CARBON FOOTPRINT MANUAL - 2024

FRANJO TUĐMAN AIRPORT ZAGREB

airport carbon accredited
OPTIMISATION

LEED
SILVER

SILVER

ISO 9001 - ISO 14001
BUREAU VERITAS
Certification

BUREAU VERITAS
1828

HRVATSKI SAVJET ZA ZELENU GRADNJU
CROATIA GREEN BUILDING COUNCIL

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	V0	25/06/2021	Original document	-	G.Abramović
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SCOPE OF APPLICATION	International Zagreb Airport

REFERENCE(S)

Manuals

1. Airport Carbon Accreditation Application Manual Issue 14, December 2023
- Airport Air Quality Manual, ICAO Doc 9889
- The Stakeholder Engagement Manual Volume 2: The Practitioner's Handbook on Stakeholder Engagement
- Stakeholder Engagement Plan

Procedures
- Internal Audit Management Procedure

Forms
- Quality department Audit Plan.

Records
- ACI Europe Resolution – European airports committing to net zero carbon emissions by 2050
- MZLZ ACI ACA Calculation table
- Booklet Company Profil 2023

1. Definitions

TERM	DESCRIPTION
Aircraft Main engine	Main engines of aircraft within a specified operating perimeter (from start-up to shutdown)
Auxiliary power unit	A self-contained power unit on an aircraft providing electrical/pneumatic power to aircraft systems during ground operations
Ground support equipment	GSE necessary to handle the aircraft during the turnaround at the stand: ground power units, air climate units, aircraft tugs, conveyer belts, passenger stairs, forklifts, tractors, cargo loaders, etc.
Airside traffic	Service vehicle and machinery traffic (sweepers, trucks (catering, fuel, sewage) cars, vans, buses, etc.) within the airport perimeter fence (usually restricted area) that circulate on service roads.
Aircraft refueling	Evaporation through aircraft fuel tanks (vents) and from fuel trucks or pipeline systems during fueling operations.
Aircraft de-icing	Application of de-icing and anti-icing substances to aircraft during winter operations.
Power/heat generating plant	Facilities that produce energy for the airport's infrastructure: boiler house, heating/cooling plants, co-generators
Emergency power generator	Diesel generators for emergency operations (e.g. for buildings or for runway lights).
Aircraft maintenance	All activities and facilities for the maintenance of aircraft, i.e. washing, cleaning, paint shop, engine test beds.
Airport maintenance	All activities for the maintenance of airport facilities (cleaning agents, building maintenance, repairs, Greenland maintenance) and machinery (vehicle maintenance, paint shop).
Fuel	Storage, distribution and handling of fuel in fuel farms and vehicle fuel stations.
Construction activities	All construction activities associated with airport operation and development.
Fire training	Activities for fire training with different types of fuel (kerosene, butane, propane, wood).
Surface de-icing	Emissions of de-icing and anti-icing substance applied to aircraft moving areas and service and access roads.
Vehicle traffic	Motor bikes, cars, vans, trucks, buses and motor coaches associated with the airport on access roads, curb sides, drive-ups, and on-or off-site parking lots (including engine turn-off, start up and fuel tank evaporative emissions).
Aircraft main engines	Generally classified as turbojet, turboprop and piston engines
Time in mode (TIM)	The time period, usually measured in minutes, that the aircraft engines actually spend at an identified power setting, typically pertaining the one of the LTO operating modes of the operational flight cycle.
LTO cycle	ICAO has defined a specific reference LTO cycle below a height of 915 m (3000 ft).
TMA Efficiency	Terminal Control Area – a control area normally established at the confluence of ATS routes in the vicinity of one aerodrome.
HROTE	Croatian Energy Market Operator Ltd.

