CO2 Emission Reduction State Action Plan

- Update -

Civil Aviation Authority of Israel (CAAI)

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1. Introduction

According to the ICAO Assembly resolution A40-18, the Member States are invited to prepare and submit a State Action Plan to reduce international aviation emissions of CO2 (carbon dioxide) greenhouse gases, including national actions, as well as activities implemented regionally or on a global scale as the result of bilateral and regional/multilateral agreements.

States should distinguish between domestic and international aviation. The impact of measures on domestic aviation may be considered a co-benefit of ICAO's global aspirational goals.

Emissions from ground support equipment operations and airport-related ground transportation are considered domestic emissions and are beyond the scope of Resolution A40-18. However, some States may wish to consider the aviation sector as a whole. In such cases, States may provide relevant additional information to help explain their strategies.

For action plans to fulfil their purpose in accordance with the provisions of Resolution A40-18, they should contain the following five elements:

1. *Contact information*. The focal point and any other person(s) responsible for the compilation and submission of the action plan
2. Baseline (without action) fuel consumption CO2 emissions and traffic
3. *Measures to mitigate CO2 emissions*. The measures being proposed to address CO2 emissions from international aviation, distinguishing between those that are already in place and those that are being considered for future implementation, should be listed.
4. *Expected results* (fuel consumption, CO2 emissions and traffic with the actions in #3 being taken). Similar to #2, in order for ICAO to understand the global effect of the actions being proposed by States, projected fuel consumption and traffic for the same future years provided in #2 that quantifies the effect of the actions listed in #3 should be submitted.
5. Assistance needs. A description of any specific needs (for example, financial, technological or capacity building) for the implementation of future actions should be described, if applicable.

This document is an update of the previous State Action plan submitted in 2020. The major changes since the last submission are the airlines fleet's composition and updates of their future equipage plans. These changes will reduce the CO2 emission in the near future, nevertheless, due to the pandemic many planes have been frozen or delayed, some of the companies halted their equipping planes and same their efficiency measures.

2. Contact information

The focal point for the compilation and submission of the action plan are listed below:

Name of the Authority	Civil Aviation Authority of Israel
Point of Contact	Jonathan Shachar Luzzatto
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Point of Contact	Yaniv Ronen
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Country	ISRAEL
State/Province	Israel
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3. Airlines in Israel – International Flights

3.1. El Al Israel Airlines Ltd.

El Al Israel Airlines Ltd. (El Al) is the largest international airline company with the largest fleet in Israel.

The Company operates international flights. Services include commercial flight services, charter flights and cargo. Further activities include the provision of catering services to its own and leased aircraft, such as at arrival and departure desks, cargo handling, security services and maintenance services for its own aircraft, as well as for other companies.

In the recent years El Al took out of service the old 737,747 fleets. El AL introducing the new 787-8,787-9. The new fleet composition includes efficient and economical new aircraft.

Future measures to reduce the CO2 emission and fuel burn are presented in par. 5.3

The current fleet is presented in table 1

Table 1 – ELAL Fleet

Fleet		
Aircraft	In Service	Orders
Boeing 737-800	16	-
Boeing 737-900ER	8	-
Boeing 747-400	0	-
Boeing 777-200ER	6	-
Boeing 787-8	3	-
Boeing 787-9	12	-
Boeing 747-400F	2	-
Total	47	-

3.2. Arkia Israeli Airlines Ltd.

Arkia Israeli Airlines Ltd. operates as an international and domestic airline carrier in Israel. It offers charter flights, as well as scheduled flights, from Israel to various travel destinations in Europe; domestic flights in Israel; vacation packages; membership programs; and tourism and air travel services for business people.

The company's services also include aircraft maintenance, aircraft leasing to foreign airlines, aviation management, and consulting, as well as cargo shipping.

In the recent years Arkia took out of service the old 767, EMBRAER E190-100 from the fleets. Arkia has introduced the new Airbus 321neo. The new fleet composition includes efficient and economical new aircraft.

Future measures to reduce the CO2 emission and fuel burn are presented in par. 5.3

The current fleet is presented in table 2

Table 2 – Arkia Fleet

Fleet		
Aircraft	In Service	Orders
Airbus A321neo	2	-
Embraer ERJ-190	0	-
EMBRAER E190-200	3	-
Airbus A330neo	0	-
Boeing 757	0	-
Total	5	-

3.3. ISRAIR Airlines & Tourism Ltd.

ISRAIR Airlines & Tourism Ltd. operates as an international and domestic airline carrier in Israel. It operates domestic flights to Eilat, and scheduled flights to overseas destinations in Israel and internationally. The company also provides cultural tourism services; offers vacation packages to events; and provides car rental services. In addition, it operates charter flights for wholesalers to a range of destinations in the Mediterranean (in Cyprus and Greece) and Europe. The company was founded in 1989 and is based in Tel Aviv, Israel.

