: | 1500 km 🔻 | |
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| < Flights | | AAA | Motorbike > |
| owered by Carbon Foot | print | add our CO2 calculation tools to your website | developed by RADsit |

The "car" tab and the "motorbike" require the mileage and the type of vehicle you travel in.

You can check that information on websites such as Google maps, or you can use the driving route simulator below on the same calculator's page.

| Welcome House Flights Car Motorbike Bus & Rail Secondary Results | | | | |
|--|--|----------------------|--|--|
| 0 | Motorbike carbon footprint calculator You can enter details for up to 2 motorbikes | | | |
| | Mileage: km - select type | | | |
| | Or enter efficiency: g/km | | | |
| | Calculate & Add To Footprint | | | |
| | Total Motorbike Footprint = 0.02 tonnes of CO2e Offset Now | | | |
| | 0.02 tonnes: 120 km on a large motorbike over 500cc [remove] | | | |
| < Car | <u> </u> | Bus & Rail > | | |
| powered by Carbon | Footprint add our CO2 calculation tools to your website | developed by RADsite | | |

| Welcome House Flights | Car Motorbike | Bus & Rail | Secondary R | esults | ^ |
|-----------------------------|---------------------------------------|--------------------|----------------------|-----------------|--------------------|
| | nsport carbor e for each type of p | | | alculate button | |
| | Bus: | | km v | | |
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| < Motorbike | | <u> </u> | | Se | condary > |
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The "Bus & Rail" tab simply requires the distance you will travel in km. You can either do an estimate of the KMs you will travel in each option, or you can fill in this step when you have already planned your trip and you know how much you will travel in each option.

For this step, you can also use <u>Rome2Rio</u> to have an estimate of the KMs - simply check the bus option and click on "See Details".

How can I decide the best way to travel?

To help you decide what is the most efficient way of travel, you can check the "Results" tab in the calculator, after you fill in the information:

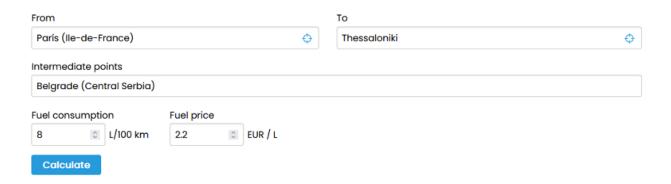


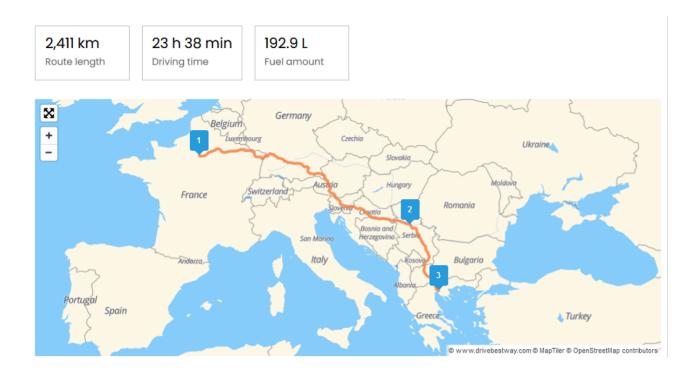
3. Calculating your driving route

Through a map that you will find below the <u>calculator</u>, you enter youwr starting point, your destination and your intermediate points (if any). The tool shows how long you have to travel by car or motorbike and which route you can take to reach your destination. Within the map, you can drag and drop new points to readjust the suggested route. Each action recalculates the route length and the driving time.

Furthermore, you can enter the fuel consumption of the vehicle you will use, in order to see how much fuel you will consume for the journey.

Calculate driving route





How can you help?

Have you decided the way you will travel to the destination of your choice? That is great!

Send us your carbon footprint by clicking "submit" after you have finished calculating it. You will be redirected to a simple form, that requires no personal data and that collects your choice of travel and your carbon footprint.

send us your carbon footprint

| Academic degree | |
|-----------------------------------|------|
| Undergraduate Student 💌 | |
| Departure city | |
| | |
| Destination city | |
| | |
| Traveling By | |
| ☐flight ☐car ☐bus ☐rail ☐motobike | |
| Carbon Footprint | |
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| Your message (optional) | |
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Why?