2. General Information about airport

International Zagreb Airport is the main international airport of Croatia and the base of the Croatian Air Force. Located 10 km South of Zagreb, in 2023:

- 3,723,650 passengers
- MTOW: 1,165,783
- Number of flights: 45,726
- Cargo: 10,859 tonnes

Airlines operating during 2023/2024 are:

Croatia Airlines, Turkish Airlines, Qatar Airways, British Airways, Eurowings GmbH, Austrian Airlines, LOT-Polskie Linie Lotnicze, Lufthansa,
Air France, Iberia, Qatar Airways, Air Serbia, Vueling Airlines s.a., KLM Royal Dutch Airlines, Flydubai, EL AL Israel Airlines Limited, Trade Air, Ryanair, Finnair, Norwegian, Aegan and Air Transat, Pegasus Airlines

1962 – Zagreb airport opens at Pleso a 2,500 m long runway, with 1,000 m2 terminal and a 5,000 m2 apron.
1966 – Zagreb Airport gets a modern 5,000 m2 passenger terminal
1974 – The runway was extended to its current 3,252 m and the terminal expanded to 12,000 m2.
2004 – The airport installed a CAT-IIIb instrument landing system (ILS).
2008 – A VIP Terminal was added with extra amenities, restaurants and bars. The terminal was expanded to 15,500 m2.
2010 – A 3rd Floor Viewing platform and a bar were added in the Terminal.
2013 – The Terminal was expanded to 22,500 m2 to an increased capacity of 3.5 million passengers.
2017 - 21st March 2017 – official opening of the New Passenger Terminal.
28th March 2017 – New Passenger Terminal started with operations.

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It is the hub for the Croatian flag carrier Croatia Airlines.

In order to facilitate a substantive upgrade of the airport facilities at International Zagreb Airport, the Croatian Government initiated a new passenger terminal facility development project, for which a tender procedure, based on a Public Private Partnership, was implemented in February 2011.

The 30-year concession for the operation and maintenance of the current and future facilities and the construction of the New Passenger Terminal was granted in 2012 to Međunarodna Zračna Luka Zagreb Jsc ("MZLZ"), a Croatian company whose main partners are Aéroports de Paris Management S.A, Bouygues Bâtiment International S.A., Marguerite, IFC, TAV and Viadukt d.d.

The handover of the airport between the previous Operator, Zračna Luka Zagreb (ZLZ) and the new Concessionaire, MZLZ, occurred on 5th December 2013.

Like its shareholders, MZLZ is fully committed in safety, security, customers' satisfaction and carbon footprint optimization as part of the sustainable development.

FACTS & FIGURES:

5.000.000 Capacity of the passenger terminal
65.000 m² Passenger Terminal
2.000 m² Commercial area
1.400 Parking spaces
8 Passenger boarding bridges
30 Check-in counters
18 Passport control counters
4 km Baggage belts – modern automatic baggage handling system
9 Restaurants and bars
11 Shops

The airport industry's commitment to addressing carbon and climate issues remains an absolute priority. Airport Carbon Accreditation remains the only voluntary global carbon management standard for airports.

Certificate issued in year 13 (July 2023 - July 2024) the expiry date was extended by one year.
In 2021 International Zagreb Airport upgrade from Level 2 up to Level 3.

It has been 11 years since International Zagreb Airport became accredited to Airport Council International's (ACI) Airport Carbon Accreditation (ACA),

This progression demonstrates remarkable progress.
The requirements of Level 3 include:

- Fulfil all the requirements of Levels 1 and 2
- Expansion of the scope of the carbon footprint to include specific Scope 3 emission sources. Emission sources required to be included within the scope of the footprint for participation at Level 3 are:
  - The LTO cycle and all ground running operations including auxiliary power units (APU), fixed ground power and ground service equipment.
  - Surface (passenger and airport company staff) access
  - Airport company staff business travel
  - Other significant CO2 emission sources

- Submission of a verified carbon footprint including Scope 3 emission sources.
- Evidence of activities to engage stakeholders

3. The International Zagreb Airport Inventory Boundary

Inventory Boundary constitute of organizational and operational boundaries. These boundaries are required to properly account for and report emissions.

3.1 International Zagreb Airport Organizational Boundary

International Zagreb Airport Jsc. is a concessionaire of Zagreb – Franjo Tuđman Airport. The concession includes: financing, the design and construction of the new airport. Operating the entire airport for close to 30 years, including the runway, passenger terminal, cargo terminal, parking lots and future property developments.

