



BRIEFING - June 2024

UEFA Euro 2024: which country will champion climate?

Analysis of national teams' travel climate emissions

Introduction

The UEFA Euro 2024 will take place in Germany between the 14th of June and the 14th of July. For this new edition of the most popular European football event, UEFA (the Union of European Football Associations) has [committed](#) to reduce its environmental footprint by addressing the mobility by both supporters and the national teams participating. The biggest chunk of the tournament's emissions, 80%, comes from transport¹.

In this sense UEFA:

- incentivises supporters to travel to and within Germany by rail, thanks to an agreed [deal with Deutsche Bahn](#) (DB), the national railway company of Germany. The deal includes offering to match ticket holders cheap round-trip national train tickets, and subsidised InterRail pass for match ticket holders coming from outside of Germany;
- has geographically grouped the matches of the group stage close to each other to reduce travel time and the related emissions.

Emissions from aviation keep increasing and, in light of the mounting impacts of climate change, the United Nations IPCC's latest report says that emissions must be deeply and rapidly tackled in order to keep global warming below 1.5°C. The 6th of July 2023 was the busiest day for commercial aviation in history with 134,386 flights, and forecasts show that the number of passengers is set to double by 2050. Sustainable Aviation Fuels (SAFs) will not be able to decarbonise this large volume of air journeys in the near future. Thus, reducing flying by shifting to less emitting modes of transport like rail or coach is necessary to decarbonise the aviation sector. **UEFA has set the grounds to facilitate sustainable mobility and avoid flying during the tournament; it is now up to the teams and the fans to take on this challenge.**

Average emissions factors used in our analysis



Plane²

27 240

(g of CO₂e per Km per team)*



Coach³

777

(g of CO₂ per Km per team)



Train⁴

817

(g of CO₂ per Km per team)**

* We accounted for aviation's total climate impact including non-CO₂ by multiplying CO₂ emissions with a factor of 1.7 (global warming potential over 100 years, GWP100) to convert to total CO₂ equivalent emissions (CO₂e)⁵

** The train emission factor comes down to the carbon intensity of the German electricity grid (which is more carbon intensive as other EU countries). It will improve as renewables take over.

¹ Source: <https://www.oeko.de/en/news/press-releases/reducing-the-carbon-footprint-of-uefa-euro-2024>

² Source: Eurocontrol

³ Source: T&E's EU Transport Roadmap Model

⁴ Various sources. For further details on emissions factors, see the [methodological note](#)

⁵ [Lee et al., 2021](#), Atmospheric Environment (224). Data for contribution of global aviation to anthropogenic climate

In this briefing, we specifically looked at the national teams' travel climate footprint. National teams and players have the opportunity to lead by example, choosing to travel with more sustainable modes of transport like rail or coach instead of by plane. This choice would send a strong positive message to the sports community, including fans, and inspire them to shift to rail, the most sustainable mode of transport.

A joint action with the Travel Smart Campaign

'Travel Smart' is a global campaign led by Transport & Environment (T&E) within a coalition of partners across Europe, North America and Asia. It aims at reducing corporate air travel emissions by 50% or more from 2019 levels, as the most effective way to significantly reduce aviation's climate impacts in the present decade.

For the critical decade until 2030, the best way to reduce aviation emissions is to fly less, as the timing for scale-up of sustainable fuels and zero-emissions aircraft is currently post-2030, and offsetting has shown to be ineffective.

The shift from air to rail is an effective and feasible way to reduce corporate flying emissions.

T&E, together with the Travel Smart Campaign and 18 national organisations, sent official letters to 13 national football federations to ask them about their travel plans for the tournament. In these letters, sent in March, the organisations encouraged the teams to avoid flying and shifting to rail as the best way to reduce their footprint.