In the recent years the company took out of service the B737-800 from the fleets. ISRAIR has introduced Airbus A320-200.

Future measures to reduce the CO2 emission and fuel burn are presented in par. 5.3

The current fleet is presented in table 3

Table 3- ISRAIR fleet

Fleet		
Aircraft	In Service	Orders
ATR-72	3	-
Airbus A320	5	-
Total	8	-

3.4. CAL – Cargo Airlines Ltd.

CAL Cargo Airlines Ltd. is an all-cargo airline with its corporate headquarters in Airport City, Israel. The airline operates daily scheduled cargo flights and charter services carrying nonstandard goods and general cargo internationally. Its main base is Ben-Gurion Airport, serving Tel Aviv, and it has a hub at Liège Airport (Belgium). The airline carries all categories of nonstandard cargo: temperature controlled pharmaceutical and healthcare products, live animals, dangerous goods, oversize and overweight cargo, fresh perishable products and valuable goods

The carrier operates cargo services from its main hub at Ben-Gurion International Airport and its secondary hub at Liege Airport to the Netherlands (seasonal), United States and Cyprus.

Future measures to reduce the CO2 emission and fuel burn are presented in par. 5.3

The current fleet is presented in table 4

Table 4- CAL Cargo fleet

Fleet		
Aircraft	In Service	Orders
Boeing 747-400ERF	1	-
Boeing 747-400F	1	-
Total	2	-

3.5. Aircraft withdrawn and introduced

The Israeli airline companies are renewing the fleets, introducing new generation aircraft including the Boeing 787, Airbus 321neo, and retiring the old generation aircraft. The new aircraft will dramatically reduce the fuel consumption and thereby reduce the amount of CO2 emission. The following table presents the number and type of aircraft that were withdrawn from service during the years 2019-21.

Table 5

Aircraft	Withdrawn from use	Introduce to service
Boeing 747-400	4	-
Boeing 747-200F	2	-
Boeing 747-400F	3	3
Boeing 767-300	3	-
Boeing 787-8	0	3
Boeing 787-9	-	5
Airbus A321neo	-	-
ATR 72	5	
EMBRAER E190-100	1	-
Boeing 737-800	2	-
Total	**20**	**11**

4. International airports in Israel

4.1. IAA- Israel Airports Authority

Ben-Gurion airport is taking actions to reduce the impact on the environment by promoting and implementing programs for energy management, reduction of emissions and noise levels, waste and recycling, and any other issue that has influence on the environment. One of the most challenging issues is global warming and climate change.

The main way in which companies face the challenge today is to reduce greenhouse gas emissions as a result of human activity.

Since 2010, IAA (Israel Airports Authority) is mapping the airport carbon footprint.

In 2015 IAA joined the international ACA program - Airport Carbon Accreditation, managing and mapping the carbon emissions.

In 2016, the field was certified to level 2 according to the plan - emissions management. In this framework, a comprehensive plan was drawn up to manage and reduce greenhouse gas emissions in the field, including detailing the measures and setting targets for reduction. The plan also includes details of an organizational framework that supports its implementation, a strategy for implementing projects to reduce emissions, training employees and increasing the awareness of stakeholders (employees, suppliers and franchisees, and the traveling public), as well as conducting periodic inspections and controls following the pace of the plan's implementation. This document presents the updates to the emissions management plan, including setting updated goals for reducing emissions until 2025 and planned projects to achieve this goal.

The organizational framework for emissions management

The policy of the Authority for the Management of Greenhouse Gas Emissions is included in the framework of the general environmental policy. The policy was updated in 2020 and approved by the management as part of the annual management survey conducted in April 2021. The environmental policy of the authority is published on the authority's website.

As part of the preparations for the implementation of the carbon footprint management plan, a dedicated steering committee is operating consisting of the relevant officials in the various units. The main areas of activity of the committee include:

• The formulation of the strategic vision in the field of greenhouse gas emissions

• Determining and approving targets for saving and reducing emissions

• Preparing and approving a work plan to implement energy saving measures and methods

• Monitoring and controlling the progress (including monitoring and measuring the achieved savings)

• Identifying and removing barriers to implementing the program

Emission reduction targets

The emissions management plan from 2016 presented a goal of reducing emissions by 10% in average emissions per passenger in 2020, compared to 2016, to a level of 4.23 kg CO2e per passenger. In practice, this goal was already achieved in 2017. In 2019, the average level of emissions per passenger in the field was 3.02 kg CO2e per passenger - a decrease of about 35% compared to the base year. During this period, there was an increase of approximately 38% in the number of annual passengers at the airport, to approximately 24.8 million passengers, while the volume of greenhouse gas emissions decreased by approximately 11% in absolute terms.

The calculation of the reduction target for 2025 refers to the data of 2019 as the base year. Due to the decisive impact of the corona epidemic on the activity of the global aviation industry and on the aviation industry in particular, the volumes of emissions in 2020-21 are not representative and it was preferred to refer to the full year of activity in a normal activity format as a basis for reference.