Organizational Boundary:

> **International Zagreb Airport Jsc.:** Human Resources, Legal, Finance, Integrated Management System, Sustainable Development And Risk Management, IT, Infrastructure Development, Communications department, Marketing and Commercial activities, Routes Development, Operations, Maintenance, Safety, Security, Compliance Corporative and Internal Communications

Havas Ground Handling Co. acquires the shares of MZLZ Ground Handling Services Ltd on February 10th, 2022 and the Company name is changed to HAVAS – Ground Handling Services LIc. HAVAS provides Ground handling, Cargo, General Aviation services.

MZLZ Airport Operator Ltd. and International Zagreb Airport Jsc. are now the same company, by the Decision of the Commercial Court in Zagreb, from June 30th, 2022, the merger process of the Company MZLZ - Zagreb Airport Operator Ltd. with the company International Airport Zagreb Jsc.

Commercial activities such as Catering, Duty Free Shop and advertising are under external companies.
On 25th. September 2019. MZLZ Airport Operator Ltd. and International Zagreb Airport Jsc. concluded with Resalta d.o.o. Operation and maintenance contract for heat energy production concession (boiler room).

3.2 International Zagreb Airport Operational Boundary

Operational boundary defines scope of direct and indirect emissions for operations based on company's established organizational boundary.
Sources of emissions (activities/facilities) are categorized as Scope 1, 2 or 3:

Scope 1: Direct GHG emissions that occur from sources that are owned and/or controlled by the airport, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.

Scope 2: Indirect GHG emissions from the generation of purchased electricity, steam, heat or cooling consumed by the airport. Scope 2 emissions physically occur at the facility where purchased electricity is generated.

Scope 3: All other indirect emissions, which are a consequence of the activities of the airport but occur from sources not owned and/or controlled by the company (e.g., aircraft movements, etc.). Such sources can be located within or outside the airport premises (geographical boundary).

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	CONTROL Facilities, services, activities and equipment for which the airport company has ownership/control.	GUIDE Facilities, services, activities, and equipment owned / controlled by subcontractors, close partners and suppliers for which the airport company can provide guidance.	INFLUENCE Facilities, services, activities and equipment owned/controlled by loose partners, tenants, customers, government agencies, etc. which the airport company can only influence.	INTERNAL Department or third party with responsibility for emission source	CHANGES
Scope 1 Direct Emissions					
Mobile Sources	Company cars			International Zagreb Airport Jsc.: Airside operations Department, Electronics Maintenance Department, De-icing and Snow Removal Department, RFFS - Fire Department, Construction Maintenance Department, Biological protection, Electro-energetic maintenance, Airport Activities Coordinators, - Motor cars of International Zagreb Airport Jsc.	MZLZ Ground Handling Services Ltd Outsourced by HAVAS from 10.02.2022. MZLZ Airport Operator Ltd.: it merged with International Zagreb Airport Jsc. 30.6.2022.
		Boilers		Resalta Jsc.	Outsourced since 25.9. 2019.
Stationary sources	Refrigerant leakage			International Zagreb Airport Jsc. Maintenance Department	N/A.
	Emergency generators			International Zagreb Airport Jsc. Maintenance Department	N/A

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Other	Firefighting exercise - Fire suppression CO2			International Zagreb Airport Jsc. RFFS - Fire Department	N/A
Scope 2 Indirect emissions					
Stationary		Purchased electricity		Distribution: HEP ODS Supply: HEP - Opskrba d.o.o.	Guarantees of Origin (GOs)
Scope 3 Other Indirect Emissions					
Mobile Sources		Surface access emissions		Staff travel in own vehicles and with bus. Business travel of airport company staff. Passenger travel in cars and bus.	N/A
		APU and engine testing		Airlines	N/A
			LTO cycle	Airlines	N/A
		3rd party vehicles/ground support equipment		HAVAS – Ground Handling Services Llc.	MZLZ Ground Handling Services Ltd Outsourced by HAVAS since 10.02.2022.

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4. Carbon Management policy

ZAGREB AIRPORT POLICY COMMITMENT TO EMISSIONS REDUCTION

MZLZ commitment to reduce CO_2 emissions ■ our dedicated Policy

As a key player in Croatia, MZLZ strives to be exemplary and ambitious in respecting the environment. The implementation of an Environmental Management System according to ISO 14001 as part of the Integrated Management System, LEED passenger building certification and commitment to achieve net zero carbon emissions by 2050 clearly demonstrates our commitment to Sustainable Development.