The following information about the choices and itineraries of some teams was gathered:

- To reach Germany - The Swiss national team will travel by bus from their country to their basecamp in Germany.
- Once in Germany:
 - The Portuguese national team will fly for at least one match of the group stage from their basecamp in Harsewinkel to Leipzig.
 - The German national team will not travel by plane for the group stage.
 - The Swiss team will travel by rail during the group phase

The briefing considers the information received from the German national team, whose commitment to not fly for part of the tournament, is showing the way for the group stage. Two scenarios were set up to compare the respective travel emissions. In the first scenario, *Air Travel* is the main mode of transport and it was considered that teams will mostly travel by plane. In the second scenario, called *Overall Switch from Air Travel to Rail or Road*, it was considered that teams will avoid planes for travel, except for trips considered "long" (typically, to go from their home country to their base camp).

In the analysis, four sets of travels were considered:

1. The emissions of all national teams to travel to Germany from their home country,
2. the emissions of all national teams for travels within Germany for the first phase,
3. The emissions for the trips to the final match of the six teams most likely to reach the final (Spain, France, England, Belgium, Italy and Germany)⁶,
4. the individual footprint of a lead player for each of these six teams mentioned above.

More detailed information is available in the [methodology annex](#).

Key take-aways

- Europe's leading national football teams competing in the Euro 2024 in Germany **could cut their travel emissions by nearly 60% if they avoided flying**.
- National teams from countries neighbouring Germany, where shifting from air to rail or road is possible and reasonable, can reduce their travel climate impact to go to their base camp by 94% to 98%.
- On average, **all national teams can reduce their emissions by 95%** for the group stage by shifting from air to rail or road.
- Over the month-long competition, **elite footballers** like Harry Kane and Kylian Mbappe have a chance to inspire millions of people to choose train over plane - otherwise they **will pollute seven to nine times more** through their transport emissions alone **than what the average person emits over a whole month**.

National football teams should seize the opportunity of the EURO2024 to champion sustainable mobility choices and reduce their travel emissions. They should join the efforts of UEFA to reduce the tournament emissions.

1. Plans by the German, Portuguese and Swiss teams to avoid flying

Among the 13 national teams that were contacted together with T&E partners, 3 teams - Portugal, Switzerland and Germany- shared some information on their travel plans to reduce flying. To travel to Germany, the Swiss team will not take a plane, and will travel by bus, saving 98% of emissions for this journey. For the EURO 2024 group phase, the Swiss team announced publicly that they would travel by rail⁷. By switching from air to rail during the group stage, the Swiss team will save up to 64 tonnes of CO₂e (decreasing their potential emissions by 96% for this phase). For its part, the Portuguese team will shift to road for 2 out of the 3 games, travelling by coach. The Portuguese Football Federation also expressed their intention to start

⁶ The 6 teams most likely to win the tournament were chosen based on odds from BetClic, bwin, and Winamax. The odds were checked on the 8th of May 2024.

⁷ <https://www.20min.ch/fr/story/nati-train-zuber-639612815807>

reporting travel emissions during this tournament, in order to be able to set reduction targets for next tournaments such as the World Cup.

Moreover, the host country, Germany, also shared its plans and commitment to reduce flying: in response to the [letter](#), the German federation explained that the conception of the tournament took into account the travel routes so that the German team could travel by bus or train for all three of their group matches. **By avoiding flying during the first stage of the competition⁸, the German team will reduce their climate impact by 98%**, saving up to approximately 77 tonnes of CO₂e. The German federation also communicated that the German team may have to travel by air if they qualified for the knockout stage. If they decided to apply the same policy for the whole competition, and completely avoid flying, they could save 87 tonnes of CO₂e during the knockout phase, reducing their total emissions for the competition by 97%, saving up to more than 160 tonnes of CO₂e (see table 1 and figure 1).