The purpose of the project is not only to allow you to understand what impact your Erasmus journey has on the environment but also to allow the Erasmus Goes Green consortium to monitor the carbon footprint of the students and staff using the CO2 footprint calculator. Your submission allows us to gather statistics of the people using the calculator and their departing and hosting cities.

How to organise a sustainable trip to your mobility destination?

In this section you will:

- Understand how to plan a sustainable trip to mobility.
- Know how and where to research the different transport options.
- Compare 3 plans to travel through different means of transport (train, bus and shared car) and suggested routes.

You have been awarded an Erasmus+ grant to study in another country. Now your focus is on starting to plan your life there and, of course, plan how to get there.

Below you will be guided through the process of organising the journey to your host city, and through the different tools that can help you select it and plan your journey. We will use a journey from Valencia, Spain to Frankfurt, Germany as our example and we will only focus on tips that support the reduction of the transport-related CO2 footprint. If you are also interested in understanding how to have more sustainable habits whilst you're on mobility as well, you can check the Green Erasmus portal.

In 2021, the Erasmus+ programme introduced the green top-up, an incentive to promote the use of more sustainable means of transport to reach the mobility destination.

This top-up awards 50 euros more and up to 4 days of additional individual support to cover travel days for a return trip, if relevant.

You are currently in sunny Valencia, Spain, and your exchange will lead you to travel to busy Frankfurt, Germany. You were already informed by the International Office of your home institution that there is a **Green top-up available**, which increases your travel grant allowance and awards you additional individual support of up to 4 days to cover the longer journey if you travel using low-emission means of transport, and you decided to use it. Now you want to consider all the possibilities in terms of means of transport, but even though you know exactly how to research different flights, for other options the process isn't as clear. So, what to do?

The first thing to take into consideration is the **environmental impact of your transport options**. Even if you are already planning to use more sustainable means of transport in your journey to your mobility destination, their carbon footprint is different and should be taken into consideration. Use the knowledge amassed through the other sections of this handbook and make sure to check the <u>CO2 calculator</u> to compare the CO2 footprint of the different means of transport to make a conscious choice.

Now jumping into the actual planning of your journey and the different options and connections available: there are several websites that can help you plan the best trip possible according to your requirements. You might already know you want to go by train, or you might still be open to consider different options. No matter what your goal is for your sustainable journey, there is something or someone that can support you:

Planning a train trip

The man in <u>seat 61</u> is one of the go-to places to plan your rail journey. It is a personal website which was started as a hobby by Mark Smith, a former rail industry worker. He decided to share his knowledge on the best routes, fares and times for rail journeys within Europe and sometimes even beyond. The website has a handmade feel - Mark created it as an autodidact - but the info is high level: you will not only see the different connections you can choose from but also check

the practicalities of travel and what you might expect on the journey.

Usually, the website presents you with several layover options as well (e.g.: for the Valencia-Frankfurt journey, there's an option of doing a layover in Barcelona, Paris or Marseille). This is particularly more interesting because the options it presents were mostly tested by him!

Just imagine this: you go to sleep in a certain city and you wake up in your final destination. If this spiked your interest, you can check if a night train could be a good fit for your travel. Find further information about the different types of night trains and their timetables.

Search engines to plan (and price) a trip

If you are still not sure which sustainable mode of transport you want to use, and if the price is an important factor when planning your trip, there are many websites that can support you. For example, <u>Omio</u> allows you to check the options available by plane, train and bus and shows you the price of each option. <u>Trainline</u> is another option that focuses on railways and buses, and only focusing on buses is <u>Flixbus</u>.

Some of these search engines allow you to **book your trip**. However, we recommend you to **compare the prices with the ones on the actual railway/bus company's website, to ensure you get the best possible deal.** Purchasing the tickets directly with the companies that run that particular route might also be a good option to safeguard your passenger rights - make sure you analyse this before actually booking.