MZLZ's Integrated Management System policy aims to:

- systematically incorporate the environment into its activities
- make it a responsible player
- prevent
- promote our values and pass on the best practice

We take the environmental aspect into consideration in our actions and perform activities with the utmost respect for the environment.

Airport Carbon Management Strategic Plan 2023-2026

It is a goal of MZLZ, within the context of its strategic plan for the period 2023 – 2026, to become a benchmark in Europe for customer satisfaction, economic performance, sustainable development and move towards zero emissions by 2050.

For this to happen, we set ourselves the ambitious target of reducing the internal CO_2 emissions with, at the same time, improving the level in quality of service and taking into account the growth in airport capacity.

Our 3-year plan includes:

- Electricity consumption reduction: lighting replacement from halogen to LED, installation of RWY guard lights, reconstruction of LV switchgear in TS-2, replacement of approach lights 22, reconstruction of flashers, replacement of RWY edge lights.
- Gas and oil consumption reduction: reconstruction of old boiler room and heat substations, replacement of old chillers, replacement of old hot water pipelines with pre insulated pipes, enhanced maintenance and modification of HS Technical base, Catering and Cargo building, water consumption reduction through investment in pipeline/valves replacement and better consumption control through investments in additional water meters, investing in existing facilities improving building physics (doors, windows, fasade instalation).
- Renewable energy: use of electricity from renewable sources, additional photovoltaic plant installation, hot water production using sun collectors.
- Control of electricity, water, gas, oil consumption: improvement of HVAC management through management and control of BMS system.
- Implementation of the lifecycle plan: replacement of old equipment
- Training: employee/stakeholders' education and informing (through presentations/leaflets) in order to highlight importance of energy efficiency.
- Sustainable fleet: vehicles electrification and implementation of electric charging points to supply electric vehicles
- Emission offset projects: carbon removal through planting trees based on cooperation with the local community

Our target is to reduce CO_2 emissions (Scope 1 and Scope 2) by 17% between 2023 and 2026

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ZAGREB AIRPORT POLICY COMMITMENT TO EMISSIONS REDUCTION

Policy on energy

Background and stakes involved

As an employer, planner, and manager of infrastructures, MZLZ impacts the environment of its various sites. The business is committed to combating climate change and limiting the effects of its activities, especially in terms of greenhouse gas emissions.

In energy terms, MZLZ aims to bring consumption under control and to go-on experiencing the implementation of renewable energies facilities, all the while taking into the account the comfort and satisfaction of our customers.

The company's actions will be organized within a specific management system.

MZLZ coordinates the actions to be undertaken and annually updates the commitments it has made.

Commitments

In line with its Integrated Management System's policy and in order to limit its impact on the environment, MZLZ commits to:

1. Reduce the CO_2 emissions by 17% between 2023 and 2026
2. Reduce energy consumption by 20% (electricity, heating and cooling) between 2023 and 2026
3. Carry on with the use of solar panels
4. Offer tools for increasing employee awareness in order to modify behavior

Policy on transportation & air quality

Background and stakes involved

Airport activities and air traffic emit greenhouse gases and local pollutants. For the airport manager, internal emissions are linked in large part to energy consumption and vehicles. The main indirect emissions are linked to air traffic and airport access routes.

Commitments

In line with its Integrated Management System's policy and in order to limit its impact on the environment, MZLZ commits to:

1. Monitoring: implement regular Air Quality monitoring
2. Employee transportation: use soft mode of transport for employee and implement video-conferencing
3. Facilitating the reduction of aircraft emissions on the ground: contribute to limiting the use of APUs and GPUs through the provision of 400htz units on each Passenger Boarding bridge of the New Passenger Terminal
4. Reduce the ground vehicles emission: implement the vehicle lifecycle plan
5. Reporting: annually quantify our emissions of CO_2 and greenhouse gases
6. Managing: maintain level 3 certification under the *Airport Carbon Accreditation* scheme

Velika Gorica, January the 18th 2023

Huseyin Bahadir BEDIR
President of the Board and CEO

David GABELICA
Member of the Board

Nicolas Maurice Vladimir DUTHILLEUL
Member of the Board

5. Carbon management programmes – Action plan

International Zagreb airport has developed a Carbon Management Plan with purpose to demonstrate the meaningful efforts by the airport to reduce its emissions in line with the set target and policy statement. Plan covers Scope 1 and 2 emissions as they have been defined in the carbon footprint. This Plan will be updated at least every three years.

