International Journal of Engineering and Management Sciences (IJEMS) Vol. 7. (2022). No. 2
DOI: 10.21791/IJEMS.2022.2.12.

Was UEFA'S Goal of an Environmentally Friendly Euro 2020/21 a Success?

B. KOMEN[1], H. SKANDRANI[2], M. ARIUNTUYA[3], A. UNGVARAI[4]

[1]University of Debrecen, Faculty of Engineering, Department of Civil Engineering, boazkomen@gmail.com
[2]University of Debrecen, Faculty of Engineering, Department of Civil Engineering, hanenskandrani@gmail.com
[3]University of Debrecen, Faculty of Engineering, Department of Civil Engineering, ukala0412@gmail.com
[4]University of Debrecen, Faculty of Engineering, Department of Civil Engineering, ungvarai@eng.unideb.hu

Abstract

The football Euro 2020/21 has been said to be more environmentally friendly, as it was spread all over Europe, thus no new stadiums needed to be built. On the other hand, more travelling became necessary. How does these effects behave with each other? Was the attempt to reduce emissions successful?
This paper seeks to compare the goals for the UEFA 2020/21 for environmental friendliness and its success. A mixed research strategy was adopted in this paper where qualitative analysis was done on existing literature review and also quantitative approach where assumptions were drawn from literature review to estimate the extend of this environmental impact. This paper found that, UEFA's initial estimate of 425,000 tons carbon dioxide emission in travelling for Euro Cup 2020 was a bit higher than the actual amount of carbon emission from our calculation of 143,531 tons. What stands out is that its findings agree with UEFA's estimate that Euro Cup 2020 emission was lower than that of 2016 which emitted 517,000 tons of carbon dioxide for travelling. This gives a greater reason to conclude that UEFA met its goal of reducing carbon emission. The overall carbon dioxide emission in travelling and constructing stadiums was 1,275,988 tons in Euro Cup 2020 and 2,803,000 tons in Euro Cup 2016. This further affirms the overall carbon dioxide emission reduction by half in Euro Cup 2020 as compared to Euro 2016. From our findings, we can conclude that the Euro Cup 2020 indeed succeeded in reducing overall carbon dioxide emission by half. Despite the success, this paper views that the carbon emission is still high for a single event and hence there is room for reduction of carbon emission to lower levels as possible.

Keywords: UEFA, EURO 2020/21, carbon dioxide, EU, Greenhouse Gases,FIFA.

1. Introduction

1.1. Background Study

The Union of European Football Association (UEFA) was founded in 1954, 50 years after the creation of the world's governing body the Fédération Internationale de Football Association (FIFA) [1]. UEFA's core mission is to promote, protect and develop European football at every level of the game, promote

DOI: 10.21791/IJEMS.2022.2.12.

the principles of unity and solidarity, and to deal with all questions relating to European football and football is their raison d'être -the most important thing [2].

UEFA which is the administrative body for the association of football in Europe and parts of Asia; one of the six confederations of FIFA initially comprised of 25 associations at its inception but its members doubled in early 1990's and currently it consists of 55 national association members [3]. This is attributed to the two notable key developments which included: principally the changes in the former USSR, Yugoslavia and Czechoslovakia and the formation of European Union. Both of the above two developments have had a significant impact on European football – impacting on many of the other key trends [2]. For example, the expansion of UEFA membership has led to the restructuring of UEFA competitions.

The UEFA European Football Championship, formerly European championship, is a quadrennial tournament and has been held every four years since 1960 except for 2020 when it was postponed to 2021 due to the Covid-19 pandemic. It kept the name Euro 2020 hence the name Euro 2020/2021 where finally Italy emerged the winner in a penalty shootout 3-2 against England [4]. Notwithstanding this, the 2020/21 Euro Cup was unique in its own way aside from being disrupted by the Covid-19 pandemic which forms a greater background study to this paper.

1.2. Statement of Problem: Euro Cup 2020/21

The 16th Edition of UEFA European championship was set to be a tournament like non other before it. Euro 2020 was postponed – during a year in which the Covid-19 pandemic constrained sporting events across the world – but the contest was held in June 2021 with limited audience capacity. To add on its uniqueness, the championship took place across 11 European countries instead of the usual one or two thanks to the UEFA chief Michael Platini who defended it as a "romantic" one-off event to celebrate the 60th anniversary of the competition. Further, in this championship more attention was paid on the climate impact of spectator sports [5]. This is in bid to achieve one of its sustainability goals as outlined in its UEFA strategy 2019-2024 where the fifth pillar is responsibility to ensure it aligns its goals to United Nations Sustainability goals [6]. This also was part of the efforts by EU to achieve the European Climate law that seeks to reduce by at least 55% and reach net of Zero Green House Gas emission by 2050 [5].

The Euro cup has been said to be more environmentally friendly, as it was spread all over Europe, thus no new stadiums needed to be built. On the other hand, more travelling was necessary. How does these effects behave with each other? Was the attempt to reduce emissions successful? This paper seeks to study the goals for the Euro 2020/21 for environmental friendliness and its success.

