

# ICAO SEMINAR ON **GREEN AIRPORTS**

ATHENS, GREECE | APRIL 18-19, 2024





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# Istanbul Airport

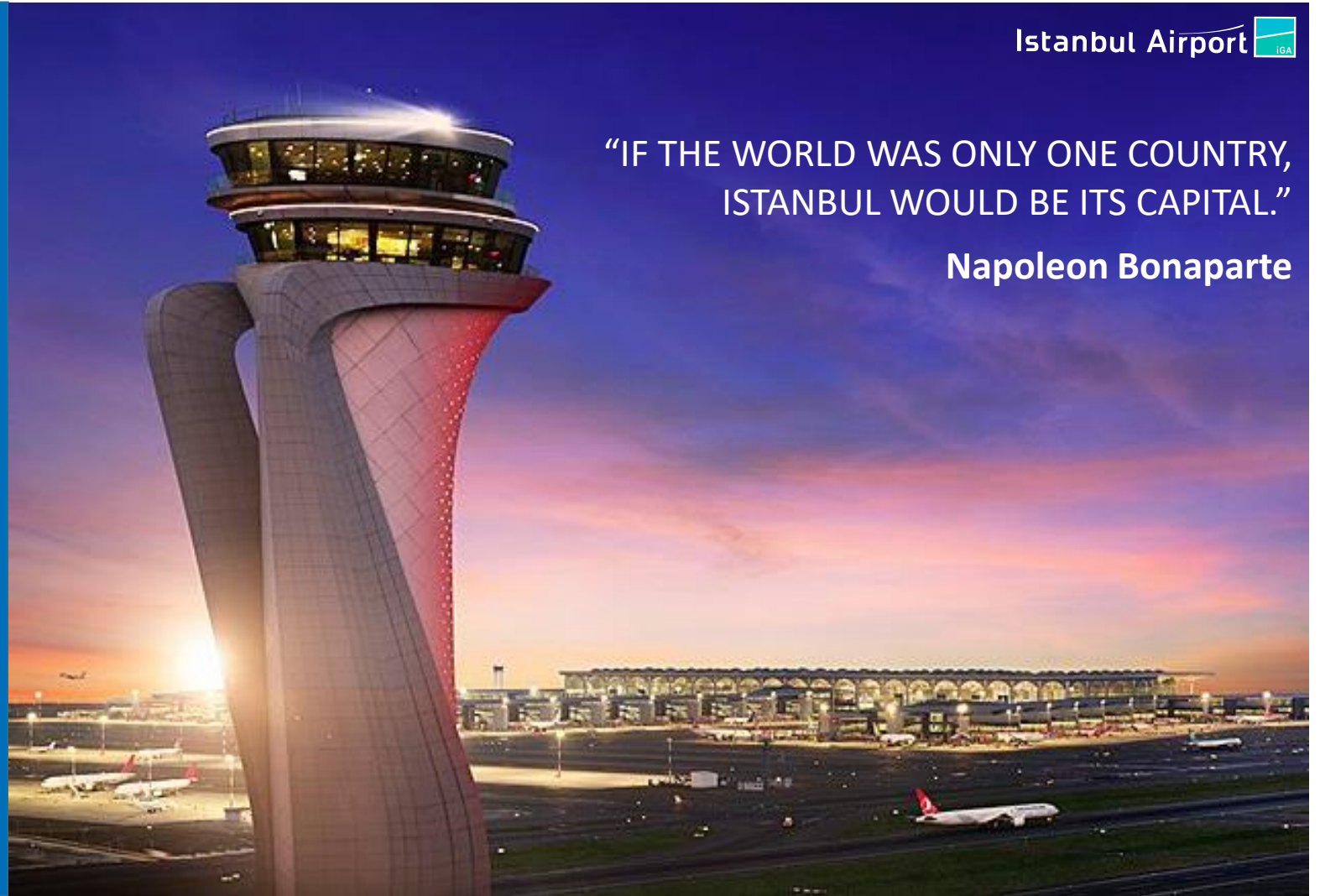


**Ismail H POLAT**  
**Chief Planning Officer**

ICAO Green Airports 2024



## iGA at a Glance



Istanbul Airport 

“IF THE WORLD WAS ONLY ONE COUNTRY,  
ISTANBUL WOULD BE ITS CAPITAL.”