Action Plan (2023– 2026)							
No	Type	Action	Location	In charge	Resources	Status	Annual CO2 reduction (tones)
INTERNAL EMISSIONS							
HEAT ENERGY, WATER, GAS, OIL CONSUMPTION REDUCTION							
1	Energy Saving	Renewal of hot water pipelines-OPEX,CAPEX	Landside	Maintenance	Capex 2025 Capex 2026		9
2	Energy Saving	Reconstruction and modernization of heating substation in Technical base, including design,	Landside	Maintenance	Capex 2024 Capex 2025		12
3	Energy Saving	Fan-coil replacement in Adm. Building,	Landside	Maintenance	Capex 2025 Capex 2026		2
4	Energy Saving	Solar plant on Technical base, 250 kW	Landside	Maintenance	Capex 2024		53
5	Energy Saving	Radiators replacement & thermostatic valves installation,	Landside	Maintenance	Capex 2025		N/A-lack of data
6	Energy Saving	Enhanced maintenance and modifications of HS Cargo - regulation over outside temperature refurbishing	Landside	Maintenance	Capex 2025		N/A-lack of data
CONTROL OF ELECTRICITY, WATER, GAS, OIL CONSUMPTION							
7	Energy Saving	Improvement of HVAC energy management through optimization works and control of production and distribution of heat energy in boiler rooms (OPT & NPT), OPEX	Landside	Maintenance	Regular monitoring and control of the system	ongoing	N/A lack of data
8	Energy Saving	Improvement of HVAC energy management of heating/cooling energy consumption through Utility saving plan presented to users	Landside/Airside	Maintenance	Regular PR campaigns	ongoing	N/A lack of data
9	Energy Saving	Heat meters installation in substations: TPII, CATERING, CARGO, TECHNICAL BASE,	Landside/Airside	Maintenance	Regular monitoring and operation of the system	ongoing	N/A lack of data

6. Details on the responsibilities regarding the carbon footprint process

The Board of Directors is responsible for the climate change matters and related decisions.
This field of activity is fully included in MZLZ's Integrated Management System.
The IMS includes:

- ISO 9001, ISO 14001, ISO 10002
- Airport Carbon Accreditation Program of ACI

The Scope of IMS is management and operation of International Zagreb Airport.

The Director of Integrated management system, sustainable development and risk management department, as the Management Representative, reports to the Board and accompany the company's employees in the implementation of the System and more particularly of the Carbon Emission Reduction project.

Maintenance Director is in charge of the energy management activities (power supply, electricity production, lighting and monitoring). Development manager is in charge for development of airport infrastructure and related projects.

The Director of Integrated management system, sustainable development and risk management department is in charge of coordinating the Carbon Emission Reduction project activities and training the companies' staff.

All needed documentation is accessible on the Intranet and MZLZ web site

7. Results

7.1 Emissions target setting and selection of base year

Baseline year is 2023. International Zagreb Airport Jsc. has set a challenging and realistic target for emission in **absolute terms** demonstrate annual improvement in Scope 1 and 2 emissions against a three-year rolling average. For scope 3 it's also used absolute terms. It's visible in MZLZ ACI ACA Calculation table.

7.2 Data used for calculating the carbon footprint

As a part of carbon footprint calculation methodology, International Zagreb Airport used following data for calculation of the carbon footprint:

- Energy consumption data
- Fuel consumption data
- kWh of electricity produced
- LTO cycle information
- Flight information (e.g. aircraft type, flight distance)
- Other data (private vehicles, public transportation, surface access, travel, de-icing, APUs)