The updated emissions target is 2.56 kg of CO2e per passenger - a reduction of approximately 15% compared to the base year 2019. The target is based on an expectation that the scope of activity in the field in the target year will be approximately 24.5 million passengers, in light of the expected recovery of the aviation industry with the decline of the Corona effect on the industry.

IAA - Activities for emission reduction

Table 6

Activity	Estimated CO_2 reduction (tons)
Electric generation by natural gas	3,272
Using combined cycle generator	1,665.5
Improvements in the air conditioning units	6,928.20
Replacing light fixtures and bulbs	326.8
Total	**12,192.3**

Average emissions per passenger and aircraft 2019-2025

Table 7

	2019	2025 without mitigation of action measures	2025 with mitigation of action measures	Rate of change
Passengers	24,821,600	24,500,000	24,500,000	-1.3%
Total CO2	74,924	74,924	62,730	-16.3%
Emission per passenger	3.02	3.06	2.56	-15%

(Source - IAA TLV carbon management plan may 2022)

5. Baseline for future CO2 aviation emissions

5.1. Historical data

The RTK and fuel burn from 2010-2021 were used as the baseline for forecasting fuel consumption. The data is collected and submitted by the airlines to CAAI.

Table 8

Year	International RTK	International Fuel Burn	Fuel efficiency
2010	2,653,203	724,072	0.273
2011	2,651,207	711,851	0.269
2012	2,598,901	662,461	0.255
2013	2,658,276	681,920	0.257
2014	2,592,826	695,891	0.268
2015	2,763,616	722,656	0.261
2016	3,222,640	861,715	0.267
2017	3,454,833	899,653	0.260
2018	3,565,408	901,043	0.253
2019	3,581,421	868,496	0.243
2020	1,298,809	268,705	0.207
2021	1,799,070	405,858	0.226

5.2. Reference baseline – without correcting measures

The historical data is the basis for calculating the expected RTK and fuel burn baseline. Considering the future traffic growth of the Israeli airlines, without corrective measures to reduce emissions.

Table 9

BASELINE

Year	International RTK ('000)	International Fuel burn (Tonnes)	Efficiency (Fuel burn / RTK)
2019	3,300,210.00	868,943.00	0.263
2020	3,412,417.14	894,101.93	0.262
2021	3,528,439.32	923,771.62	0.262
2022	3,648,406.26	954,485.70	0.262
2023	3,772,452.07	986,273.68	0.261
2024	3,900,715.44	1,019,167.28	0.261
2025	4,033,339.77	1,053,200.22	0.261
2026	4,170,473.32	1,088,408.04	0.261
2027	4,312,269.41	1,124,828.03	0.261
2028	4,458,886.57	1,162,499.13	0.261
2029	4,610,488.72	1,201,461.97	0.261
2030	4,767,245.33	1,241,758.80	0.260
2031	4,929,331.67	1,283,433.52	0.260
2032	5,096,928.95	1,326,531.71	0.260
2033	5,270,224.54	1,371,100.63	0.260
2034	5,449,412.17	1,417,189.27	0.260
2035	5,634,692.18	1,464,848.39	0.260
2036	5,826,271.72	1,514,130.57	0.260
2037	6,024,364.96	1,565,090.23	0.260
2038	6,229,193.36	1,617,783.70	0.260
2039	6,440,985.94	1,672,269.31	0.260
2040	6,659,979.46	1,728,607.37	0.260
2041	6,886,418.76	1,786,860.33	0.259
2042	7,120,557.00	1,847,092.75	0.259
2043	7,362,655.94	1,909,371.45	0.259
2044	7,612,986.24	1,973,765.51	0.259
2045	7,871,827.77	2,040,346.43	0.259
2046	8,139,469.92	2,109,188.10	0.259
2047	8,416,211.89	2,180,366.99	0.259
2048	8,702,363.10	2,253,962.15	0.259
2049	8,998,243.44	2,330,055.34	0.259
2050	9,304,183.72	2,408,731.12	0.259