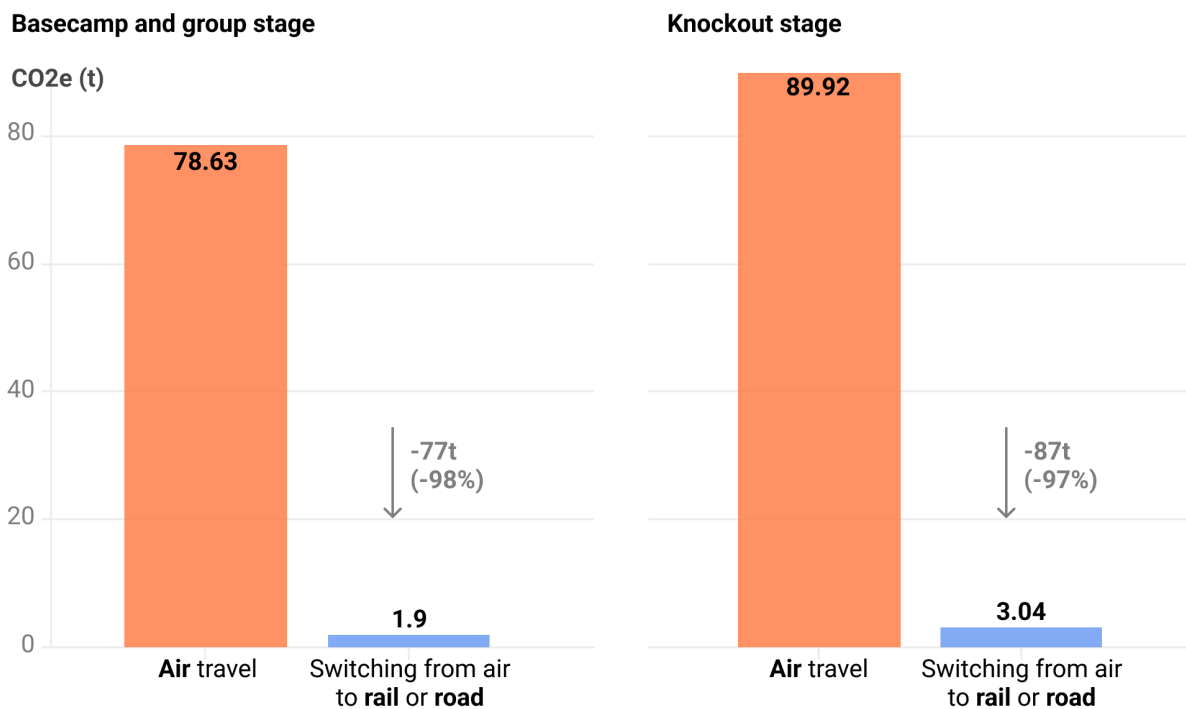
Team	Stage of the competition	Emissions savings by switching from air to rail or coach for the whole competition	
		(%)	(tonnes of CO ₂ e)
Germany	Joining base camp + Group Stage	98% ⁹	77
	Knockout stage	97%	87
	Total	97%	164

Table 1: Potential CO₂e emissions savings for German team following their commitment to avoid flying during the early stage of the competition, and during the knockout stage if they would continue to apply the same travel policy while heading to the final

⁸ Travelling from DFB headquarters in Frankfurt to German national team basecamp in Herzogenaurach, and then travelling from their base camp to match venues during the group stage.

⁹ This CO₂e reduction correspond to the commitment of Germany to not fly during the first half of the competition

Travel emissions from the German national team



Source: T&E analysis. Eurocontrol, T&E EU Transport Roadmap Model (EUTRM), ÖBB, Mobilité Wallonie, Eurostar, ADEME, Renfe, EEA, Umweltbundesamt



Figure 1: Potential CO₂e emissions savings for the German national team

2. What if other teams followed the example of the German team ?

2.1 Avoiding air travel during the first part of the competition

To get to Germany, several teams face a long journey from their headquarters to their base camp, so air travel is considered the most practical option. However, for several national teams, avoiding the use of planes seems conceivable¹⁰. This is the case, for instance, for Austria (8h30 by train, 7h30 by coach), Belgium (4h30 by train, 6h by coach), France (6h by train, 7h30 by coach) or Switzerland (4h by train, 3h40 by coach)¹¹.

If teams that could reasonably travel by train or coach to Germany - taking into account geography and rail connections -¹² and avoided flying to join their respective base camps, they would reduce CO₂e emissions by 25%, saving almost 270 tonnes of CO₂e. **This amount is**

¹⁰ Typically we considered that for going to home countries to base camp, trips under 8h by coach or train were reasonable.

¹¹ For travel time by train, we added to the train travel duration, the time needed to get from basecamp to the nearest train station, and from train station to the stadium by coach.