2. Literature Review

2.1. Goals of Euro cup 2020

The aim of Euro Cup is said to be more environmentally friendly, by its aim of reducing the emission of carbon dioxide CO_2 through some investment in renewable energy projects. The UEFA had promised to plant 50000 trees in the host countries of the Euro cup in an attempt to leave a good print of the

DOI: 10.21791/IJEMS.2022.2.12.

competition since the tournaments were going to be held across 11 countries where there were fewer people traveling abroad to attend matches. Taking the Germany's Bundesliga as an example which uses only bioplastic cups, adding to that they did maintain 100% green energy across the club. On the other side, solar panels, electric cars, water recycling, charging points, organic pitch, and an entirely vegan menu for players and fans are all sustainability measures taken by Forest Green Rovers from England [7].

During the tournament, it was estimated that 405,000 tons of carbon dioxide were emitted by fans and UEFA employees while traveling to the tournament, hence the need of UEFA to offset this amount. As a part of the process of offsetting the hundreds of thousands of tons of carbon, UEFA supports the activities of gold standard carbon reduction by investing in these projects which will be of benefit to local community and to the planet by reducing the fuel use [8].

Since 2018 the Life tackle started working on environmental management by exchanging information between the countries and testing them in the stadiums which will help reduce the damage [9].

2.2. Impacts of UEFA championship on environment

To determine the impacts of the UEFA Championship on the environment, the first thing is to understand the energy consumption of a football stadium. A big stadium may consume about 10,000 megawatt-hours (MWh) of electricity per year, and up to 25,000 KWh during a 90-minute match. [5] In the chart below, energy consumption of a stadium is divided into categories during a match.

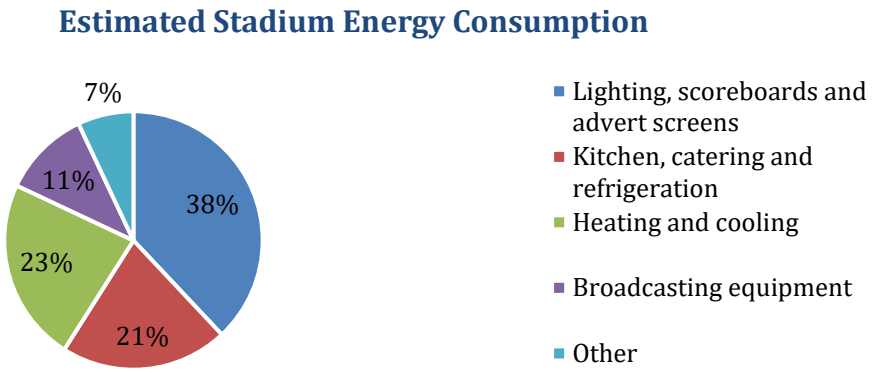

Figure 1: Estimated Stadium Energy Consumption

Source of data: [10]

For EURO 2016, there were 4 new stadiums built, and 5 stadiums renovated. This process emitted 2.3 million tons of carbon dioxide. [11] One stadium covers around 4.5 hectares area on average, so for EURO 2016, over 18 hectares area were transformed into giant buildings. Even if the area was not totally empty, but occupied by some buildings, it will even add more CO_2 emissions by demolishing existing buildings. But it is not only about the stadiums, but also other engineering infrastructures, such as roads, water and sewage systems, and electrical system.

Also, the transportation of the spectators is the second largest source of environmental impact. For example, during the EURO 2016, transport to/from and within France represents 96% of spectators' carbon footprint. That was a total of 517,000 tons of CO_2 emission. The chart in figure 2. below shows

DOI: 10.21791/IJEMS.2022.2.12.

the percentage of carbon dioxide by the source during the EURO 2016. In summary, the UEFA EURO 2016 emitted 2,825,000 tons of CO_2.

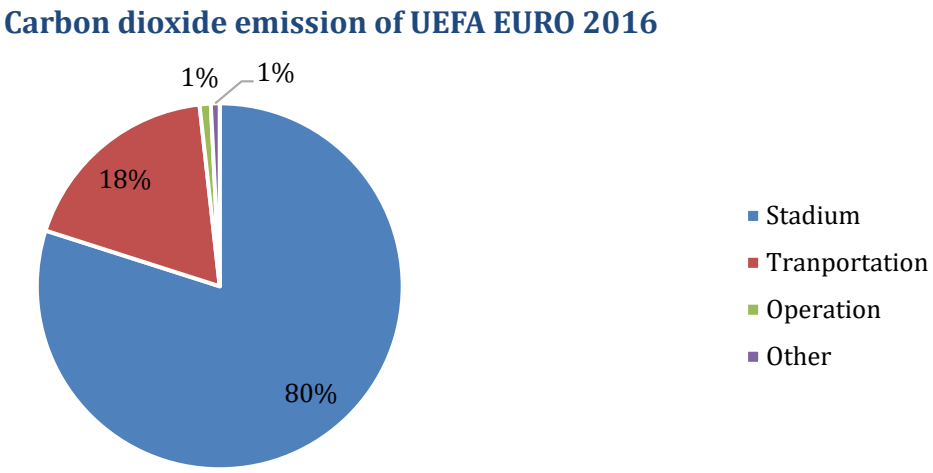

Figure 2 : Carbon dioxide emission of UEFA 2016

Source of data: [11]

3. Analysis and Discussions

3.1. Methodology and data collection

The research strategy adopted in this study was both quantitative and qualitative. The combination of both qualitive and quantitative strategy is known as mixed research strategy which enhances completeness and generates a comprehensive picture (Bryman, 2004). In this paper a qualitative analysis was done on existing literature review and also a quantitative approach where assumptions were drawn from literature review to estimate the extent of this environmental impact.