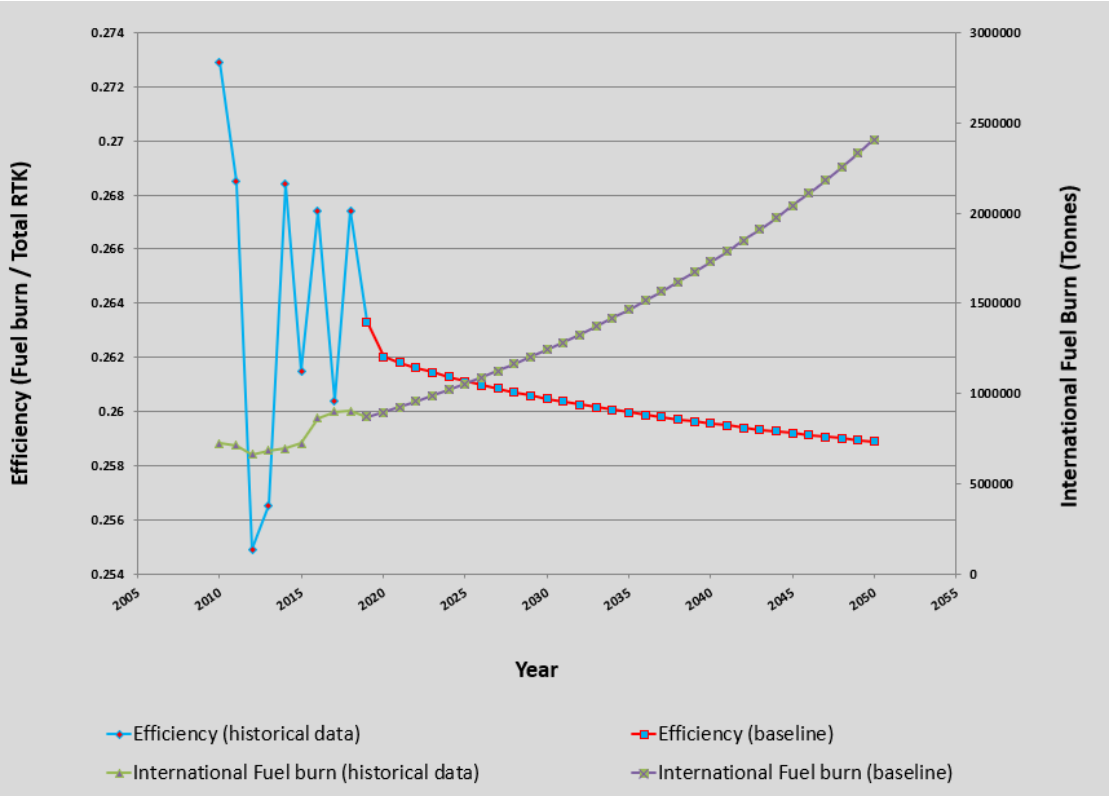

Figure 1

5.3. Basket of Measures to Reduce CO2 Emissions

One of the major changes that will influence dramatically the fuel consumption are the airline's fleet composition, specifically introducing new generation aircraft to replace the old types of aircraft. The new fuel-efficient aircraft – Boeing 787, airbus 321neo are entering into service and will reduce the fuel consumption.

Other measures of improved air traffic management and infrastructure use, more efficient operation and maintenance will contribute to reduction in fuel consumption and therefore reduce emissions.

The following ongoing and future measures are used to calculate and estimate the CO2 emission. The categories of the measures are:

a) aircraft-related technology;
b) improved air traffic management and infrastructure use;
c) more efficient operations;
d) Airport improvements/other.

Table 10

Measure Description	
Aircraft-related technology development - purchase of new aircraft	Implementation year
ELAL - Boeing 787-8 – 2 airplanes	2019
ELAL - Boeing 787-9 – 12 airplanes	2017-2020
Arkia -Airbus 321neo – 3 airplanes	2018-2020
improve ground operations	
Israir - Reduce use of APU	2016-2021
ELAL - Reduce use of APU	2014-2021
improve the use of optimum flight levels	
ELAL - Increase flight level during cruise in B737	2014-
improve the use of optimum routings	
ELAL - Using cost index software	2015-
Arkia - Using Cost Index software	2017-
Israir - Using Cost Index software	2015-
C.A.L. - Using Cost Index software	2007-
More efficient operations	
minimizing weight	
ELAL - reducing water amount	2016-
ELAL - removing redundant items	2019-
ELAL - Reduction in superfluous route reserve	2016
Israir – Reducing water amount	TBD
Israir - replacing aircraft seats	2020
Israir - Removing redundant items	TBD
C.A.L - reducing water amount, removing redundant / unnecessary items	2007-
minimizing flaps (take-off and landing)	
ELAL - Lowering acceleration altitude and flaps retracting altitude	2014-
minimizing reversers use	
Israir - switch to idle position in thrust reversers	2018-
single engine taxi	
ELAL - In taxiing (turn off one engine) after landing,	2014-