¹² The list of teams for which plane travel was considered to be avoidable is available on our [methodology](#).



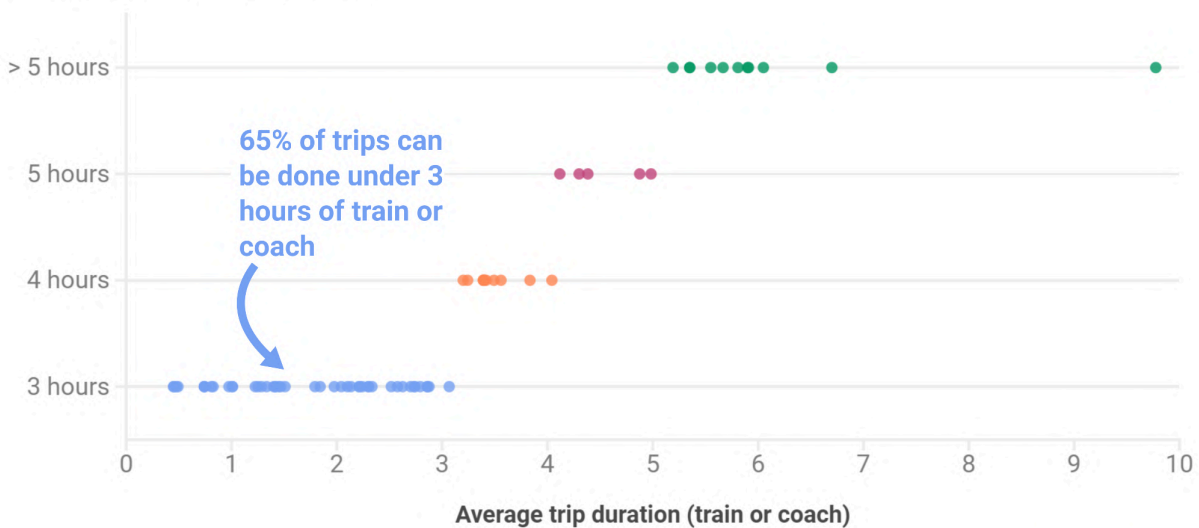
equivalent to 50 times the annual carbon footprint of an average European¹³, or equivalent to serving a beer to 240 000 people¹⁴.

According to the official communications, the UEFA organised the tournament so that several match venues would take place in the same region and thus avoid long-distance trips: 20 games will be played in the 4 stadiums of Cologne, Gelsenkirchen, Dortmund and Düsseldorf¹⁵, which are located in a 50 km radius. Several team base camps are also located near this area¹⁶. Furthermore, the trips that the teams must undertake during the group stage of the tournament last an average of less than 3 hours, by coach, or by train (65% of trips that teams have to travel during the group stage, can be done under 3 hours of coach or train, see figure 2). Therefore, a good amount of trips between the base camps and the match venues could be taken without resorting to air travel.

Travel duration for national teams during the UEFA Euro 2024 group stage

Trips under ● 3 hours ● 4 hours ● 5 hours ● > 5 hours

Average trip duration under x hours



Source: UEFA, Google Maps



Figure 2: Average trip duration by rail or coach for national teams during the group stage

If national teams decided to completely avoid planes for their journeys during the group stage, this will result in a 95% savings of CO₂e emissions for this phase of the competition, or more than 840 tonnes of CO₂e. This amount is equivalent to more than 150 times the annual carbon

¹³ The average annual CO₂ emissions per capita in Europe is 5.37 t. Source: [iea.org](https://www.iea.org)

¹⁴ ADEME - <https://impactco2.fr/comparateur>

¹⁵ UEFA Euro 2024 [match schedule](#)

¹⁶ [List of team basecamp](#) for the UEFA Euro 2024



footprint of an average European, or equivalent to the emissions needed to produce 750 000 beers¹⁷.