Another option that might help you make the most of the journey would be a **road trip**, that might still be more sustainable than the plane. You can reach out to other students that are going to the same destination, organise a joint journey there and visit some cities on the way, or you can use a carpooling service like Blablacar, which allows you to connect with others that are planning the same route. This could also be an interesting choice if you would like to meet other people and make friends along the way.

If you are already travelling, a great idea would be to combine business with pleasure and use the opportunity to **get to know a different city on the way**. This is one of the great advantages of travelling sustainably: usually the train or bus stations are located in

the city centre, which allows you to have quick and easy access to different cities across Europe, and travelling by car gives you the freedom to reach any place you want.

You can even plan these little getaways in your itinerary, combining different trains (cf. Man in seat sixty-one description).

For example, several train and bus options to reach Frankfurt from Valencia require a layover in Paris. You can enjoy that time by visiting some Parisian landmarks or simply by sitting in a garden and enjoying a French croissant or a *pain au chocolat*. By the

time you reach Frankfurt to start your Erasmus mobility, you will have more stories to tell both your newly made friends and your old ones back home.

Since you're **spending the night in a different city**, you might consider choosing
accommodation options that have sustainability
in mind. <u>Book Different!</u> is an affiliate of
booking.com that allows you to see the CO2



footprint of your stay and also see if the accommodation you are thinking about choosing has any green label. You can also check <u>Hostelling International</u>, a network of hostels that advocate for sustainability.

Focusing now on **luggage**: if you're travelling by train you don't have many luggage restrictions, you just pack and go! However, take into consideration that you will still need to carry them to and from the train. Make sure you only take what is necessary, and check with your host institution if they collect some household items from previous exchange students that you will be able to use.

Since you're planning a layover, you might prefer to **leave your bags at the station**: usually, the main European train stations are equipped with lockers that you can rent for the day. If they are not available, you can also look for a private luggage depot that is available in numerous European cities.

What about the actual planning?

This handbook is packed with tips to travel sustainably, but if you haven't made a big journey through Europe, the actual planning might be a daunting task. But fear not - we are here to help you go through it! Below you will find the planning of the Valencia - Frankfurt journey by bus, train and shared car. In brackets, you will see the duration of each leg of the journey.

By train

Take the Euromed 1092 from Valencia Joaquín Sorolla to Barcelona - Sants

- During working days it operates from 7h10 to 17h10, with a frequency of 55 min.
- We suggest you to catch the one at 9h15, that arrives at 12h07 in Barcelona Sants (2h52m).

Take the TGV 9704 from Barcelona - Sants to Paris - Gare de Lyon

- There are usually 4 routes per day, but only 2 that are direct
- We suggest you to catch the one at 14h00, that arrives at 20h48 in Paris - Gare de Lyon (6h48m)

Spend the night and the next day in Paris and enjoy your croissant:)

Take the ICE 9555 from Paris - Gare de l'Est to Frankfurt (Main) Hbf

- There are other connections during the day, either direct or with 1 change. Check what's best for you
- We suggest you to catch the ICE 9555 at 17h10, that arrives at 20h59 in Frankfurt (Main) Hbf (3h49m)

By bus

Take the Alsa Bus from Valencia Bus Station to Barcelona Estación Nord

- There are several connections throughout the day, with different types of buses
- We suggest you to catch the 14h30 bus, which will arrive at 18h45 in Barcelona (4h15m)

Take the night Alsa Bus from Barcelona Nord to Paris, Quai de Bercy

 We suggest you to catch the 21h30 night bus, which will arrive at 11h35 on the following day (14h05m)

Enjoy your day in Paris

Take the night Flixbus from Paris (Bercy Seine) to Frankfurt central station

- We suggest you to catch the 23h10 bus, which will arrive at 7h55 of the following day (8h45)
- If you prefer to have less time in Paris, there are other connections that will arrive earlier in Frankfurt

If you're planning to travel by train or bus, you can also combine both and see which options are more favourable in each route, be it in price, time or personal preference.