3.2. Estimated impact of Euro cup 2020 on environment

Table 1: Allowed capacity of stadiums for Euro 2020/21 due to Covid-19 pandemic

City	Venue	Standard capacity	Capacity Due to Covid-19 (Group Stage)	Capacity Due to Covid-19 (Round 16)	Approximate % of allowed capacity
Amsterdam	Johan Cruyff Arena	54,990	16,000	16,000.00	33%
Baku	Olympic Stadium	68,700	34,350	34,350.00	50%
Bucharest	Arena Naţională	55,600	13,000	25,000.00	25%-50%
Budapest	Puskás Aréna	67,215	67,215	67,215.00	100%

DOI: 10.21791/IJEMS.2022.2.12.

Copenhagen	Parken Stadium	38,065	15,900	25,000.00	40%-67%
Glasgow	Hampden Park	51,866	12,000	12,000.00	25%
London	Wembley Stadium	90,000	22,500	60,000.00	25%-67%
Munich	Allianz Arena	70,000	14,000	14,000.00	20%
Rome	Stadio Olimpico	70,634	17,569	17,659.00	25%
Saint Petersburg	Krestovsky Stadium	68,134	34,067	34,067.00	50%
Seville	Estadio de La Cartuja	60,000	18,000	18,000.00	30%

Source: Modified table from [12]

The continuing global pandemic forced some drastic changes in plans in Euro 2020 with several cities losing a chance to host the competition after being unable to guarantee the entrance of fans into their stadiums. Following a series of negotiations, UEFA was able to pick 11 cities which promised to allow the supporters the chance to enjoy the special occasion with restriction on allowed capacity due to the immense impact of Covid-19 [13]. This can be clearly seen from Table 1 above. From above data, it influences our calculations as we will not estimate the impact based on normal case scenario, instead the restricted spectator numbers due to Covid-19.

3.2.1. Emissions from different Modes of transport

For estimating the amount of Green House Gas emissions for Euro Cup 2020/21, there is a great need for us to understand the amount of emissions as a result of different modes of transport. Figure 3 below highlights the amount of Carbon dioxide (CO_2) emitted by the various modes of transport. This will aid immensely in estimation of Carbon dioxide emission in Euro Cup 2020.

DOI: 10.21791/IJEMS.2022.2.12.

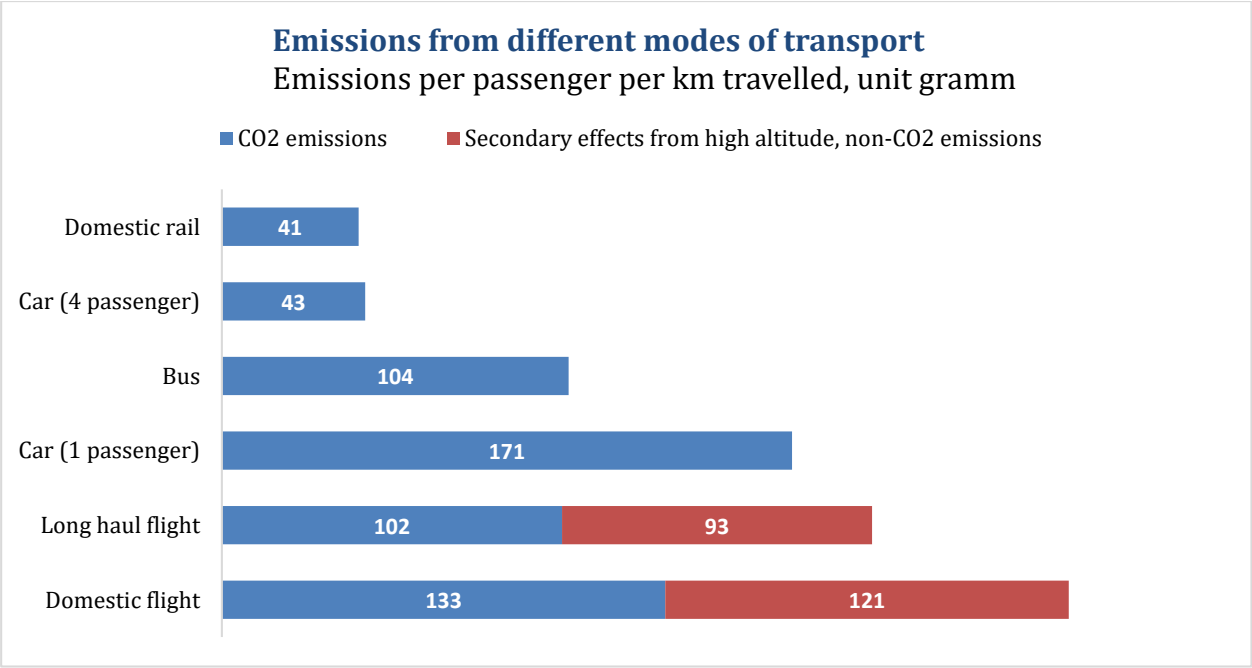

Figure 3.: Emissions from different Modes of transport

Source [14]

A keen look at the figure 3 above shows that different modes of transport have varying amount of CO2, with the domestic flights emitting the highest amount and the lease being domestic rail. Further, the emissions are per passenger per km travelled hence necessitates us to shift our focus to the distances in km travelled by the fans in Euro 2020. The figure 3.3 below highlights on the comparisons of the distances travelled in Euro 2020 and the previous Euros.