Team	Stage of the competition	Emissions savings by switching from air to rail or coach ¹⁸	
		(%)	(tonnes of CO ₂ e)
Austria	Joining base camp	98%	32
	Group stage	96%	30
Belgium	Joining base camp	97%	28
	Group stage	95%	23
Czechia	Joining base camp	95%	30
	Group stage	96%	23
England	Joining base camp	91%	28
	Group stage	96%	66
France	Joining base camp	96%	31
	Group stage	97%	40
Netherlands	Joining base camp	95%	24
	Group stage	93%	22
Poland	Joining base camp	94%	40
	Group stage	97%	42
Switzerland	Joining base camp	95%	18
	Group stage	96%	65

¹⁷ ADEME - <https://impactco2.fr/comparateur>

¹⁸ Except for long journeys while joining base camp in Germany.

All 24 teams	Joining base camp	25%	270
	Group stage	95%	841

Table 2: Potential CO₂e savings for a subset of national teams who could travel to Germany without flying

2.2 Switching from air to rail or road while heading to the final

Finally, we estimated the CO₂e emissions of teams that are the most likely to play the final of the Euro 2024¹⁹, considering that they would each finish first of their group after the group stage. For these teams (England, Germany, France, Spain, Portugal and Belgium), switching from air to rail or road would result in an average 96% reduction in CO₂e emissions, representing almost 90 tons of CO₂e savings (see table 3).

Team	Stage of the competition	Emissions savings by switching from air to rail or coach	
		(%)	(tonnes of CO ₂ e)
Belgium	Knockout stage	96%	106
England		96%	90
France		96%	72
Germany		97%	87
Portugal		96%	100
Spain		95%	85
Average of these 6 teams		96%	90

Table 3: Potential CO₂e savings for the 6 teams the most likely to win the tournament, considering that they would reach the finale.

2.3 Players' transport carbon footprints during the competition

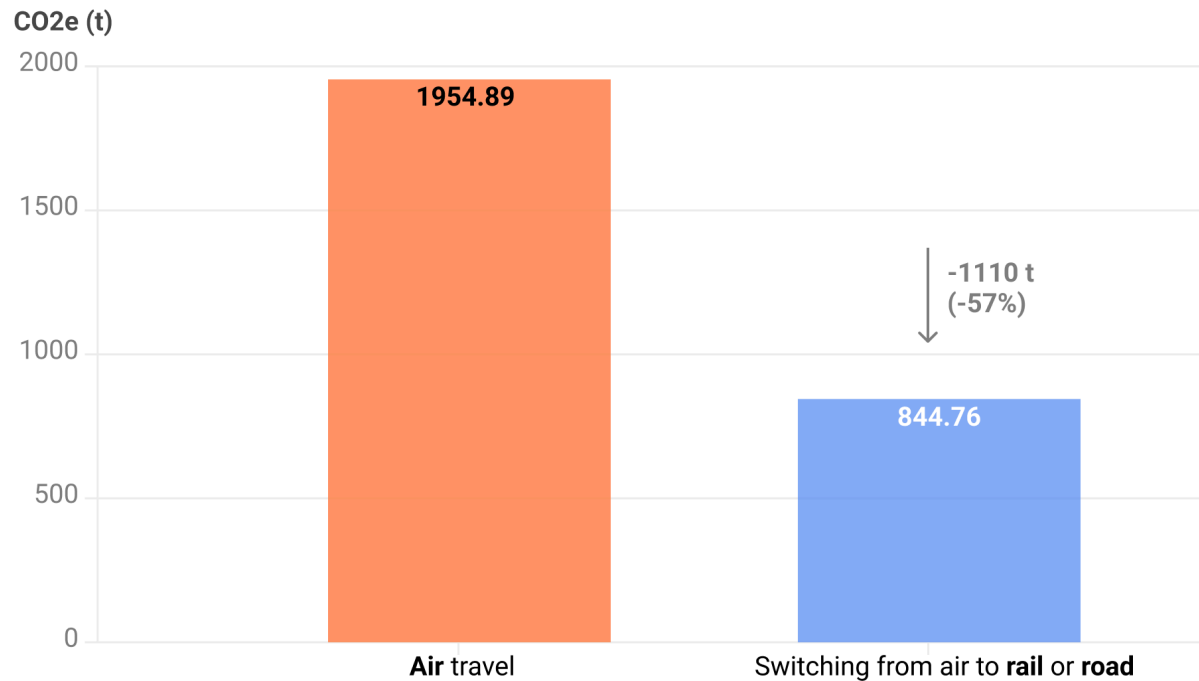
Overall, during the first stages of the competition - including both the trip from the home country to Germany, and the trip to the match venues during the group stage - the 24 teams could emit