By shared car

You found another student from Valencia who is also going on mobility to Frankfurt. One of you is keen on taking the car, and thus you embark on a road trip throughout Europe. To better enjoy the journey and reduce costs, you decided to plan your trip including stops in different cities, both to visit and to be able to find other people to share the ride with. This is our suggestions for your journey and stops:

- Valencia to Barcelona (around 3h40)
- Barcelona to Montpellier (around 3h30)
- Montpellier to Lyon (around 3h10)

Stay in Lyon for the night, so you can rest a bit and have more time to visit. On the following day, you can resume your trip well rested.

- Lyon to Strasbourg (around 4h50)
- Strasbourg, France to Frankfurt (around 2h30)

You can opt for the same route even if you decide to go by BlaBlaCar. BlaBlaCar might be an option for some legs of the journey that you do not find convenient by bus or train.

After all this planning and the thought you have put into your journey, the one thing you have to do is to take the first step and start your Erasmus experience a bit earlier, enjoying everything that Europe has to offer. Have a safe journey and make sure to take a lot of mental pictures (and actual photos) of your trip!



SUSTAINABLE TRAVEL STORIES

TESTIMONIES FROM STUDENTS



Lonci (26)

It is not that easy to travel sustainably but I guess the stopover options and the additional funds might encourage many. Not to forget the environmental benefits and the fun of travelling on land!

From Utrecht (the Netherlands) to Montpellier (France)

Home Institution: University of Utrecht

Host Institution: University of Montpellier

Travelled by train (on the way to) and train and bus (on the way back)

My study program is dedicated to sustainability and therefore I am highly engaged in this field. Within Europe, it is feasible to travel green, so that was not really a question for me to go green in my journey from Utrecht to Montpellier. I travelled by train and bus and, for the former, I used an **interrail ticket**, way cheaper than individual tickets. Long-distance buses are always cheaper, but whenever possible I prefer trains as they are more comfortable. I travelled alone, got myself a good book, and caught up on some university work. It was a nice way to get in the mood and cool down before and after the mobility. Thanks to this travel option, I could spend some time in Brussels and Paris during lay overs.

Walking and biking around was the perfect way to stretch my legs, enjoy the cities for a bit and grab some food. Was it challenging? No, it wasn't, but I am also experienced in such travels. I believe there is no need to fly within Europe, and travelling on the ground allows you to see nature, and cities throughout your journey. It can also be cheaper, depending on the amount of stuff that you bring. I personally love stopovers: even 4 hours in Paris is something that I am happy to have. Travelling can be also nice to get in the mood of mobility or close your experience.



Klara (21)

Lessen your carbon footprint! Bring your liquids with you!

From Budapest (Hungary) to Berlin (Germany)

Home Institution: Eötvös Loránd University

Host Institution: Academy for Cultural Diplomacy

Travelled by bus

Travelling **by bus** is not only more sustainable, but also cheap and very flexible if you need to reschedule your journey or to bring big luggage, which is not possible with the cheap flights I usually get. I travelled by myself, on a night bus. It was a peaceful and relaxing journey, I got to see landscapes in the countryside and cities, and witness the sunrise in Dresden. However, like any means of public transport, being in a relatively small space with a lot of people has its drawbacks. It can be annoying if there are loud passengers when you're trying to sleep, or people reclining their seats in your face. You can make sure you're comfortable by bringing headphones, booking two seats,

and keeping yourself entertained with a book or downloaded movies. In terms of planning, given the long distance, I suggest arriving one or two days before the start of the Erasmus period to properly adjust and rest.



Nassim (22)

You are able to see much more (interesting) places than if you go by plane. You do something good for nature and have a little adventure at the same time. And after all, it is like a ladder: you climb towards your destination country and you climb back to your home country.