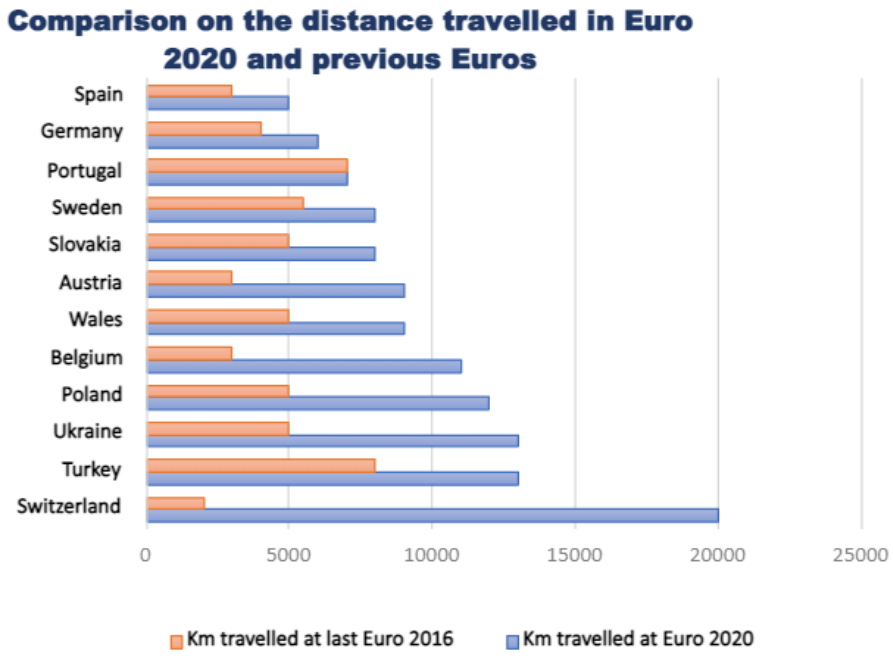

Figure 4 :Bar Graph comparison on the distance travelled per team in Euro 2020 and previous Euros

Source: [15]

DOI: 10.21791/IJEMS.2022.2.12.

From the above bar graph in figure 4, it can be evidently seen that a lot of travelling was done during the Euro cup 2020/21 as compared to the other Euros. From the above graph, it necessitates us to determine the number of fans in each game, the number of fans travelling in different modes of transport and the km travelled to each city hosting the matches as the above graph gave a general view of the km travelled without clear indicator on specific mode used.

3.3. Estimated Amount of Green House Gas (GHG) Emissions in Euro 2020/21

Estimating the amount of GHGs emitted in the Euro Cup 2020/21 requires one to determine the following data:

a) The number of fans and the players in each match from group stage to finals (Foreign fans and Local fans). In this case, local fans mean the spectators in the host country where the stadium is located while the foreign fans imply to fans who travel from different country(s) to participate in a particular match.
b) The distance travelled locally and by foreign fans
c) Modes of transport used.
d) Estimated emission based on the data in figure 3

The estimated CO_2 emission in Euro Cup 2020/21 and other GHGs as a result of travelling by fans was calculated using MS Excel as shown in Appendix 1 attached at the end of this paper (page 16). The following table 2 is a summary of the results:

Table 2. Green House Gas Emissions in Euro 2020/21

Mode of Transport	Emission of CO_2 in tons	Emission of non-CO_2 equivalent emissions in tons
Domestic Flight	135,712	123,467
Motorized Individual Traffic (Personal Cars)	5,362	0
Public Transport	2,458	0
Total Emission in Tons	143,532	123,467

Source: Authors (2021) Refer to Appendix 1.

The estimated emissions in different modes of transport can be compared in a pie chart below:

DOI: 10.21791/IJEMS.2022.2.12.