¹⁹ The 6 teams most likely to win the tournament were chosen based on odds from BetClic, bwin, and Winamax. The odds were checked on the 8th of May 2024.

more than 1 900 tonnes of CO₂e if they rely on air travel. Switching from air to rail or coach would result in an emissions reduction of more than 1100 tonnes of CO₂e (57%, see figure 3), which represents more than **200 times the annual carbon footprint of an average European**, or equivalent to serving a beer to 980 000 people²⁰.

Overall travel emissions from the 24 national teams during the first stages of the competitions

Basecamp and group stage



Source: T&E analysis. Eurocontrol, T&E EU Transport Roadmap Model (EUTRM), ÖBB, Mobilité Wallonie, Eurostar, ADEME, Renfe, EEA, Umweltbundesamt



Figure 3: Potential average CO₂e savings for the 24 teams participating to the competition

On top of that, the transport carbon footprints of teams qualifying for the knockout phase will be even greater.

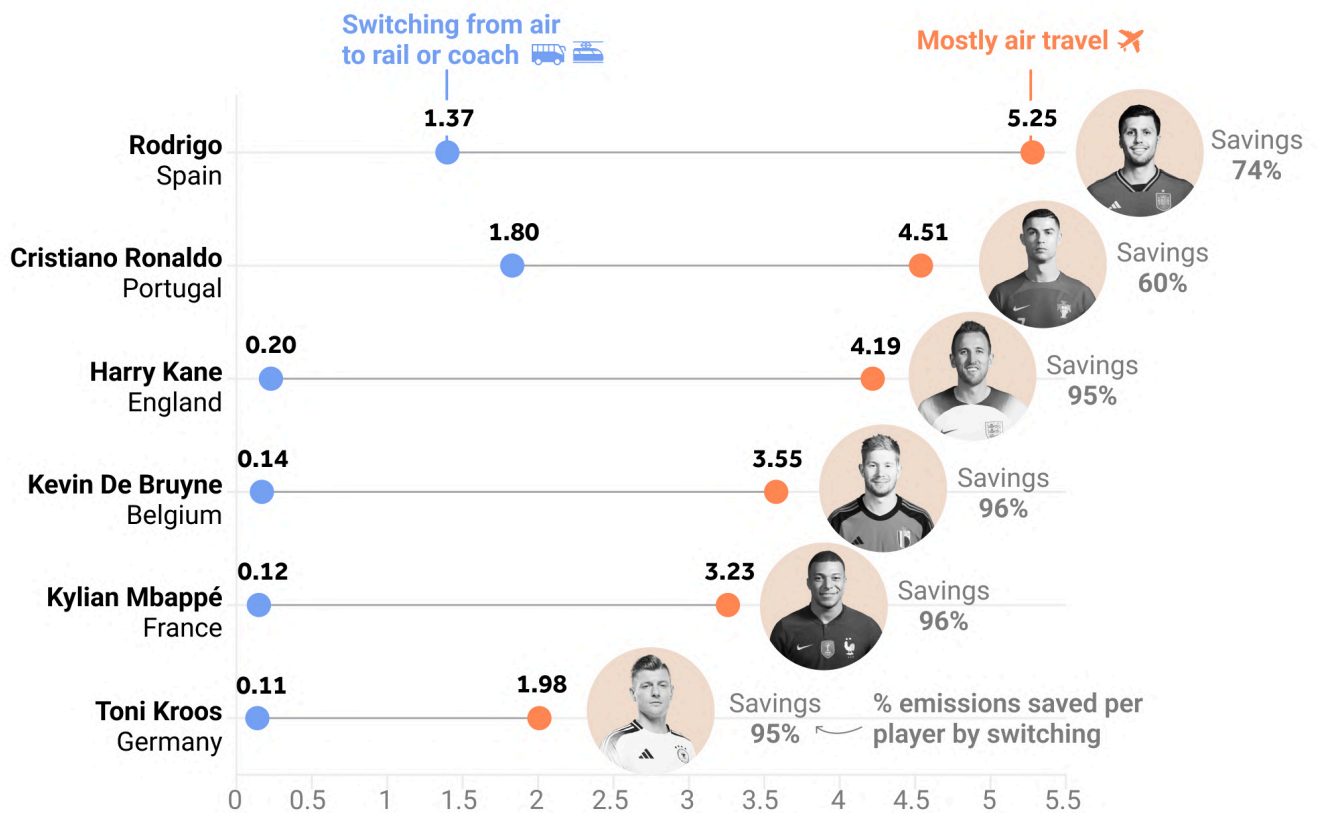
Table 4 shows the potential transport emissions per team that could reach the final of the competition, and their respective potential transport emissions for the whole competition, per team, and per player. All players have the same CO₂ emissions.