**Napoleon Bonaparte**

# IGA Istanbul Airport Masterplan IV



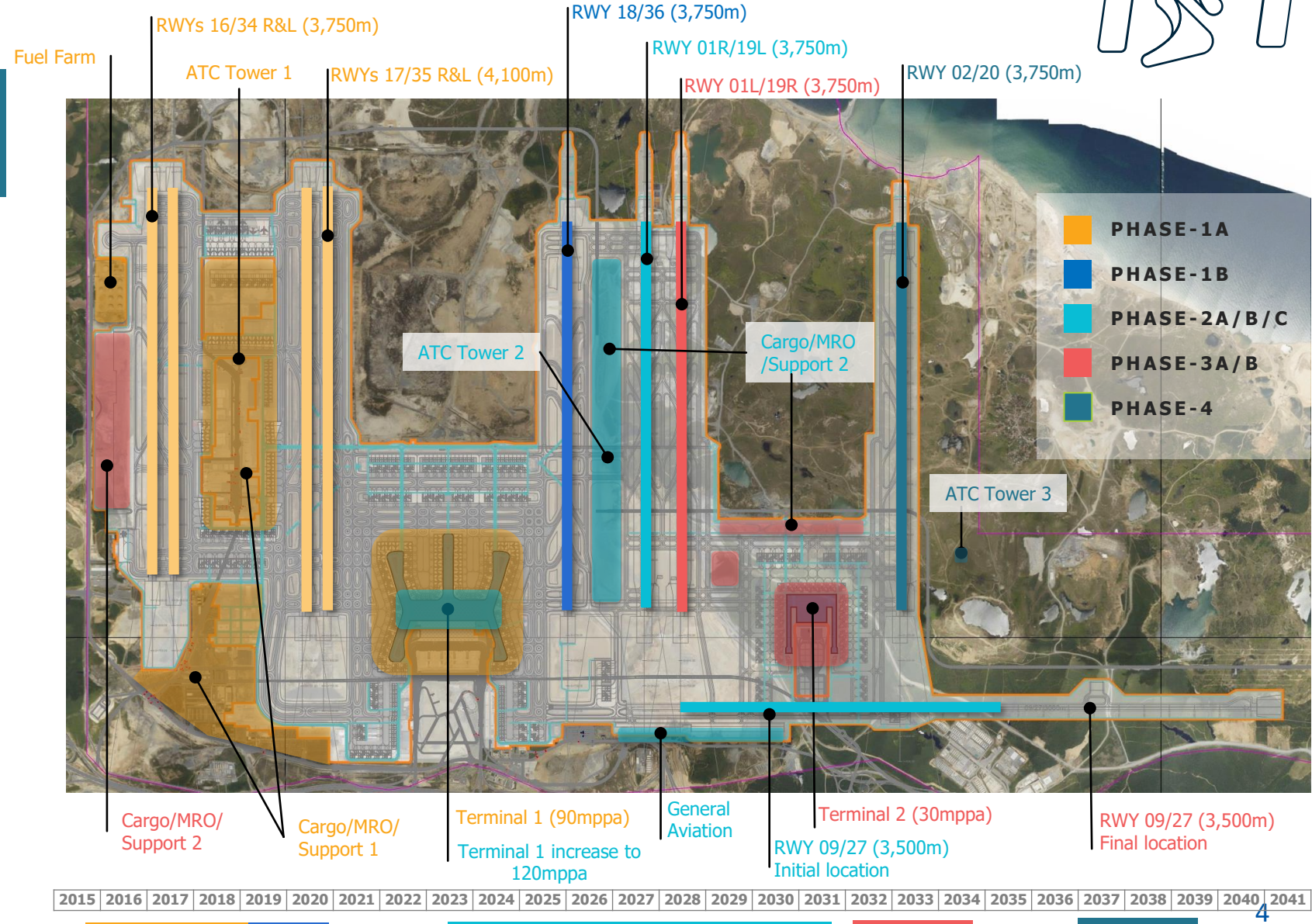
## Airport Capacity (MPPA)