Measure Description	
Israir - In taxiing (turn off engine) after landing	2012-
Arkia - In taxiing (turn off engine) after landing	2016-
loading	
ELAL - Flight balance - loading – AFT CG	2014-
Israir - Flight balance – AFT CG loading	2012-
ARKIA - Flight balance – AFT CG loading	2018-
reduced speed	
Arkia - reduced power for take-off and climb. Continuous climb and decent	2018-
Israir - Use of FMGS managed speed	2012-
optimized aircraft maintenance	
ELAL - Engine wash	2014-
Arkia - Engine wash	2019-
Arkia - aircraft external wash	2019-
Israir – aircraft external wash	2017-
C.A.L. - aircraft external cleaning	2007-
Other	
ELAL - extending landing gear at lower altitude	2015-
Arkia - extending landing gear at lower altitude	TBD
ELAL - Location of alternate airports closer to the destination and obtaining CAAI's approval	ongoing
ELAL - Dispatching to airports that have no alternate airport in good weather implementation of RNP approaches	ongoing
Israir - Weather procedure to allow dispatch to alternate airport	ongoing
Israir - extending landing gear at lower altitude	TBD
Airport improvements	
Changes in Operational procedures in Ben-Gurion airport as a result of runways system upgrade.	2015-
Changes in Operational procedures using PBN approach procedures	TBD
Reducing the use of APU in Ben-Gurion airport	Ongoing
Ben-Gurion airport Carbon footprint Accreditation	Ongoing
Green Building in Ben-Gurion airport	Ongoing

Note: the reported measures are based on airline reports and future activities plans.

5.4. Expected results – including correcting measures

The ICAO's Environmental Benefit Tool was used to calculate the future emission and expected results, based on historical data and measures to reduce emissions. The EBT incorporate fuel saving calculations for each type of aircraft (narrow body, wide body, turboprop etc.) and each type of measure (aircraft technology, more efficient operations, improved air traffic management and infrastructure use etc.).

The following results were achieved.

Table 11

EXPECTED RESULTS : CO_2 SAVINGS

Year	Annual CO_2 emissions before implementation of mitigation actions (Tonnes)	Annual CO2 emissions after implementation of mitigation actions (Tonnes)	Annual CO_2 savings (Tonnes)	Change CO_2 savings (%)
2019	2,745,859.88	2,321,967.12	423,892.76	-15.44
2020	2,825,362.10	2,358,421.98	466,940.11	-16.53
2021	2,919,118.32	2,452,178.21	466,940.11	-16.00
2022	3,016,174.82	2,549,234.71	466,940.11	-15.48
2023	3,116,624.83	2,649,684.72	466,940.11	-14.98
2024	3,220,568.61	2,753,628.50	466,940.11	-14.50
2025	3,328,112.70	2,861,172.58	466,940.11	-14.03
2026	3,439,369.41	2,972,429.30	466,940.11	-13.58
2027	3,554,456.56	3,087,516.45	466,940.11	-13.14
2028	3,673,497.25	3,206,557.14	466,940.11	-12.71
2029	3,796,619.83	3,329,679.71	466,940.11	-12.30
2030	3,923,957.80	3,457,017.69	466,940.11	-11.90
2031	4,055,649.92	3,588,709.81	466,940.11	-11.51
2032	4,191,840.20	3,724,900.08	466,940.11	-11.14
2033	4,332,677.98	3,865,737.86	466,940.11	-10.78
2034	4,478,318.09	4,011,377.97	466,940.11	-10.43
2035	4,628,920.92	4,161,980.81	466,940.11	-10.09
2036	4,784,652.60	4,317,712.49	466,940.11	-9.76
2037	4,945,685.12	4,478,745.00	466,940.11	-9.44
2038	5,112,196.50	4,645,256.39	466,940.11	-9.13
2039	5,284,371.01	4,817,430.90	466,940.11	-8.84
2040	5,462,399.30	4,995,459.19	466,940.11	-8.55
2041	5,646,478.64	5,179,538.53	466,940.11	-8.27
2042	5,836,813.09	5,369,872.98	466,940.11	-8.00
2043	6,033,613.77	5,566,673.66	466,940.11	-7.74
2044	6,237,099.02	5,770,158.91	466,940.11	-7.49
2045	6,447,494.70	5,980,554.59	466,940.11	-7.24
2046	6,665,034.40	6,198,094.28	466,940.11	-7.01
2047	6,889,959.68	6,423,019.56	466,940.11	-6.78
2048	7,122,520.38	6,655,580.27	466,940.11	-6.56
2049	7,362,974.88	6,896,034.76	466,940.11	-6.34
2050	7,611,590.33	7,144,650.22	466,940.11	-6.13