From Osnabrück (Germany) to Istanbul (Turkey)

Home Institution: Paderborn University

Host Institution: Yeditepe University

Travelled by train and bus

I decided to travel by train and bus for a more sustainable and more adventurous experience. I checked on the internet if other people travelled to Istanbul without taking a plane and I picked the option that looked better to me. I travelled alone, visited some cities, and met friends where I stopped. The most annoying things were clearly the luggage, the change of currencies and the lack of internet data - a challenge itself nowadays so I decided to prove I could survive without it and I did not buy extra SIM cards. Because my luggage was kind of limited, I couldn't take winter and summer clothes with me. Therefore, I was freezing a bit on my first journey. Nevertheless, it was a positive experience:

I was able to see places for which I would usually need an extra vacation and I met cool people who sometimes showed me respect for my travel choice.



Gereon (21)

Turn your trip into a vacation!
Really get a feeling for the distances you cover rather than entering a metal tube and getting thrown out at your destination. Experience the landscapes, cultures, and people along the way. Begin your exchange even before you arrive at your destination!



From Bonn (Germany) to Reykjavík (Iceland)

Home Institution: University of Bonn

Host Institution: University of Iceland

Travelled by train, ferry, shared car

In my decision to travel green, the sustainability-aspect definitely played a role, but it was also about travelling more slowly and consciously and turning my journey into a small vacation in the process. The options to get to Iceland without flying are very limited: there is exactly one ferry connection from Denmark. Therefore, I had to figure out how to get to the ferry and from the ferry in Iceland to Reykjavík, the capital. I used the Deutsche Bahn journey planner to figure out a connection to the ferry port in Denmark and also booked it on that site. The ferry arrives at the side of the island opposite Reykjavík, and bus connections are possible but take a long time. I found several other Erasmus students via the internet and we planned a road trip together and they picked me up from the ferry.

Generally, there is good advice on how to plan your journey sustainably on the <u>Erasmus by Train</u> website. I planned my trip to the ferry in Denmark alone but I met travellers along the way and by the time I arrived in Iceland, I was with a small group of people. I shared with them incredible moments: three nights on the Faroe

Islands (amazing, would 100% recommend!) and camping along the Icelandic Ring Road with fellow Erasmus students. The journey was not always a bed of roses, it was also challenging at times: for example, I left my luggage in luggage storage in Hamburg but when I got back there before my train to Denmark, the facility was closed. I couldn't wait for it to reopen, as I would have missed my ferry.

After lots of thinking, I managed to find a solution and was able to catch the ferry after all. This anecdote showed me how resilient I can be, even in the face of losing all my stuff. Generally, I learned that things tend to work out, even on the very long and partly extremely stressful journey, that people are often happy to help, that we don't need all the material things we think we need, and that there are amazing people anywhere!

Kristina (22)

What would I say to convince people to travel sustainably?

I would talk about ethical values and mention the adventurous side of the experience.

From Cologne (Germany) to Istanbul (Turkey)

Home Institution: University of Cologne

Host Institution: Yeditepe University

Travelled by train and bus

I opted for land travel for sustainability reasons. I explored the train routes on rail.cc and booked bus tickets through Eurolines. I travelled alone but I had friendly small talks here and there. I travelled overnight to spend the day in Vienna and Sofia, where I stopped. On those occasions, I left my luggage once at the bus company's office and once at a guarded luggage depot to walk around relaxedly. My greatest challenges were finding the right bus station, waiting during my extremely long trip (around 48 hours) and delay because of traffic at the border, which made me miss my train connection. I overcame these challenges by keeping calm and being patient, calling my family and friend's from home and asking them for advice. Besides that, I enjoyed the adventure, landscapes, cities' sightseeing, being aware of the distance and the countries' differences, and savouring the good feeling of having travelled more sustainably.



Laura (26)

Overnight tickets are cheaper, and train connections are better in general: they run more often and are faster to reach bigger cities.