PHASE 1 PHASE 2 PHASE 3 PHASE 4

Phase	Duration (months)	Scope of Work	Estimated Time Frame	
			Start	Finish
2A	24	Rwy 09/27 (E-W initial location)	Mid 2023	Mid 2025
2B	24	Increasing the capacity of Terminal 1 from 90mil to 120mil	Beginning of 2025	End of 2027
2C	24	Rwy 01R/19L (3rd aux Rwy)	Beginning of 2026	End of 2028
3A	30	Terminal 2 (30mil)	Beginning of 2029	Mid 2031
		Rwy 09/27 (E-W final location)		
3B	30	Rwy 01L/19R (4th main Rwy)	Beginning of 2032	Mid 2034
4	30	Rwy 02/20 (5th main Rwy)	Beginning of 2037	Mid 2039

Current Facilities	Area
Terminal Building (120 Million pax/year)	1.370.000 m <sup>2</sup>
Multistorey Carpark (18.000 cars)	624.000 m <sup>2</sup>
Other Support Facilities	1.170.000 m <sup>2</sup>
<b>Phase-1 Terminal Area</b>	<b>3.164.000 m<sup>2</sup></b>



# iGA Istanbul Airport Sets a New Standard

# 2023



## Flights



Number of Flights in **2023**

Annual

Daily Average

505,968

1386

Number of Flights in 2019

Annual: 329.876 - Daily Average: 1386

## Cargo Volume

1.595.272 metric tonnes



## Passenger Numbers



Passenger Numbers in **2023**

Domestic

International

17,793,113

58,234,208

Total Number of Passengers:

76,027,321

Passenger Numbers in 2019

Domestic: 16.612.015 - International: 51.349.067

Total Number of Passengers: 67.961.082

ATM Levels has increased %16.7 percent in 2023\*

## Record Breaking Day

1690 ATM

11<sup>th</sup> of June 2023



266.184 PAX

2<sup>nd</sup> of July 2023

## Destinations and Airlines



Number of airlines:

66 in 2019

vs

101 in 2023

Destinations served:



269 in 2019

vs

316 in 2023

# 02 iGA's Sustainability Strategy

## Focus on the Planet Target for the Future





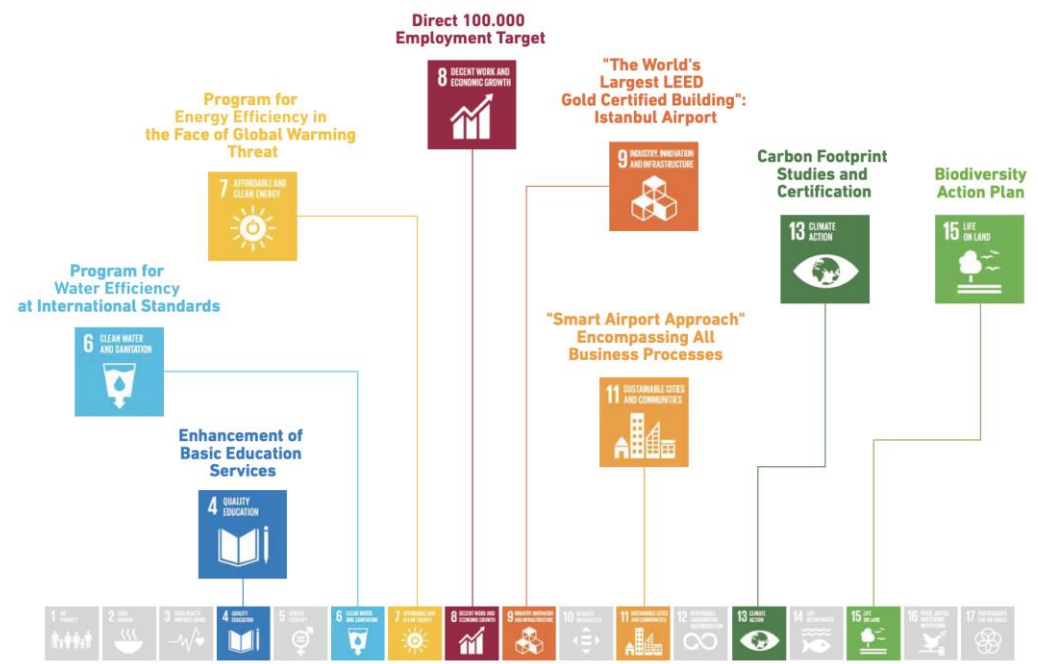
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## IGA's Sustainability Strategy

At the meeting point of different cultures, we carry the mobility methods of the future to the present by using technology focused on human and environmental benefits in order to make the journeys of all our guests comfortable and safe.

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# ACI Airport Carbon Accreditation Program



Rapid progress in a short period of time.

*Studies are ongoing for Level 4+ & recently introduced Level 5.*

Green Airports 2024



## ACA Level 1: Mapping

Footprint measurement

2020



## ACA Level 2: Reduction

Carbon management towards a reduced carbon footprint

2022



## ACA Level 3: Optimization

Third party engagement in carbon footprint reduction

2022



## ACA Level 4: Transformation

Transforming airport operations and those of its business partners to achieve absolute emissions reductions

2023





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## GENERATING VALUE FOR THE SOCIETY, OUR GUESTS AND EMPLOYEES

### WORKING FOR THE FUTURE OF MOBILITY



NUMBER OF PASSENGERS	
2021	2022
<b>36 MILLION</b> 988.067	<b>64 MILLION</b> 289.107
280.108 ATM	425.890 ATM

### COMMITMENT TO MAINTAIN ENVIRONMENTAL INTEGRITY



ENERGY CONSUMPTION PER PASSENGER (kwh/passenger)	
2021	2022
<b>5,67</b>	<b>3,63</b>



WATER CONSUMPTION PER PASSENGER (lt/passenger)	
2021	2022
<b>27,3</b>	<b>20,6</b>



RECYCLED WASTE RATIO	
2021	2022
<b>%31</b>	<b>%34</b>



NUMBER OF EMPLOYEES	
2021	2022
<b>7031</b>	<b>8032</b>



THE NUMBER OF TRAINING HOURS PROVIDED TO EMPLOYEES	
2021	2022
<b>157.830</b> HOURS	<b>228.214</b> HOURS



TAX PAID	
2021	2022
<b>307 BILLION</b> 133.087,75 TL	<b>1 TRILLION</b> 47.874.972,45 TL



LOCAL PROCUREMENT	
2021	2022
<b>%93,16</b>	<b>%94,59</b>



FEMALE EMPLOYEE RATIO	
2021	2022
<b>%26,61</b>	<b>%27,30</b>



FEMALE EXECUTIVE RATIO	
2021	2022
<b>%15,70</b>	<b>%16,10</b>

SCOPE 1&2	EMISSIONS (tonsCO <sub>2</sub> e)		
	2019	2021	2022
	177.914	147.434	140.537
EMISSIONS PER PASSENGER (kgCO <sub>2</sub> /passenger)	2019	2022	
	<b>3,97</b>	<b>2,18</b>	

ICAO Green Airports 2024



# IGA NETZERO ROADMAP

## 03 2050 Net Zero Plan

### Regeneration For Future Generations

Scope 1: 37,371  
Scope 2: 140,453  
Total: 177,824

\*Total greenhouse gas emissions in 2019 were 170 thousand tonnes of CO2. All of these emissions are within the scope of the UN 1.50°C commitment.