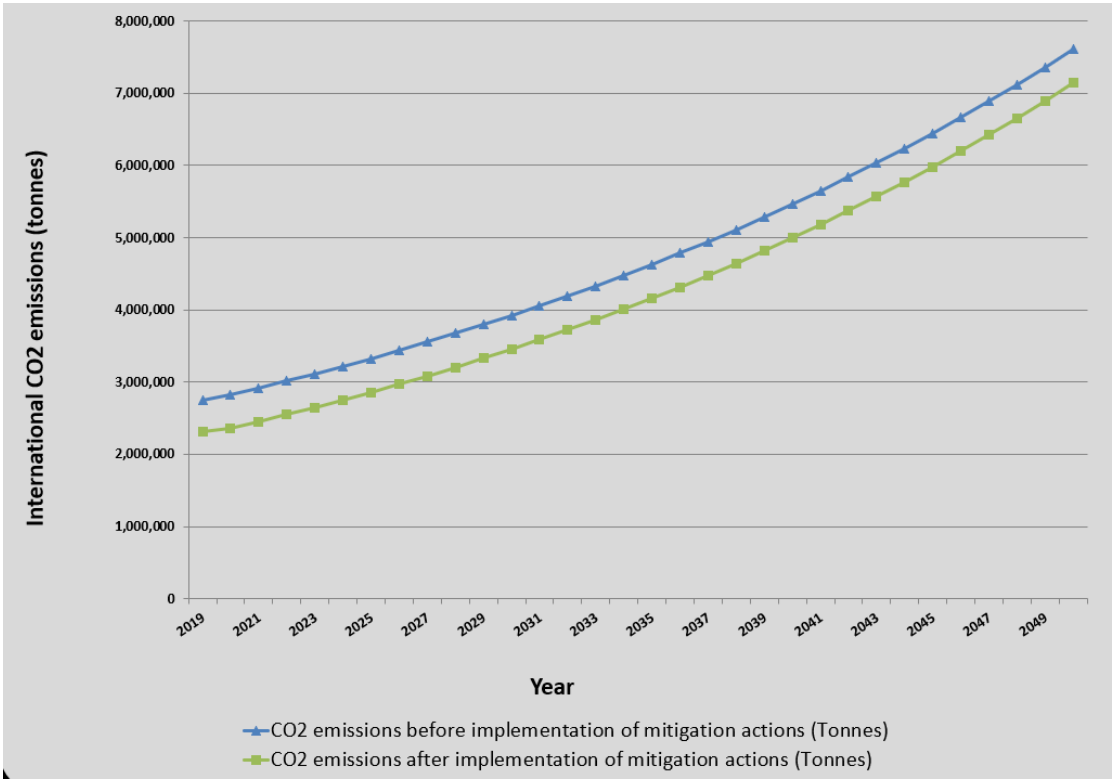
International CO2 emissions (tonnes)
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
2019
2021
2023
2025
2027
2029
2031
2033
2035
2037
2039
2041
2043
2045
2047
2049
Year
CO2 emissions before implementation of mitigation actions (Tonnes)
CO2 emissions after implementation of mitigation actions (Tonnes)

Table 12

Year	Annual Fuel burn before implementation of mitigation actions (Tonnes)	Annual Fuel burn after implementation of mitigation actions (Tonnes)	Annual Fuel savings (Tonnes)	Change Fuel savings (%)
2019	868,943.00	734,799.72	134,143.28	-15.44
2020	894,101.93	746,336.07	147,765.86	-16.53
2021	923,771.62	776,005.76	147,765.86	-16.00
2022	954,485.70	806,719.84	147,765.86	-15.48
2023	986,273.68	838,507.82	147,765.86	-14.98
2024	1,019,167.28	871,401.42	147,765.86	-14.50
2025	1,053,200.22	905,434.36	147,765.86	-14.03
2026	1,088,408.04	940,642.18	147,765.86	-13.58
2027	1,124,828.03	977,062.17	147,765.86	-13.14
2028	1,162,499.13	1,014,733.27	147,765.86	-12.71
2029	1,201,461.97	1,053,696.11	147,765.86	-12.30
2030	1,241,758.80	1,093,992.94	147,765.86	-11.90
2031	1,283,433.52	1,135,667.66	147,765.86	-11.51
2032	1,326,531.71	1,178,765.85	147,765.86	-11.14
2033	1,371,100.63	1,223,334.77	147,765.86	-10.78
2034	1,417,189.27	1,269,423.41	147,765.86	-10.43
2035	1,464,848.39	1,317,082.53	147,765.86	-10.09
2036	1,514,130.57	1,366,364.71	147,765.86	-9.76
2037	1,565,090.23	1,417,324.37	147,765.86	-9.44
2038	1,617,783.70	1,470,017.84	147,765.86	-9.13
2039	1,672,269.31	1,524,503.45	147,765.86	-8.84
2040	1,728,607.37	1,580,841.52	147,765.86	-8.55
2041	1,786,860.33	1,639,094.47	147,765.86	-8.27
2042	1,847,092.75	1,699,326.89	147,765.86	-8.00
2043	1,909,371.45	1,761,605.59	147,765.86	-7.74
2044	1,973,765.51	1,825,999.65	147,765.86	-7.49
2045	2,040,346.43	1,892,580.57	147,765.86	-7.24
2046	2,109,188.10	1,961,422.24	147,765.86	-7.01
2047	2,180,366.99	2,032,601.13	147,765.86	-6.78
2048	2,253,962.15	2,106,196.29	147,765.86	-6.56
2049	2,330,055.34	2,182,289.48	147,765.86	-6.34
2050	2,408,731.12	2,260,965.26	147,765.86	-6.13