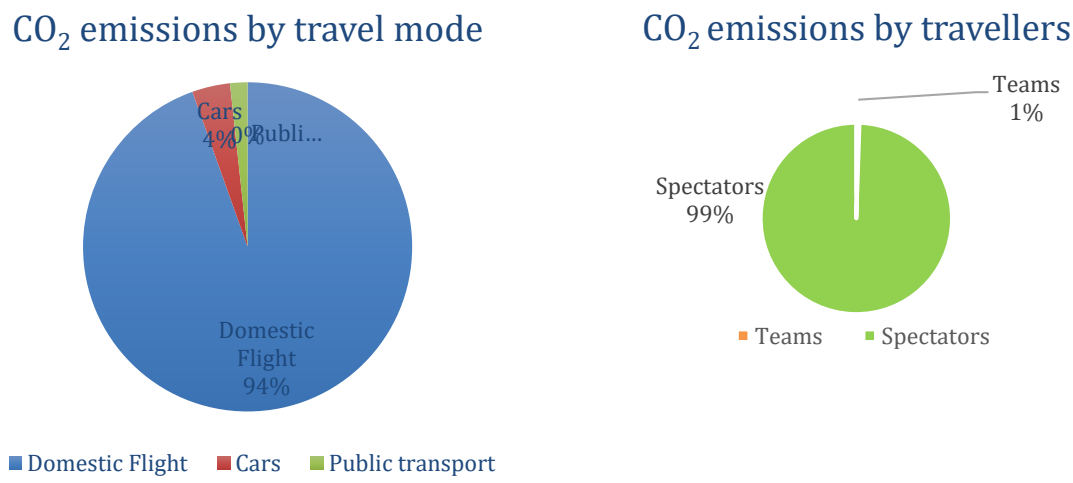

Figure 5: Comparison of CO2 emissions by different modes transport and different travellers in Euro Cup 2020/21
Source: Authors (2021)

The pie charts in figure 5 shows that air travel still had a higher amount of carbon dioxide emission at 94% followed by Cars at 4% and the least Public transport at 2%. The teams contribute a lesser percentage to Carbon dioxide emission compared to spectators at 1% and 99% respectively.

3.4. Comparisons between emissions in Euro Cup 2021 and previous Euros

Having determined the amount of emissions in Euro Cup 2021/20, a comparison between previous Euros needs to be done to determine whether UEFA was successful in achieving environmental conservation in Euro 2020/21.

3.4.1. Travel CO_2 Emissions comparison Euro Cup 2020 and Previous Euro Cups

Table 3 : Comparison between travel CO2 emissions in travel Euro 2020 and in Previous Euro (Case 2016)

Transport		
	2016	2020/21
Long-distance spectators	70% of spectators	15%
Carbon footprint	96% of spectators	100% of spectators within the host countries
CO2 emission	517,000 tons	143,532 tons

Source: Authors (2021)

It can be deduced from table 3 that the CO2 emissions in Euro 2020 as a result of transport was less compared to Euro 2016. This reinforces the estimation by UEFA that the tournament 2020 was to emit 425000 tons of carbon which was less than 2016 [14]. However, in our estimation, it can be seen that the actual emission 143,532 tons of carbon dioxide was emitted mostly by fans which is far much less than the UEFA estimate, but still it is in tandem with UEFA's estimate that the Euro 2020 carbon emission was lower than 2016 Euro cup. This gives an impression that the UEFA's aim of

DOI: 10.21791/IJEMS.2022.2.12.

environmentally friendly match was a success. However, our estimation is based on the final Covid-19 situation, with restricted number of spectators on each match. The originally planned scenario would have given a higher amount of emissions.

As early as 2019, the UEFA president, Aleksandr Čeferin mentioned that the Euro Cup 2020 was environmentally friendly as no new stadiums were to be built except one at Budapest [14]. This brings the necessity for us to check at the stadium emissions as the games were held in different countries. Hence, the need for comparison on the bigger outlook below on the overall emissions:

Table 4: Comparison in overall emissions in Euro 2020/21 and Euro 2016 France

	EURO 2016*	EURO 2020 /2021/
Number of stadiums built	4	1
CO2 emission due to the construction of new stadiums	587,080 tons	146,770 tons
Number of stadiums renovated	5 /1.7 billion euro/	4
CO2 emission due to renovation	451,600 tons	361,280 tons
Other investments due to stadium construction and renovation	1,219,320 tons	596,407 tons
Total stadium related CO2 emission	2,258,000 tons	1,104,457 tons
Tournament operation CO2	28,000 tons	28,000 tons
Transport		
Long-distance spectators	70% of spectators	15%
Carbon footprint	96% of spectators / to/from/within France/	100% of spectators within the host countries
CO2 emission /transport/	517,000 tons	143,532 tons
Total CO2 emission	**2,803,000 tons**	**1,275,989 tons**

Source: Authors (2021)

* [11]

From the table 4, it can be seen that the overall emissions in 2020 Euro Cup is half the previous Euros for the case of 2016 Euro Cup, hence we can conclude the UEFA goal was success in emission reduction by half compared to the classic case scenario.

3.5. Assumptions Made in Calculations (Refer to Appendix I Page 14)

1. All the foreign fans travelled on air (domestic flights) since the time taken per each flight did not exceed 6 hours hence cannot be regarded as long overhaul flight

DOI: 10.21791/IJEMS.2022.2.12.

2. Average distance travelled by local spectators in each match is 100 km. This is meant to include and average spectators from the given venue city who had few km to travel and spectators from other cities who had to travel several km.
3. Where the number of each category of fans is not stated (i.e. foreign or local), we interpolated the percentage based on the percentage distribution in other venues, where fans are indicated to be at 85% local spectators and 15% foreign spectators.
4. Since we are not able to determine how many local fans travelled by public means or by cars, we made a general assumption that 50% travelled by public means and 50% by cars. This is meant to include all local spectators, who travelled by car and stood at friends or hotels, or left immediately after the match by public transport.
5. For those who travelled via cars, we made an assumption that they travelled in 1.5 passenger cars.

