



SUSTAINABLE LOGISTIC



Heineken 0.0% Heineken 0.0% Heineken 0.0% Heineken 0.0% Heineken 0.0% Heineken 0.0%



OUR APPROACH



223'032 T

The championship emits 223'032
tonnes of CO₂ per year

1,5 B

A **cumulative audience** of
1.5 billion per year



CURRENT SITUATION



**Profit driven
championship**

- **50%** increase in the number of races per season
- **5x** Cost of contracts to host a Grand Prix



**Only solution to
be NetZero is
Biofuel**

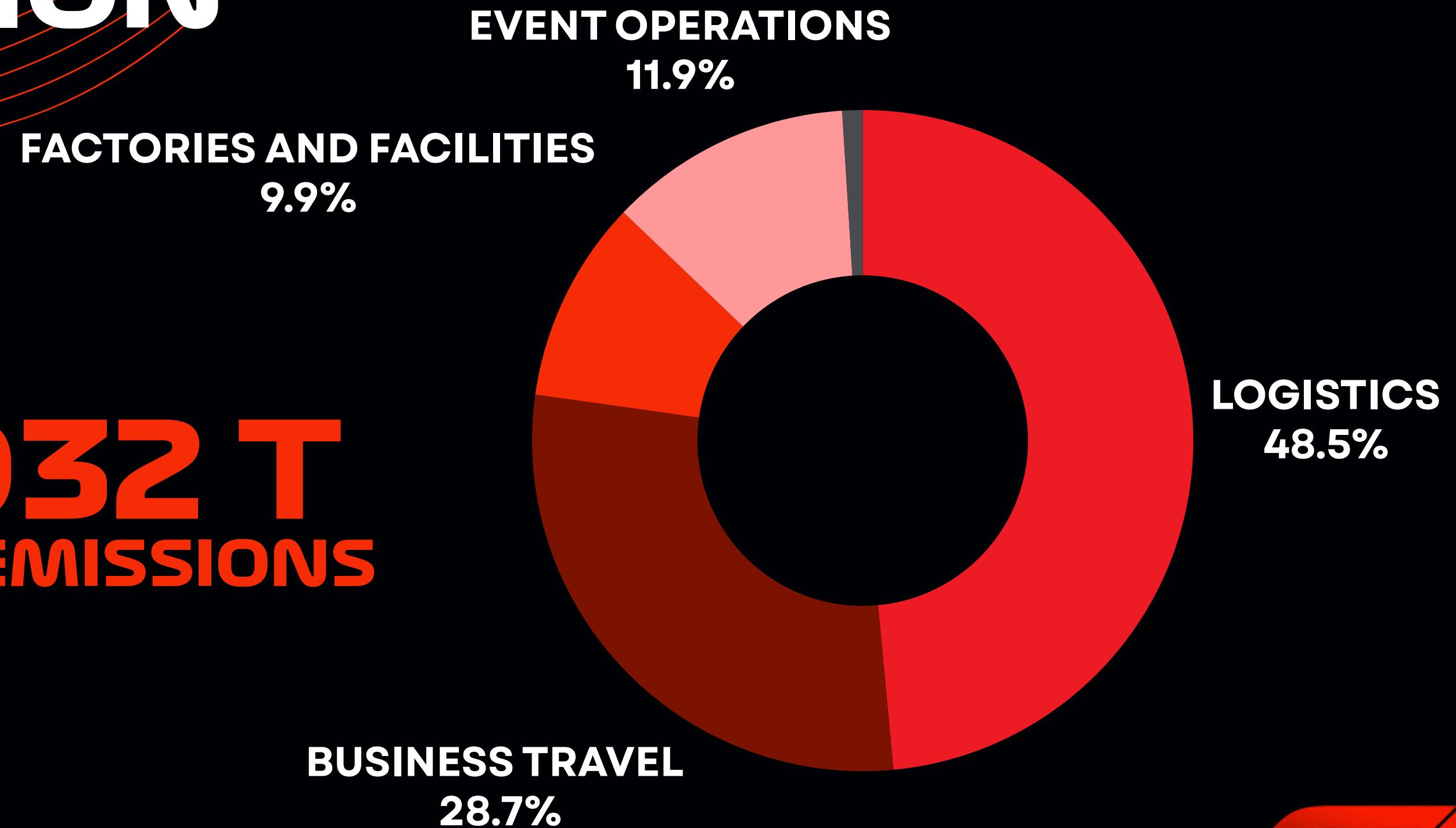


**Logistic can be
improved**



CURRENT SITUATION

223'032 T
TOTAL CO₂ EMISSIONS



OFFICIAL SCHEDULE 2023

R1	SAKHIR 03-05 MAR	R9	MONTREAL 16-18 JUN	R17	SUZUKA 22-24 SEP
R2	JEDDAH 17-19 MAR	R10	SPIELBERG 30 JUN - 2 JUL	R18	LUSAIL 06-08 OCT
R3	MELBOURNE 31 MAR - 2 APR	R11	SILVERSTONE 07-09 JUL	R19	AUSTIN 20-22 OCT
R4	BAKU 28-30 APR	R12	BUDAPEST 21-23 JUL	R20	MEXICO CITY 27-29 OCT
R5	MIAMI 05-07 MAY	R13	SPA-FRANC. 28-30 JUL	R21	SAO PAULO 03-05 NOV
R6	IMOLA 19-21 MAY	R14	ZANDVOORT 25-27 AUG	R22	LAS VEGAS 16-18 NOV
R7	MONACO 26-28 MAY	R15	MONZA 01-03 SEP	R23	ABU DHABI 24-26 NOV
R8	BARCELONA 02-04 JUN	R16	SINGAPORE 15-17 SEP		

157,929 km

218,277
tonnes CO2



OPTIMIZATION

Optimal Schedule Calculation

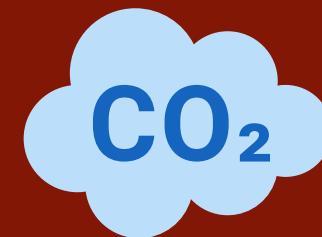
1.



**Minimize the total
distance (TSP)**

- Optimal sequence of races

2.



**Minimize the CO₂ for
every link**

- Define the modes of transport for every path
- Calculate the time for every path

3.



**3. Define the calendar
given timing
constraint**

- Dates where every races takes place



OPTIMIZATION

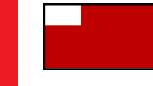
Optimal Schedule Calculation

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R8		JEDDAH	05-07 MAY	R16		ZANDVOORT	07-09 JUL				