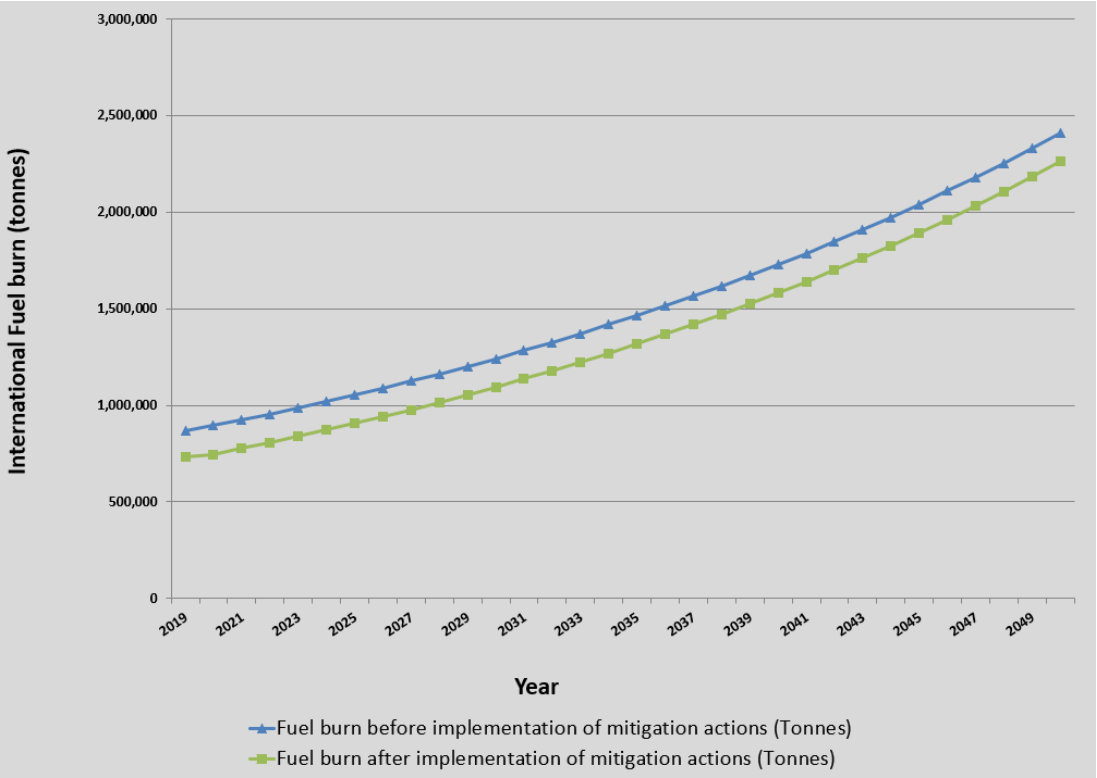

Figure 2 – expected fuel consumption

6. Summary and Conclusions

CAAI has mapped the currently known measures that could lead to fuel saving and reduction of CO2 emissions, as well as estimated future emission reduction. Mapping and estimation of expected reduction of emissions had been carried out with the assistance of stakeholders in Israel's aviation industry

Israel's Action Plan update reviews activities already implemented by the airlines and IAA (Appendix A) as well as activities planned in the future for greenhouse gas (CO2) emissions reduction from Israel's civil aviation sector.

The state action plan update incorporates the updated airline fleet composition, introducing new generation aircrafts and removing from service old aircrafts. Also, the influence of the open sky's agreement is reflected in the historic data that was used to establish the updated baseline.

The pandemic had a massive impact on the RTK as demonstrated in the historical data Table 8 for 2020-2021, the actual RTK for year 2020 is 60% lower than the expected RTK for that year.

Implementation of previous measures (Appendix A) to reduce fuel consumption are reflected in the actual fuel burn efficiency for years 2015-2021.

Table 12 reflects an actual improvement of more than 2% fuel burn efficiency when measures to reduce fuel consumption are implemented, thereby justifying the plan and its past and future implementation.

The future implementation of measures to reduce fuel consumption are expected to continuously improve CO2 emission efficiency by an average of more than 1.5 per cent per annum.

The CAAI future activities:

- Continuous overseeing and monitoring of statistical reports submitted by the air carriers in regard of fuel consumption and RTK, in order to improve data reliability.
- Ongoing monitoring, with the assistance of Israel's Aviation industry stakeholders, of the implementation of measures already included in the current plan, and developments concerning emissions reduction.
- Examine new measures and technologies that can reduce greenhouse emissions in the future.

Appendix A

Status of previous state action plan activities and measures of Airlines.