7.3 Procedure for the collection, documentation and processing emissions data

Source	Company / Department	Source of emission data	Collected by:
Boilers	Resalta Jsc..	External certified company – report on stationary gases.	Integrated management system, sustainable development and risk management department
Emergency generators	Electronic department	Report on - side measurement	
Firefighting exercise	RFF Department	Report on quantities	
GSE & company cars	Maintenance division Procurement department Airport operations division	Report on fuel quantities	
Refrigerant leakage	Maintenance division	Report on refrigerant leakage	
Electricity purchases	Maintenance division	Monthly maintenance report	
LTO cycle	Integrated management system, sustainable development and risk management department	Source: © 2023 EMS Envirosuite– Airport Noise Monitoring and Management – ANOMS	
APU and engine testing	Integrated management system, sustainable development and risk management department	Business development department	
Surface access emissions	HR department	surface access - staff; Transport_Tool_v2_6 surface access - passenger; Transport_Tool_v2_6	
Airport company staff business travel	Finance department	Transport_Tool_v2_6	

7.4 Emission factors, formulas and their justification

For scope 1 and 2 International Zagreb Airport calculated market based and location-based carbon footprint.

The supplier of electricity guarantees through contractual agreement to MZLZ that the electricity used by the airport is 100% produced from renewable sources with an emission factor of 0g CO2, and that the origin of the electricity is proven by canceling a sufficient number of guarantees of the origin of electricity led by HROTE, in accordance with the valid Methodology for determining the origin of electricity and Rules on the use of the register of guarantees of origin of electricity. International Zagreb Airport holds energy attribute certificate Guarantees of Origion-GOs.

Picture: certificate Guarantees of Origin-GOs

International Zagreb Airport submitted carbon footprint data using the worksheets provided by the GHG Protocol.

7.5 Adjustments for new assets or asset divestment

International Zagreb Airport had one terminal (T1) for many years. For 2019 the calculation of the three-year rolling average for T1 has emissions data for 2018, 2017 and 2016. The same is true for the calculations for 2015, 2014 and 2013.
In March 2017 it opens terminal 2 (T2), while T1 remains open. In 2017 it has emissions from T1 and partially from T2. Therefore for 2017, when demonstrating improvements, International Zagreb Airport reports T1 emissions versus the three-year rolling average for T1 only (2016, 2015 and 2014). For 2018 again compares the emissions of T1 versus the average performance of T1 only (2017, 2016, 2015) because it has no full historical data for T2.

However, for its footprint in 2022, International Zagreb Airport Jsc. includes the emissions associated with T1 and T2 as three full years of comparable data is available. In order to adjust for investment in new assets, International Zagreb Airport used Method A as following:

For 2019 compare the performance of T1 and T2 versus the performance of T1 and T2 in 2018 only, as there is only one year of historical data for the combined operation.

For 2021 compare the performance of T1 and T2 versus the average performance of T1 and T2 in 2018 and 2019, as there are two years of historical data for the combined operation.

Since 2022 the airport 's been comparing its performance of T1 and T2 versus the full three-year-rolling average again.

7.6 Quality control procedure (audits, comparisons, recalculations)

To establish systematic method of reviewing and assessing the performance of the IMS and ACI ACA requirements and to check its efficiency International Zagreb Airport has Internal Management Procedure, Ref: CC-IMS-PR-15-1 and yearly Audit Plan. Internal audit is at least once a year.

7.7 Graphic Data presentation

Table 1: Location based method A (Scope 1 and Scope 2) and Scope 3

scope	source	t CO2									
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023
SCOPE 1	boilers	2,786.80	3,122.12	2,440.24	2,740.10	3,608.51	2,751.07	2,753.28	2,418.34	1,811.90	1,693.96
	emergency generators	0.57	3.10	0.36	1.97	0.12	2.91	5.25	4.62	3.29	2.63
	firefighting exercise	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GSE & company cars	1,192.08	1,095.71	1,139.28	1,167.96	1,285.89	1,035.36	1,193.47	761.69	182.01	180.96
	refrigerant leakage	15.39	63.45	15.48	0.00	0.00	0.00	0.00	0.00	0.00	198.70
SCOPE 2	electricity purchases	2,578.85	2,597.42	4,599.57	4,092.04	5,958.68	9,042.95	8,309.58	6,146.56	-	-
SCOPE 3	LTO cycle					52,127.40	55,662.30	56,075.70	27,545.82	45,474.43	48,349.36
	APU and engine testing					5,106.84	5,415.35	6,691.55	3,194.86	5,387.76	5,761.11
	surface access emissions					8,950.07	8,344.03	9,294.99	4,477.46	8,531.06	10,146.46
	airport company staff business travel					4.19	3.36	18.51	1.44	1.20	3.86
	GSE & company cars HAVAS									678.15	794.70
total (scope 1 + scope 2)		6,573.68	6,881.79	8,194.93	8,002.07	10,853.19	12,832.29	12,261.58	9,331.20	1,997.20	2,076.25
3 - year average (scope 1 + scope 2):		2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018-2021	2019-2022	2021-2023
				7,216.80	7,692.93	9,016.73	10,562.52	11,982.35	11,475.02	7,863.33	4,468.22
year vs 3 - year av. (scope 1 + scope 2)					10.88%	41.08%	42.32%	2.33%	-18.68%	-74.60%	-53.53%
total (scope 1 + scope 2 + scope 3)						77,041.70	82,257.34	84,342.33	44,550.77	62,069.80	67,131.73
total (scope 3)						66,188.51	69,425.05	72,080.75	35,219.57	60,072.60	65,055.48