From Dresden (Germany) to Ljubljana (Slovenia)

Home Institution: Dresden University of Technology

Host Institution: University of Ljubljana

Travelled by train (on the way there) and bus (to come back home)

I decided to travel by train to carry more luggage and enjoy the landscape. On my way to Ljubljana, I booked my ticket via Deutsche Bahn, the German railway company app - the Omio app works too - but on my way back I bought the tickets on the web pages of the Slovenian and Austrian railways companies as it was cheaper and they offered special discounts. I travelled alone both times, but I got to know some other young travellers on vacation in the Alps and, on my way back, I stopped in Graz to visit a friend and stayed overnight.

I experienced some challenges: since there were construction works, trains could not reach Ljubljana and this was not communicated either on board or before the journey. It's difficult to find alternatives especially if you don't understand the language. Luckily, I found people with the same travel plan and they also helped me with the luggage. In retrospect, I would have preferred to travel overnight. A

12h trip during the day might be complicated: if you miss one train you might not reach your destination anymore.

I love travelling by train. I don't have to think too much about my luggage size and content. I can carry enough water and there is more space to stand up, walk and get inspired by nature rushing by in the window. We always want to go somewhere in the fastest possible way but I love taking my time to absorb the kilometres that separate my home country from my destination. It allows me to mentally prepare for what is ahead.



Luckily this alternative way of travelling appeared to be very comfortable and relaxed. Two things a lot of people are searching for while travelling.

From Wels (Austria) to Patras (Greece)

Home Institution: Technical University of Graz

Host Institution: University of Patras

Travelled by ferry and car

I am afraid of flying and I wanted to do something against climate change. I did some research on the internet to find alternative travel options. Also, I connect with locals who had already done this kind of trip for tips and expectations. I travelled with a friend I met during my first Erasmus as we have a similar mindset. Taking a long-distance ferry was new to me. We did not know if we should book a cabin or a place to sleep, bring food etc. In the end, we ended up being prepared for everything. The main benefit I got was the feeling of doing something good. Sharing my own story might encourage people to travel sustainably next time. I believe that small things make the difference and if everyone does a small part, we can maybe eventually win the fight against climate change.



Sophie (22)

I would make other people realize the environmental aspect of travelling sustainably and how beautiful it can be to start connecting with your destination country by observing the landscape, feeling the journey vibes, and meeting people at the stations or on the train.

From Innsbruck (Austria) to Perugia (Italy)

Home Institution: University of Innsbruck

Host Institution: University of Perugia

Travelled by train

Going by train was the easiest way to get to and from Perugia and I generally believe they are less complicated than flights. I booked my ticket through the information desk at the local stations and on the Trenitalia app on the way back. I suggest planning the trip at least one month in advance. I travelled alone both times, with no stopovers.

On the way home, after my Erasmus ended, I talked to an Italian woman for quite some time. I loved that moment because it gave me the last chance to interact in Italian, with Italians, in Italy. The biggest challenge was carrying the heavy baggage with me but I managed to somehow. Trains make you realize the distance, the change of country. I felt nostalgic when travelling through South Tyrol: the announcements of stations' names in Italian and German, and then only in German, and the landscape changing made me realize that my Erasmus was over.

Natasza (21)

Travelling with other people can be nice and funny and you can make friends for life during this kind of trip, especially when you have to spend long hours with them.

From Wrocław (Poland) to Maribor (Slovenia)

Home Institution: Wrocław University of Science and Technology

Host Institution: University of Maribor

Travelled by shared car

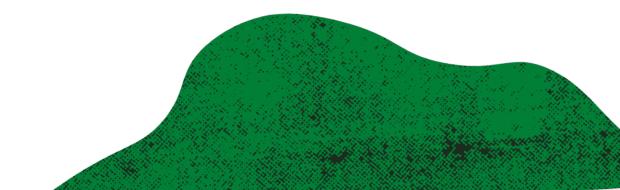
I was planning to reach Maribor by plane when it came out that my parents were going on holiday near my destination city, by car, so I joined them. The duration was, of course, long and challenging but thanks to this journey I realized that sharing a car is much better for our planet. Moreover, travelling sustainably can also be comfortable and fun as I found out during my Erasmus mobility when I travelled a lot by bus and train (never forget to plan in advance!).