1. EL-AL

Action description	details	status
fleet renewal program	Purchase of Boeing 737-900 airplanes.	Completed
	Removal of Boeing 737-700 planes	Completed
Retrofit	Retrofit wingtip	Completed
Reduction of Aircraft Weight	Removing rear fuel tank – B747	Not implemented
	Reducing the amount of water for kitchens and bathrooms.	implemented
	Removing redundant items from Fly Away Kit in B737 and B747-400 aircraft.	implemented
Flight techniques and procedures		
	Fuel saving during taxiing before take-off – staring last engine only before take-off	Not implemented
	Fuel saving during taxiing after landing – turn off one engine after landing	implemented
	Lowering acceleration altitude and flaps retracting altitude from 1500 feet to 1000 feet (in airports that allow it).	implemented
	Extending landing gear before landing in lower altitude, from 2500 feet to 2000 feet	implemented
	Weight and balance in flight - training of load controllers and emphasizing the importance of rear center of gravity loading	implemented
	Reducing fuel amount in dispatching	implemented
	Reduction in superfluous Route Reserve Fuel	implemented

	Using Cost Index (Route planning optimization software)	implemented
	Increasing flight level	implemented
	Dispatching to European airports that have no alternate airport (in good weather conditions) - real-time weather monitoring system, NOTAM and standby in destination.	Partly implemented
	Ongoing location of alternate airports closer to the destination and obtaining CAAI's approval.	Partly implemented
	Training and approval to perform RNP approaches.	
Maintenance		
	Increasing the frequency of engines wash	implemented
	Reduction of APU utilization	implemented

2. ARKIA

Action description	details	status
fleet renewal program	Purchase of four (4) Airbus 321neo	Partly implemented
	removal of Boeing 757-300 planes	Partly implemented
Winglets Retrofit	Retrofit wingtip with Blended Winglets B757-300 airplanes	implemented
Best practice methods in flight operations in Arkia	Using Cost Index (optimization of flight routes planning, performance and flight profile according to cost data)	implemented
External wash of aircraft and engines in Arkia	Increase washes frequency - Engine wash - External wash reduces	Partly implemented

3. ISARAIR

Action description	details	status
Flight techniques and	Loading cargo to achieve optimal center of gravity	implemented
	After landing, switch to idle position (instead of full position) in thrust reversers.	implemented
	Turn off one engine after landing	Partly implemented
	Reducing APU usage on the ground	Not implemented
	Optional techniques under examination: Lowering acceleration altitude from 1500 feet to 800 feet and reduced climb thrust	Not implemented
	Single engine taxi to take-off runway	Not implemented
Retrofit	Airbus shark lets for A320 aircraft,	Not implemented
Reducing fuel amount in dispatching	Managed planning and dispatching concept, and using Cost Index (Using FWZ software for route planning optimization) - resulting in slower flight and fuel consumption saving.	implemented
	Operations - maximum use of FMGS managed speed. Exists and implemented in the fleet's procedures.	implemented
	Update dispatching weather procedure to allow direct dispatch to alternate airport and eliminating the need to dispatch to airport expected to be closed. Implementation is scheduled for early 2015 with the introduction of new regulations.	implemented
	Early acceleration during climb, if possible in terms of airspace traffic, and subject to air traffic control approval .Since most often it is not authorized by air traffic control, this procedure is not implemented in practice.	Not implemented – airspace restrictions
Reduction of aircraft weight	Partial filling of the water tank in accordance with planned	Not implemented
	Reducing additional equipment (Fly Away Kit) on the aircraft to the minimum required	Not implemented
	Flight Guard protection system - added weight of 01 kg. Total system weight after installation will be approximately 401kg, which is expected to increase overall fuel consumption by 1%.	Implemented on all aircrafts

	Reducing the amount of spare fuel taken by the crews	implemented
	Activation of Electronic Flight Bag (EFB) in the cockpit	implemented
Maintenance	Increasing frequency of aircraft's wash cycles:	Implemented with improved cleaning agent

4. C.A.L Cargo airlines

Action description	details	status
C.A.L. fleet renewal program	C.A.L. fleet renewal program: Procurement of Boeing 747-400 cargo aircraft and removal of Boeing 747-200 aircraft By 2015 the company's fleet will include 2 Boeing 747-400 airplanes, replacing Boeing 747-200. The new aircraft are about 15% more efficient in fuel consumption than the previous model.	completed
Installation of New flight management computers	Insulation of a New generation FMC flight management computers	completed
Fuel savings plan - operating procedures	Reducing excess weight	implemented
	Limiting water tank	implemented
	Periodically removing redundant items from the aircraft	implemented
	Removing unnecessary items from Fly Away Kit	implemented
	Using Cost Index (Route planning optimization software)	implemented
	Improvement of fuel consumption in cruise	implemented
	Aerodynamic external cleaning of the aircraft	implemented
	Minimizing use of APU (Auxiliary Power Unit) by using gerund air-condition	implemented
	Reducing access route reserve (beyond law requirements)	implemented
	Using wind updates in brave time broadcast to the plane	implemented
	Shorten flight time to china by using route 888	implemented