OPTIMIZATION

Optimal Schedule Calculation

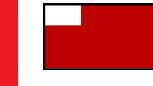
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85,214 km
46% reduction



OPTIMIZATION

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46% reduction

41,289 tonnes CO2
81% reduction



OPTIMIZATION

Optimal Schedule Calculation

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OPTIMIZATION

Optimal Schedule (with Depot)

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71,925 km



OPTIMIZATION

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71,925 km

35,143
tonnes CO2



OPTIMIZATION

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tonnes CO2



OPTIMIZATION

Optimal Contract Schedule

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OPTIMIZATION

Optimal Contract Schedule

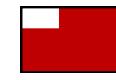
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83,383 km



OPTIMIZATION

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83,383 km

35,223 tonnes CO₂



OPTIMIZATION

Optimal Contract Schedule

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83,383 km

35,223 tonnes CO2



EXTENSION

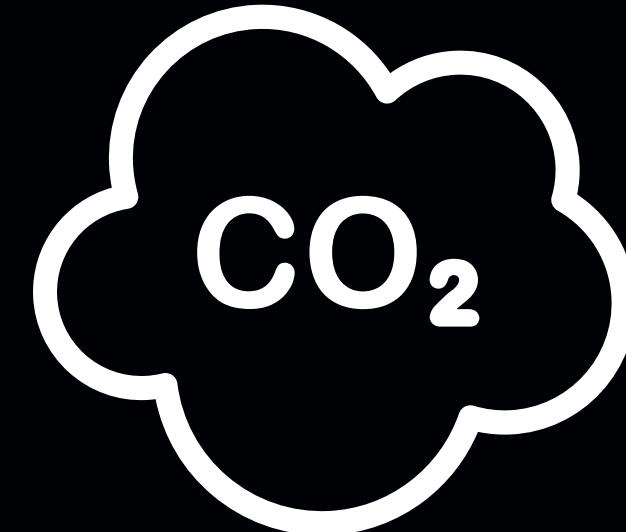
Cost Estimation

Transportation Costs



Truck: 600\$/km
Plane: 285\$/km
Boat: 2.1\$/km

EU Emissions Trading System



Around \$75 per tonne of CO₂



EXTENSION

Cost Estimation

Transportation Costs

	TRUCK	PLANE	BOAT	TOTAL
Price of Transportation	600\$/km	285\$/km	2.1\$/km	
Official Schedule	20,754 km	137,174 km	0 km	51,547,155 \$
Optimal Schedule (No Depot)	14,823 km	23,221 km	47,169 km	15,611,287\$
Optimal Schedule With Depot	14,823 km	20,406 km	36,694 km	14,786,877 \$
Contract Schedule	14,613 km	20,406 km	48,362 km	14,685,529 \$