Table 1 shows International Zagreb Airport carbon footprint from each year in period 2013.-2023. in tones of CO2. For calculation of CO2 emissions for Scope 1 and Scope 2, location-based approach is used. Carbon footprint is also shown in Graph 1. The reduction in CO2 emissions for scope 1 and 2 in 2022. compared to three-year average is -53,53 %.

Graph 1: Location based method A (Scope 1 and Scope 2) - Total Carbon footprint

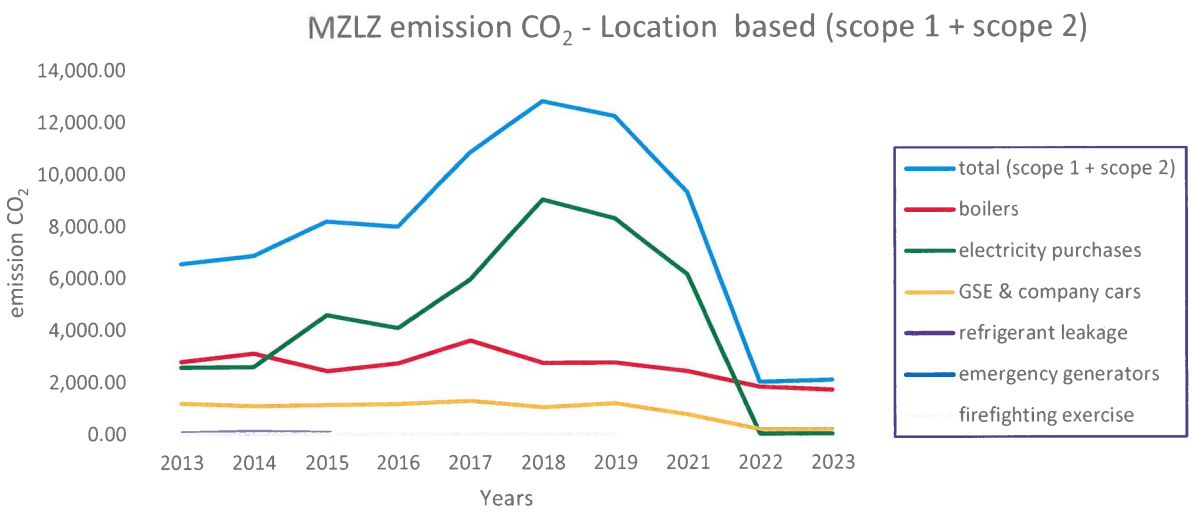
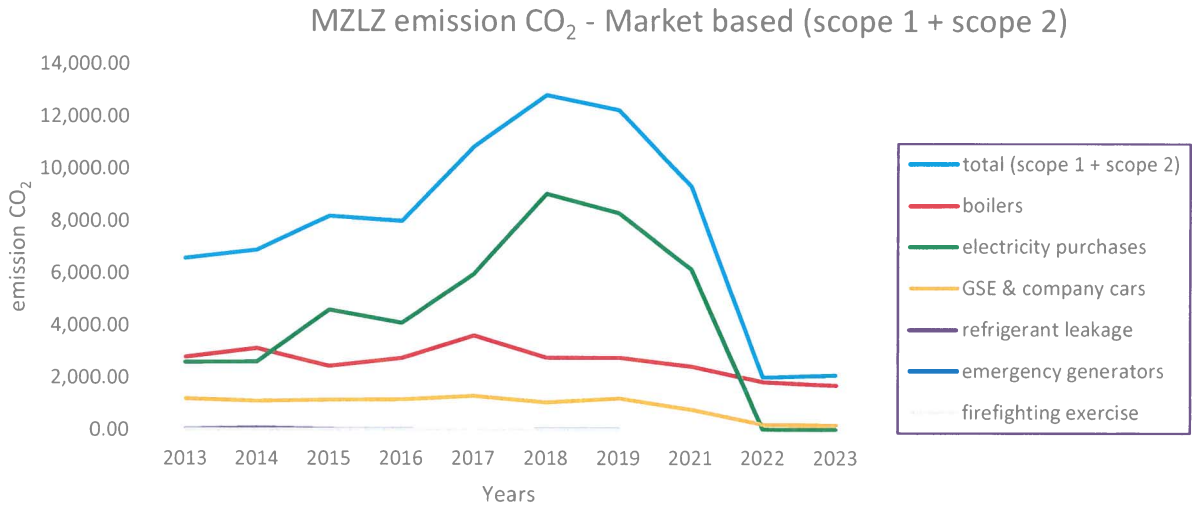