CLOSING REMARKS

This handbook aimed to showcase why one needs to change travel habits and how a more sustainable journey to go and return from mobility can be planned. We hope many students will be encouraged to go off the beaten path of air travel to experience more of what Europe and sustainable travel has to offer, and little by little change the way a journey to and from an international student mobility is seen.

However, it is still important to highlight that a more structured change to more sustainable means of transport involves much more than individual change: the improvement of connections in Europe requires massive investments and collective efforts, from institutions and companies firstly - as individuals cannot be left alone nor can Europe count on personal goodwill to fight climate change.

Finally, we want to mention the work of Higher Education staff in promoting and advocating for better and greener mobility. If an institution includes in its processes and in the information provided to students some facts and guidelines about travelling sustainably to the mobility destination (such as this handbook), students will be one step further in the process of choosing more sustainable means of transport.



BIBLIOGRAPHY

Dardenne J., Airline contrails warm the planet twice as much as CO\(\mathbb{I}\), EU study finds, Transport & Environment, 2020

Diekmann A., Karaiskos G.,Research on the habits of Erasmus students: consumer, daily life, and travel habits of Erasmus students from the perspective of their environmental attitudes and beliefs, Green Erasmus project, 2022

ESN, Eurail, Students' mobility needs, Snapshot of a Eurail survey on participants in Erasmus+ Mobility Programmes

Finnish National Agency for Education, Feasibility study on compensation scenarios for the new and geener Erasmus+ Programme 2021–2027, 2021

Global Carbon Project, Global Carbon Atlas

Gabrielczak P., Sokołowicz E., *The carbon footprint of the Erasmus+ Programme 2014-2020, in Assessment of the transport-related carbon footprint of the Erasmus+ Programme*, Erasmus Goes Green project, 2021

Graver B., Rutherford D., Zheng S., CO\(\text{\textit{Z}}\) *Emissions from commercial aviation*: 2013, 2018, AND 2019, The International Council on Clean Transportation, 2020

Lee D.S. et al., The contribution of global aviation to anthropogenic climate forcing for 2000 to 2018, Atmospheric Environment, Volume 244, 2021

Ritchie H., Climate Change and Flying: What Share of Global CO\(\text{S}\) Emissions Come From Aviation?, Our World in Data, 2020

Schlossberg T., Flying Is Bad for the Planet. You Can Help Make It Better, The New York Times, 2017

Transport&Environment, What is aviation's contribution to climate change?

WEB BIBLIOGRAPHY

| SOURCE | YEAR | PAGE TITLE | LAST AC- CES | URL |
|--|---------------|--|-----------------|---------------------------------------|
| ESN International | 2022 | Green your Erasmus+ exchange | 09/09/2022 | https://www.gree- nerasmus.org/ |
| Department of Civil Engineering – Aristotle University of Thessaloniki | 2022 | Erasmus Goes Green IO2 – Development of a CO2 visualisation tool to reduce the Erasmus+ carbon footprint | 09/09/2022 | https://egg.civil. auth.gr/ |
| Mark Smith | 2001- 2022 | Train travel in the UK, Europe & Worldwide | 12/08/2022 | https://www.seat61. com/index.html |
| Trainline | 2022 | Trainline: Search, Compare & Buy Cheap Train Tickets | 18/08/2022 | https://www.thetra- inline.com/ |
| Flix SE | 2022 | Bus travel through Europe Flixbus | 14/08/2022 | https://global.flix- bus.com/ |
| BlaBlaCar | 2022 | Découvrez les bus BlaBlaCar (BlaBlaBus – Ouibus) | 17/08/2022 | https://www.blabla- car.fr/bus |
| Bookdifferent. com | 2022 | Bookdifferent.com – Quickly search in over 1 million accommodations! | 04/08/2022 | https://bookdiffe- rent.com/en/ |
| Hostelling International | 2022 | Hostels Worldwide – Discover the real hostel experience | 04/08/2022 | https://www.hihos- tels.com/ |