²⁰ ADEME - <https://impactco2.fr/comparateur>



This summer's Euros would be a lot greener for the continent's top footballers if the teams travelled by train or by coach instead of by plane

Transport emissions per player (t of CO2e) throughout the whole tournament



Source: T&E analysis. Eurocontrol, T&E EU Transport Roadmap Model (EUTRM), ÖBB, Mobilité Wallonie, Eurostar, ADEME, Renfe, EEA, Umweltbundesamt. FIFA, DFB. The calculation of emissions is based on the football team. All players have the same CO2e emissions



Figure 4: Potential carbon footprint per player, depending if they will travel mostly by air, or by rail or coach.



Team	Player	Mostly air travelling		Switching from air to rail or coach for the whole competition ²¹		% emissions save per player by switching from air to rail or coach
		Transport emissions per player (t of CO ₂ e)	Player index (% difference with the monthly average emissions of an European) ²²	Transport emissions per player (t of CO ₂ e)	Player index	
Germany	Toni Kroos	1.98	340%	0.11	-76%	95%
France	Kylian Mbappé	3.23	620%	0.12	-73%	96%
Belgium	Kevin De Bruyne	3.55	690%	0.14	-69%	96%
England	Harry Kane	4.19	840%	0.20	-56%	95%
Portugal	Cristiano Ronaldo	4.51	910%	1.80	302%	60%
Spain	Rodri	5.25	1070%	1.37	207%	74%

Table 4: Potential CO₂e emissions per player per team for the 6 teams for which odds of winning the tournament are the highest.

3. Conclusions

Football is the most popular sport in the world, so teams and players have the opportunity to lead by example, choosing to travel with more sustainable modes of transport like rail instead of by plane. This, together with the momentum created by the agreement signed by UEFA and the German rail company DB to promote the train, creates the perfect window of opportunity.

Sports tournaments like Euro 2024 tend to be big polluters due to the amount of professional athletes and fans that they mobilise. Organising the tournament to reduce the amount of travel, and ease the shifting to rail - the most sustainable mode of transport - while avoiding flying, has a great potential to reduce the footprint by the sports community.

This analysis shows that national football teams could **cut their travel emissions by nearly 60% if they avoided flying**. Moreover, national teams from countries neighbouring Germany, which rail and road connectivity is easier, can reduce their travel climate impact to go from their home

²¹ Except for long journeys while going to Germany

²² The average monthly CO₂ emissions per capita in Europe is 0.45 t. Source: [iea.org](https://www.iea.org)

countries to their base camp by 94% to 98%. On average, **all national teams can reduce their emissions by 95%** for the group stage by shifting from air to rail or road.

National football teams and its players should seize the opportunity of the EURO 2024 to champion sustainable mobility choices and reduce their travel emissions. The efforts made by UEFA and some of the teams to reduce the footprint of this EURO 2024 should not be an exception. This year's sustainability plan should be the first of many to come. Major sports tournaments that mobilise large crowds have a huge responsibility in their ability to lead by example and inspire the millions of fans, sponsors and institutions they mobilise.

Further information

Thomas Enriquez

Data analyst

Transport & Environment

thomas.enriquez@transportenvironment.org

Erin Vera

Travel Smart Campaigner

Transport & Environment

erin.vera@transportenvironment.org