3.6. Discussion and conclusion

According to our findings, we can say that the Euro 2020 was way more environmentally friendly than the previous Euro Cups. Compared to the UEFA's estimate of Euro Cup emission of 425,000 tons of carbon dioxide [14], the actual amount of carbon dioxide emitted by fans travelling in Euro Cup 2020 as per our calculation was 143,532 tons. Our findings reinforce UEFA's estimate that it was less compared to 2016 Euro Cup whose emission was 517,000 tons of carbon dioxide (Table 3). Our calculations also showed up, that the UEFA calculations were correct in the order of magnitude.

In Euro Cup 2020, one stadium in Budapest was built as compared to Euro Cup 2016 where four stadiums were built. On the other hand, renovations were done to 4 stadiums in 2020 compared to 5 Euro 2016. From this statistics, overall carbon emissions from travelling, stadium renovation and construction could be calculated. It can be deduced from table 4 that the overall carbon emission in 2020 was half the emission in 2016. This shows that Euro cup 2020 succeeded in overall reduction of carbon emission by half the previous Euro Cup.

What stands out is that our findings agree with UEFA's estimate that Euro Cup 2020 greenhouse gas emission was lower than that of 2016. This gives a greater ground to conclude that UEFA met its goal of reducing carbon emission, although the Euro 2020 championship was a special one due to the Covid-19 pandemic, and the number of spectators was seriously restricted compared to a regular case. From our findings, we can see that this Euro Cup succeeded in reducing also the overall carbon emission by half, and for most part due to limiting new construction works. Despite the success, this paper views that the carbon emission is still high for a single event and hence there is room for reduction of carbon emission to lower levels as possible. This paper suggests that the measure to organize the Euro Cup championship across different countries is a great idea. However, there is a necessity to ensure that environmentally friendly modes of transport can be used to reduce these emissions further for example ensuring that flights carry to the full capacity during events to reduce number of flights, encouraging fans to use trains and other means of public means of transport where possible.

DOI: 10.21791/IJEMS.2022.2.12.

This research therefore; suggests the following areas for further studies:

1. What are the other approaches that could be followed in order to make the euro cup more environmentally friendly?

2. Further studies needs to be done on a normal case scenario since the Euro Cup 2020/21 was done during the Covid-19 pandemic.

References

[1] A. Vieli, UEFA 60 years at the heart of football, 1260 Nyon, Switzerland: Union of European Football Associations (UEFA), 2014.

[2] Nyon, Vision Europe “the direction and development of European football over the next decade”, Tallin: UEFA, 2005.

[3] D. Lange, „UEFA Statistics & Facts,” Statista, New York, 2021.

[4] T. Amy, „European Championship football tournament,” 2020. [Online]. Available: https://www.britannica.com/sports/European-Championship.

[5] K. e. a. t. i. n. g. D a v e , „EURO 2021, The Green Issue,” Euractiv, Belgium, 2021.

[6] UEFA, „Together for the future of football- UEFA STRATEGY 2019-2024,” UEFA, Route de Genève 46 Switzerland, 2019.

[7] EURACTIV, „EURO 2021,” Euro 2021 football cup: The green issue, 2021.

[8] UEFA, „UEFA's pledge towards an environmentally conscious UEFA EURO 2020,” Wednesday 27 November 2019. [Online].

[9] J. S. &. E. Begley, „Euro 2020: What is the climate cost of tournament staged in 11 countries?,” BBC, 2021.

[10] J. Santaeularia, "Selectra," 30 10 2021. [Online]. Available: https://selectra.co.uk/energy/news/world/world-cup-2018-stadium-energy-use.

[11] UEFA, "UEFA EURO 2016: Social Responsibility and Sustainability - Post-event report," Artgraphic Cavin SA, Grandson, 2016.

[12] Wikipedia, „UEFA_Euro_2020,” 2021. [Online]. Available: https://en.wikipedia.org/wiki/UEFA_Euro_2020. [Hozzáférés dátuma: 11/02/2022 02 2022].

[13] M. Cooper, „Each host stadium's capacity for Euro 2020,” 6 June 2021. [Online]. Available: https://www.90min.com/posts/each-host-stadium-capacity-fans-euro-2020.

[14] BBC, „BEIS/Defra Greenhouse gas conversion factors,” 2019.

DOI: 10.21791/IJEMS.2022.2.12.

[15] BBC, „Comparison of the distance travelled in the Euro 2020 and the previous Euros based on results going according to seeding," 2020.

[16] J. t. White, „Less stadium construction, more flying: the climate-friendly Eb only partially came together," 16 6 2021. [Online]. Available: https://telex.hu/sport/2021/06/16/futball-eb-zold-utazas-repulo-klimavaltozas-11-helyszin-emisszio-karbonlabnyom.

DOI: 10.21791/IJEMS.2022.2.12.