EXTENSION

Cost Estimation

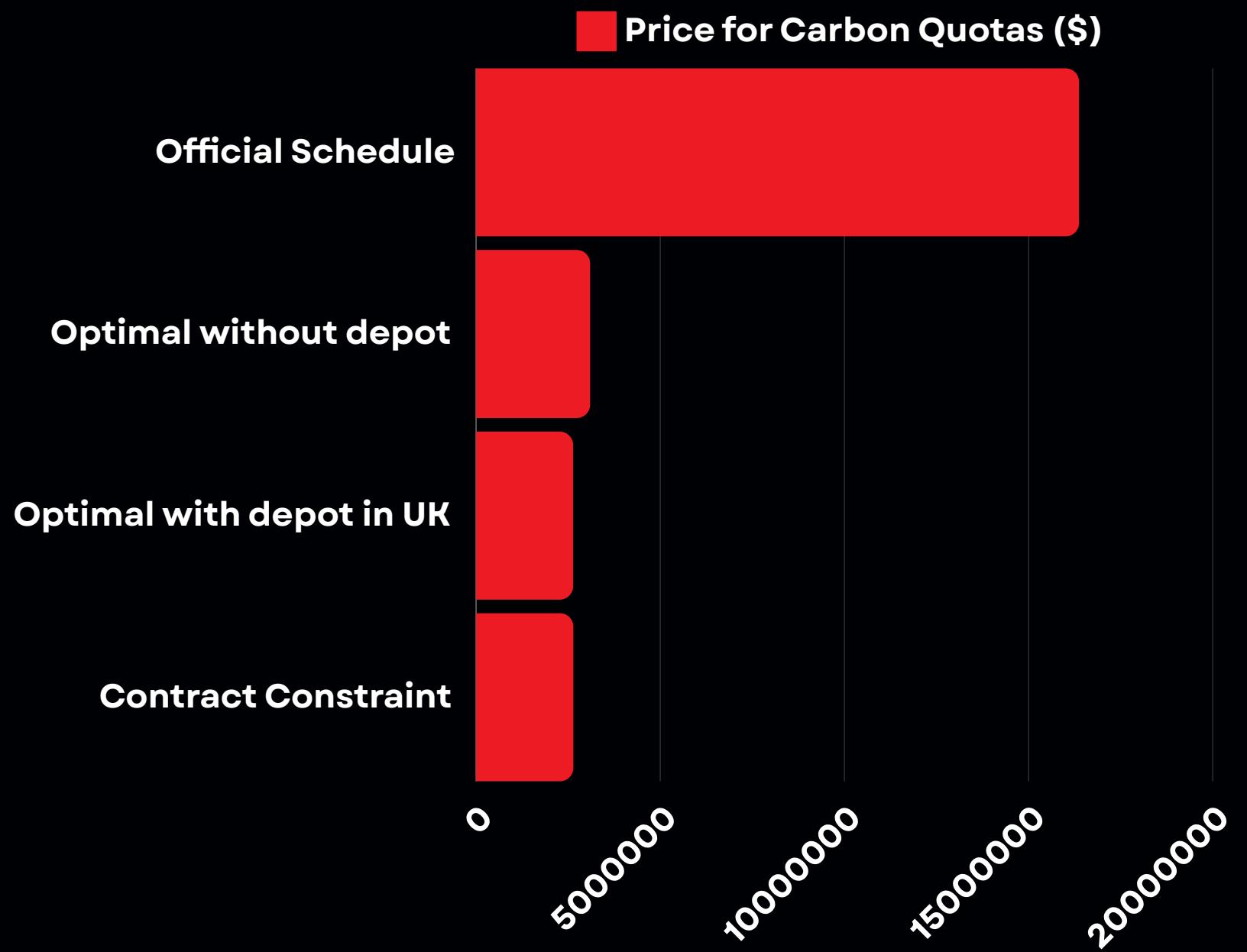
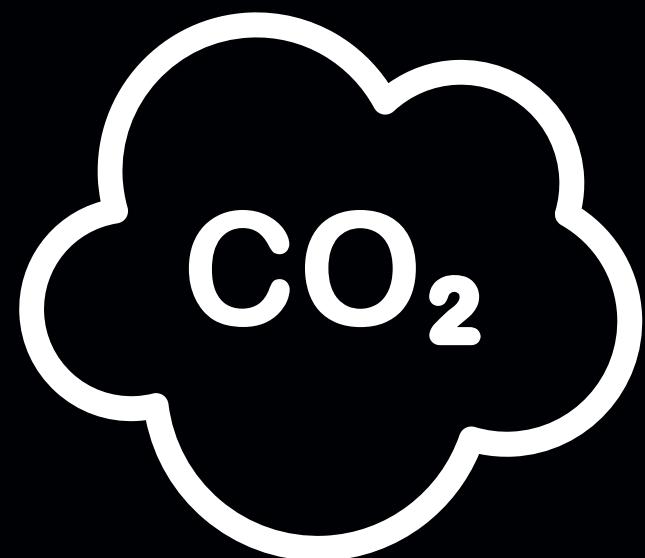
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EXTENSION