Table 2: Market based method B (Scope 1 and Scope 2) and Scope 3

scope	source	t CO2									
		2013	2014	2015	2016	2017	2018	2019	2021	2022	2023
SCOPE 1	boilers	2,786.80	3,122.12	2,440.24	2,740.10	3,608.51	2,751.07	2,753.28	2,418.34	1,811.90	1,693.96
	emergency generators	0.57	3.10	0.36	1.97	0.12	2.91	5.25	4.62	3.29	2.63
	firefighting exercise	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GSE & company cars	1,192.08	1,095.71	1,139.28	1,167.96	1,285.89	1,035.36	1,193.47	761.69	182.01	180.96
	refrigerant leakage	15.39	63.45	15.48	0.00	0.00	0.00	0.00	0.00	0.00	198.70
SCOPE 2	electricity purchases	2,578.85	2,597.42	4,599.57	4,092.04	5,958.68	9,042.95	8,309.58	6,146.56	-	-
SCOPE 3	LTO cycle					52,127.40	55,662.30	56,075.70	27,545.82	45,474.43	48,349.36
	APU and engine testing					5,106.84	5,415.35	6,691.55	3,194.86	5,387.76	5,761.11
	surface access emissions					8,950.07	8,344.03	9,294.99	4,477.46	8,531.06	10,146.46
	airport company staff business travel					4.19	3.36	18.51	1.44	1.20	3.86
	GSE & company cars HAVAS									678.15	794.70
total (scope 1 + scope 2)		**6,573.68**	**6,881.79**	**8,194.93**	**8,002.07**	**10,853.19**	**12,832.29**	**12,261.58**	**9,331.20**	**1,997.20**	**2,076.25**
3 - year average (scope 1 + scope 2):		2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018-2021	2019-2022	2021-2023
				7,216.80	**7,692.93**	**9,016.73**	**10,562.52**	**11,982.35**	**11,475.02**	**7,863.33**	**4,468.22**
year vs 3 - year av. (scope 1 + scope 2)					**10.88%**	**41.08%**	**42.32%**	**2.33%**	**-18.68%**	**-74.60%**	**-53.53%**
total (scope 1 + scope 2 + scope 3)						**77,041.70**	**82,257.34**	**84,342.33**	**44,550.77**	**62,069.80**	**67,131.73**
total (scope 3)						66,188.51	69,425.05	72,080.75	35,219.57	60,072.60	65,055.48

Table 2 shows International Zagreb Airport carbon footprint from each year in period 2013.-2022. in tones of CO2. For calculation of CO2 emissions for Scope 1 and Scope 2, market-based approach is used. Carbon footprint is also shown in Graph 2. The reduction in CO2 emissions for scope 1 and 2 in 2022. compared to three-year average is -53,53%

Graph 2: Market based method B (Scope 1 and Scope 2) - Total Carbon footprint



8. Contact person responsible for the carbon footprint and the report

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