APPENDIX 1 - ESTIMATION OF CARBON EMISSIONS IN EURO 2020/21 - SOURCE AUTHORS (2021)

	Date	Match	Stadium	Attendance	Teams - Foreign	Km (Air travel)	Foreign Spectators	Local Spectators	CO2 Emission- air travel -133g per Km	Carbon Emission Car =114g per 1.5 passengers	CO2 Emission Public transport 41g/ Km	Total CO2 Emission
Group A	11/06/2021	Turkey Vs Italy	Stadio Olimpico-Rome	12,916	23	1380	2000	10,916	742,602,840.00	62,221,200	22,377,800	827,201,840.00
	12/06/2021	Wales Vs Switzerland	Olympic stadium - Baku	8,782	46	13205	2750	6,032	9,821,033,880.00	34,382,400	12,365,600	9,867,781,880.00
	16/06/2021	Turkey Vs Wales	Olympic stadium - Baku	19,762	23	3110.92	2400	17,362	2,005,043,936.56	98,963,400	35,592,100	2,139,599,436.56
	16/06/2021	Italy Vs Switzerland	Stadio Olimpico-Rome	12,445	23	649	1,887.00	10,558.00	329,730,940.00	60,180,600	21,643,900	411,555,440.00
	20/06/2021	Switzerland Vs Turkey	Olympic stadium - Baku	17,138	46	3110.92	2,571.00	14,567.00	2,165,579,852.24	83,037,600	29,860,300	2,278,477,752.24
	20/06/2021	Italy Vs Wales	Stadio Olimpico-Rome	11,541	23	4200	1,732.00	9,809.00	1,960,686,000.00	55,905,600	20,110,500	2,036,702,100.00
GROUP B	12/06/2021	Denmark Vs Finland	Parken Stadium, Copenhagen	13,790	23	1120	1000	12,790	304,772,160.00	72,903,000	26,219,500	403,894,660.00
	12/06/2021	Belgium Vs Russia	Krestovsky Stadium, Russia	26,264	23	3577	3,937.00	22,327.00	3,767,868,720.00	127,258,200	45,772,400	3,940,899,320.00
	16/06/2021	Finland Vs Russia	Krestovsky Stadium, Russia	24,540	23	5048	3000	21,540	4,059,187,664.00	122,778,000	44,157,000	4,226,122,664.00
	16/06/2021	Denmark Vs Belgium	Parken Stadium, Copenhagen	23,395	23	5048	3,510.00	19,885.00	4,743,999,344.00	113,316,000	40,774,500	4,898,089,844.00
	20/06/2021	Russia Vs Denmark	Parken Stadium, Copenhagen	23,644	23	5048	3,547.00	20,097.00	4,793,681,760.00	114,547,200	41,200,900	4,949,429,860.00
	20/06/2021	Finland Vs Belgium	Krestovsky Stadium, Russia	18,545	46	5048	2,782.00	15,763.00	3,797,347,904.00	89,854,800	32,312,100	3,919,514,804.00
GROUP C	13/06/2021	Austria Vs North Macedonia	Arena Națională Bucharest	9,082	23	475	1,363.00	7,719.00	175,121,100.00	43,981,200	15,830,100	234,932,400.00
	13/06/2021	Netherlands Vs Ukraine	Johan Cruyff Arena, Amsterdam	15,837	23	1824	2,376.00	13,461.00	1,163,956,416.00	76,722,000	27,597,100	1,268,275,516.00
	17/06/2021	Ukraine Vs North Macedonia	Arena Națională Bucharest	10,001	46	1788	1,500.00	8,501.00	735,289,968.00	48,450,000	17,429,100	801,169,068.00
	17/06/2021	Netherlands Vs Austria	Johan Cruyff Arena, Amsterdam	15,243	23	1788	2,287.00	12,956.00	1,098,654,480.00	73,849,200	26,559,800	1,199,063,480.00
	21/06/2021	North Macedonia Vs Netherlands	Johan Cruyff Arena, Amsterdam	15,227	23	1741	2,285.00	12,942.00	1,068,848,648.00	73,769,400	26,531,100	1,169,149,148.00
	21/06/2021	Ukraine Vs Austria	Arena Națională Bucharest	10,472	23	685	1,571.00	8,901.00	290,442,740.00	50,730,000	18,249,100	359,421,840.00
GROUP D	13/06/2021	England Vs Croatia	Wembley Stadium London	18,497	23	1347	2,775.00	15,722.00	1,002,528,996.00	89,615,400	32,230,100	1,124,374,496.00
	14/06/2021	Scotland Vs Czech republic	Hampden park, Glasgow	9,847	23	1404	1,448.00	8,399.00	549,365,544.00	47,857,200	17,224,100	614,446,844.00
	18/06/2021	Croatia Vs Czech republic	Hampden park, Glasgow	5,607	46	596	850.00	4,757.00	142,048,256.00	27,109,200	9,753,900	178,911,356.00
	18/06/2021	England Vs Scotland	Wembley Stadium London	20,306	23	596	3,050.00	17,256.00	487,181,128.00	98,359,200	35,374,800	620,915,128.00
	22/06/2021	Croatia Vs Scotland	Hampden park, Glasgow	9,896	23	1813	1,485.00	8,411.00	727,245,064.00	47,937,000	17,244,600	792,426,664.00
	22/06/2021	Czech republic Vs England	Wembley Stadium London	19,104	23	1025	2,866.00	16,238.00	787,685,850.00	92,556,600	33,287,900	913,530,350.00