Cost Estimation

EU Emissions Trading System



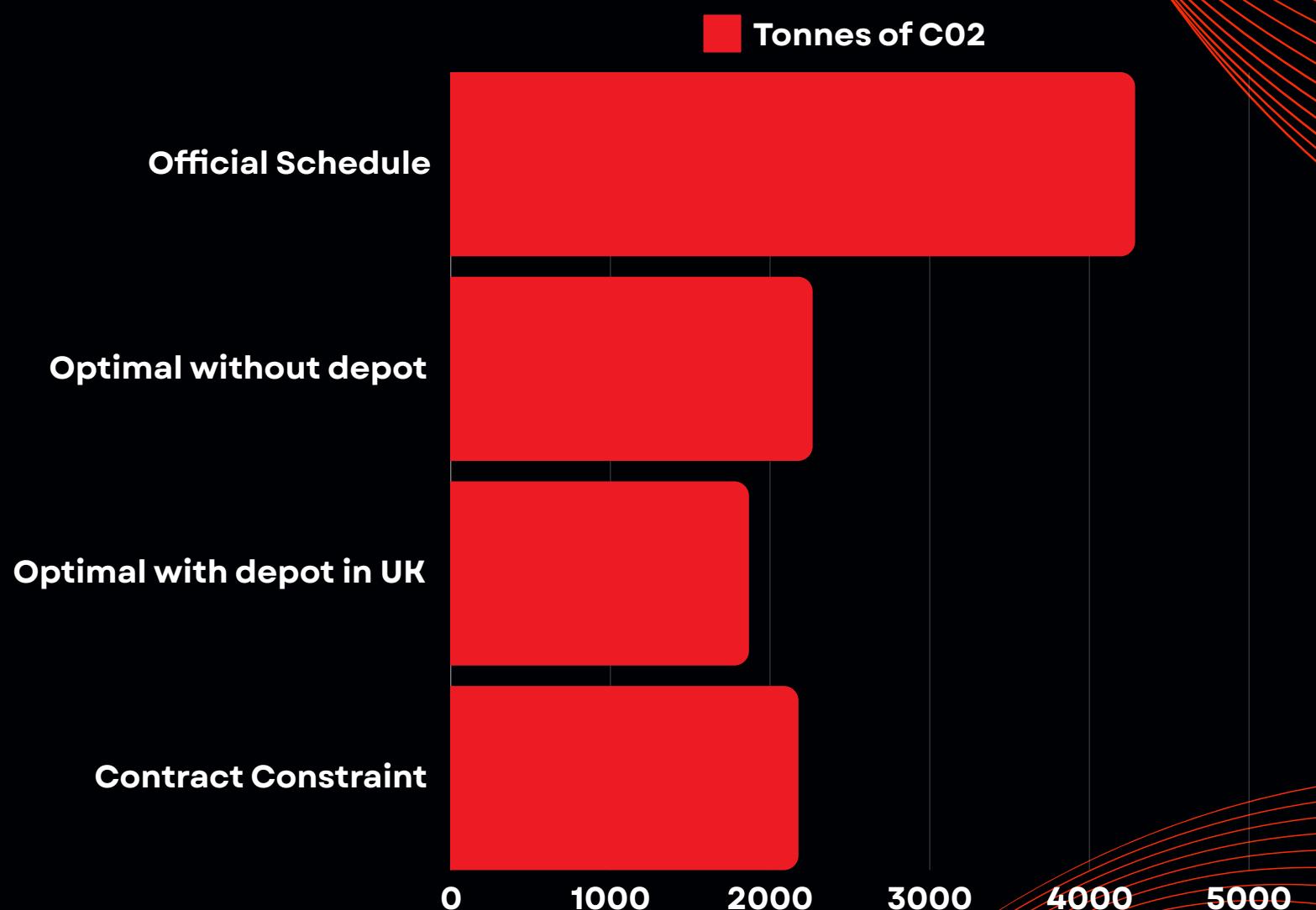