GROUP E	14/06/2021	Poland Vs Slovakia	Krestovsky Stadium, Russia	12,862	46	10204	1,930.00	10,932.00	5,363,385,664.00	62,312,400	22,410,600	5,448,108,664.00
	14/06/2021	Spain Vs Sweden	La Cartuja Sevilla- Spain	10,559	23	2682	1,584.00	8,975.00	1,146,453,084.00	51,163,200	18,396,700	1,216,012,984.00
	18/06/2021	Sweden Vs Slovakia	Krestovsky Stadium, Russia	11,525	46	4364	1,730.00	9,795.00	2,061,623,424.00	55,825,800	20,081,800	2,137,531,024.00
	19/06/2021	Spain Vs Poland	La Cartuja Sevilla- Spain	11,742	23	2164	1,760	9,982	1,026,337,592.00	56,897,400	20,463,100	1,103,698,092.00
	23/06/2021	Slovakia Vs Spain	La Cartuja Sevilla- Spain	11,204	23	2062	1,681.00	9,523.00	934,630,368.00	54,264,000	19,528,300	1,008,422,668.00
	23/06/2021	Sweden Vs Poland	Krestovsky Stadium, Russia	14,252	46	4364	2,137.00	12,115.00	2,534,078,792.00	69,049,800	24837800	2,627,966,392.00
GROUP F	15/06/2021	Hungary Vs Portugal	Puskás Aréna, Budapest	55,662	23	2302	5,662.00	50,000.00	3,481,107,420.00	285,000,000	102,500,000	3,868,607,420.00
	15/06/2021	France Vs Germany	Allianz Arena, Munich	13,000	23	817	1,950.00	11,050.00	428,776,306.00	62,985,000	22,652,500	514,413,806.00
	19/06/2021	Hungary Vs France	Puskás Aréna, Budapest	55,998	23	1240	8,400.00	47,598.00	2,778,242,320.00	271,308,600	97,575,900	3,147,126,820.00
	19/06/2021	Portugal Vs Germany	Allianz Arena, Munich	12,926	23	1954	1,940.00	10,986.00	1,020,296,732.00	62,620,200	22,521,300	1,105,438,232.00
	23/06/2021	Portugal Vs France	Puskás Aréna, Budapest	54,886	46	3720	8,233.00	46,653.00	8,192,236,080.00	265,927,800	95,636,600	8,553,800,480.00
	23/06/2021	Germany Vs Hungary	Allianz Arena, Munich	12,413	23	730	1,862.00	10,551.00	366,029,300.00	60,135,000	21,631,600	447,795,900.00
KNOCK OUT PHASE	27/06/2021	Belgium Vs Portugal	La Cartuja, Seville	11,504	46	2018	1,726	9,778	950,973,620.80	55,736,880	50,847,680	1,057,558,181
	26/06/2021	Italy Vs Austria	Wembley Stadium, London	18,910	46	1235	-	18,910	15,111,460.00	107,787,000	98,332,000	221,230,460
	28/06/2021	France vs Switzerland	Arena Națională, Bucharest	22,642	46	3342	3,396	19,246	3,060,108,315.60	109,700,490	100,077,640	3,269,886,446
	28/06/2021	Croatia vs Spain	Parken Stadium, Copenhagen	22,771	46	3195	3,416	19,355	2,941,952,485.50	110,325,495	100,647,820	3,152,925,801
	29/06/2021	Sweden vs Ukraine	Hampden Park, Glasgow	9,221	46	3747	1,383	7,838	1,424,436,663.30	44,675,745	40,756,820	1,509,869,228
	29/06/2021	England vs Germany	Wembley Stadium, London	41,973	23	932	6,296	35,677	1,566,543,532.40	203,359,185	185,520,660	1,955,423,377
	27/06/2021	Netherlands vs Czech Republic	Puskas Arena, Budapest	52,834	46	1590	7,925	44,909	3,371,297,034.00	255,980,730	233,526,280	3,860,804,044
	26/06/2021	Wales Vs Denmark	Johan Cruyff Arena, Amsterdam	14,645	46	1183	2,197	12,448	705,744,084.50	70,955,025	64,730,900	841,430,010
Quarter-finals	02/07/2021	Belgium vs Italy	Allianz Arena	12984.00	46	1197.99	1947	11037.00	635,100,022.62	62,905,200	22,627,900	720,633,122.62
	02/07/2021	Switzerland vs Spain	Krestovsky Stadium	24764.00	46	12963	3714	21050.00	12,965,074,080.00	119,985,000	43,152,500	13,128,211,580.00
	03/07/2021	Ukraine vs England	Stadio Olimpico	11880.00	46	2009.05	1782	10098.00	976,896,544.40	57,558,600	20,700,900	1,055,156,044.40
	03/07/2021	Czech Republic vs Denmark	Baku Olympic Stadium	16306.00	46	6004	2445	13861.00	3,978,286,424.00	79,002,000	28,417,100	4,085,705,524.00
Semi	06/07/2021	Italy vs Spain	Wembley Stadium	57811.00	46	2683.57	8672	49139.00	6,223,166,627.16	280,086,600	100,737,000	6,603,990,227.16
	07/07/2021	England vs Denmark	Wembley Stadium	64950.00	46	6591.87	9742	55208.00	17,162,645,466.96	314,685,600	113,176,400	17,590,507,466.96
Finals	11/07/2021	Italy vs England	Wembley Stadium	67173.00	23	1370.45	10075	57098.00	3,681,121,890.60	325,458,600	117,050,900	4,123,631,390.60
	TOTAL CARBON EMISSION IN TONNES								**135,711.56**	**5,361.98**	**2,458.24**	**143,531.77**