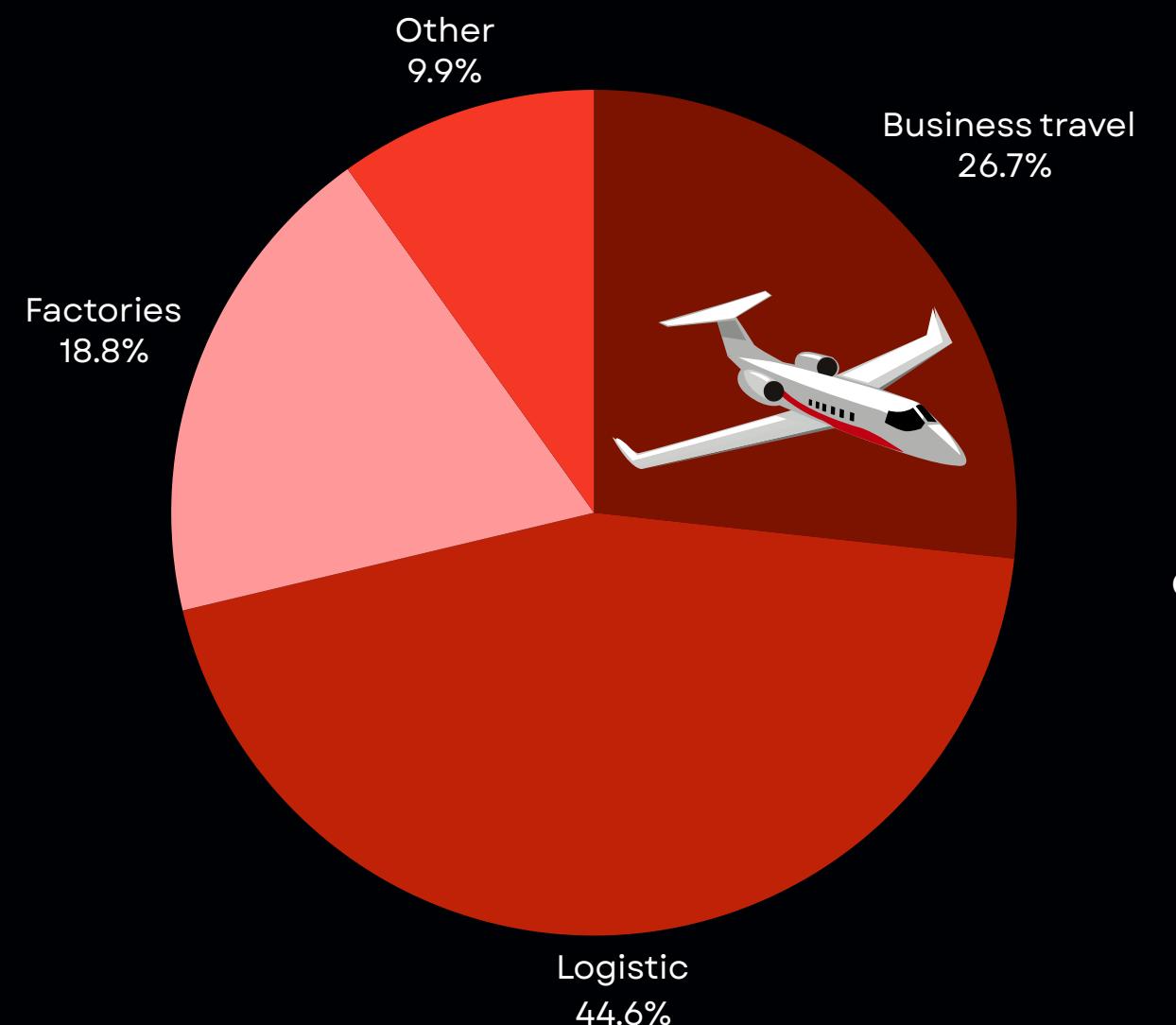
COMPARISON OF RESULTS

Scenario	Total Distance	Total CO2 Emission	Total Cost
Official Schedule 2023	157,929 km	218,277 tonnes	51,547,155 \$
Optimal Schedule (no Depot)	85,214 km	41,289 tonnes	15,611,287 \$
Optimal Schedule (with Depot)	71,925 km	35,143 tonnes	14,786,877 \$
Optimal Contract Schedule	83,383 km	35,223 tonnes	14,685,529 \$



EXTENSION

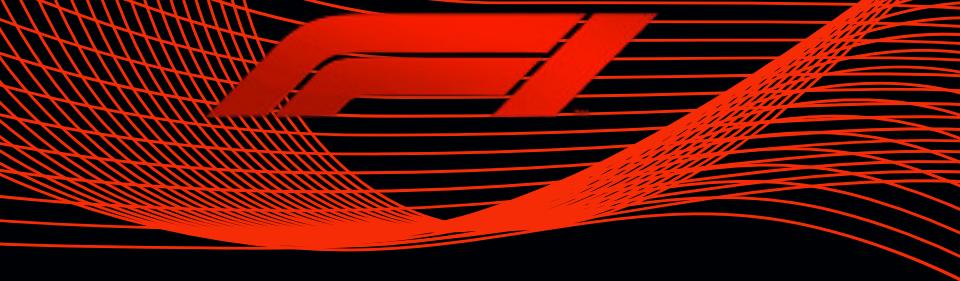
Private Jet



Numbers always consider the emission of going back to the depot



EXTENSION



2025 Schedule

Official schedule 2025:

R1		14-16 MAR	AUSTRALIA	MELBOURNE	
R2		21-23 MAR	CHINA	SHANGHAI	
R3		04-06 APR	JAPAN	SUZUKA	
R4		11-13 APR	BAHRAIN	SAKHIR	
R5		18-20 APR	SAUDI ARABIA	JEDDAH	
R6		02-04 MAY	USA	MIAMI	
R7		16-18 MAY	ITALY	IMOLA	
R8		23-25 MAY	MONACO	MONACO	
R9		30 MAY-01 JUN	SPAIN	BARCELONA	
R10		13-15 JUN	CANADA	MONTRÉAL	
R11		27-29 JUN	AUSTRIA	SPIELBERG	
R12		04-06 JUL	UNITED KINGDOM	SILVERSTONE	
R13		25-27 JUL	BELGIUM	SPA	
R14		01-03 AUG	HUNGARY	BUDAPEST	
R15		29-31 AUG	NETHERLANDS	ZANDVOORT	
R16		05-07 SEP	ITALY	MONZA	
R17		19-21 SEP	AZERBAIJAN	BAKU	
R18		03-05 OCT	SINGAPORE	SINGAPORE	
R19		17-19 OCT	USA	AUSTIN	
R20		24-26 OCT	MEXICO	MEXICO CITY	
R21		07-09 NOV	BRAZIL	SÃO PAULO	
R22		20-22 NOV	USA	LAS VEGAS	*SAT RACE
R23		28-30 NOV	QATAR	LUSAIL	
R24		05-07 DEC	ABU DHABI	YAS MARINA	

Recommended schedule:



EXTENSION

2025 Schedule



Scenario	Total CO2 Emissions	Emissions Improvement	Financial costs
Official Schedule 2025	207855 tonnes	0%	41,817,706\$
Recommended Schedule (plane to Melbourne)	63878 tonnes	69.3%	21,323,678\$
Recommended Schedule (plane to Melbourne & train in Europe)	63220 tonnes	69.6%	19,285,437\$
Recommended Schedule (boat to Melbourne)	29249 tonnes	85.9%	16,550,641\$
Recommended Schedule (boat to Melbourne & train in Europe)	28591 tonnes	86.2%	14,512,400\$



EXTENSION

2025 Schedule

Comparison of private jets emissions

Scenario	Total CO2 Emissions (private jets)	Improvement
Official Schedule 2025	4108 tonnes	0%
Recommended schedule	2321 tonnes	44%



EXTENSION



2025 Schedule

How different is the recommended schedule from the official schedule ?

- Season 28 days shorter
- Sequence altered by 55%
- On average, races moved by 10 days
- On average, each city will see its race moved by 80 days



MANAGERIAL RECOMMENDATIONS

Minimization
of Travel
Distance



Less Polluting
Transportation



**NETTM
ZERO
2030**