\*Our base year for net zero is 2019, which was our first year of operation.

### Take Off

- Renewable energy purchase
- Installation of solar panels
- Forestation efforts
- Installation of car charging stations
- Building insulation activities
- IoT LoRaWAN System applications
- Lighting Automation Systems
- Applications of Energy Management Systems
- Energy efficiency data analytics application
- Employee awareness efforts

### Scaling Up

- We will invest in renewable energy and zero-emission technologies.
- Purchasing renewable energy
- Installation of solar panels
- forestation efforts
- Increasing renewable energy usage in our operations
- Using hydrogen for heating systems
- Airside operational improvement, efficiency and capacity increase studies

### Delivering Our Promise

- We will offer an innovative airport operation powered by advanced aviation techniques with zero emissions.
- We will offset the remaining emissions with high-quality natural climate solutions that benefit people and the planet.

Current Development Process  
Road to 2050 Net Zero

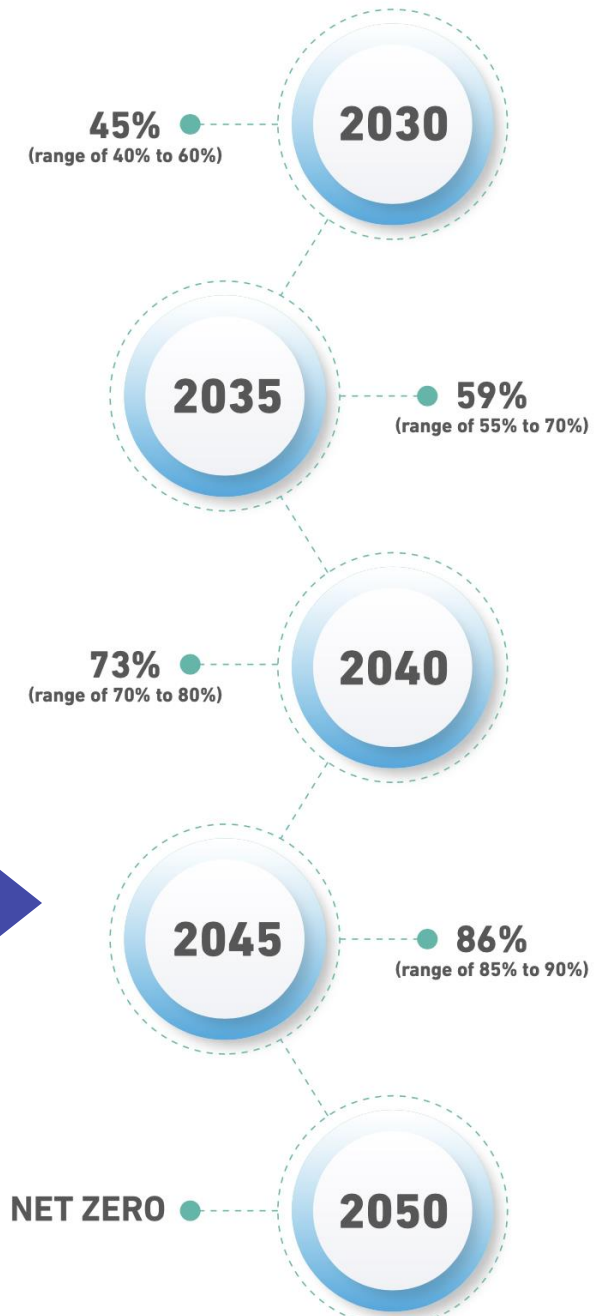
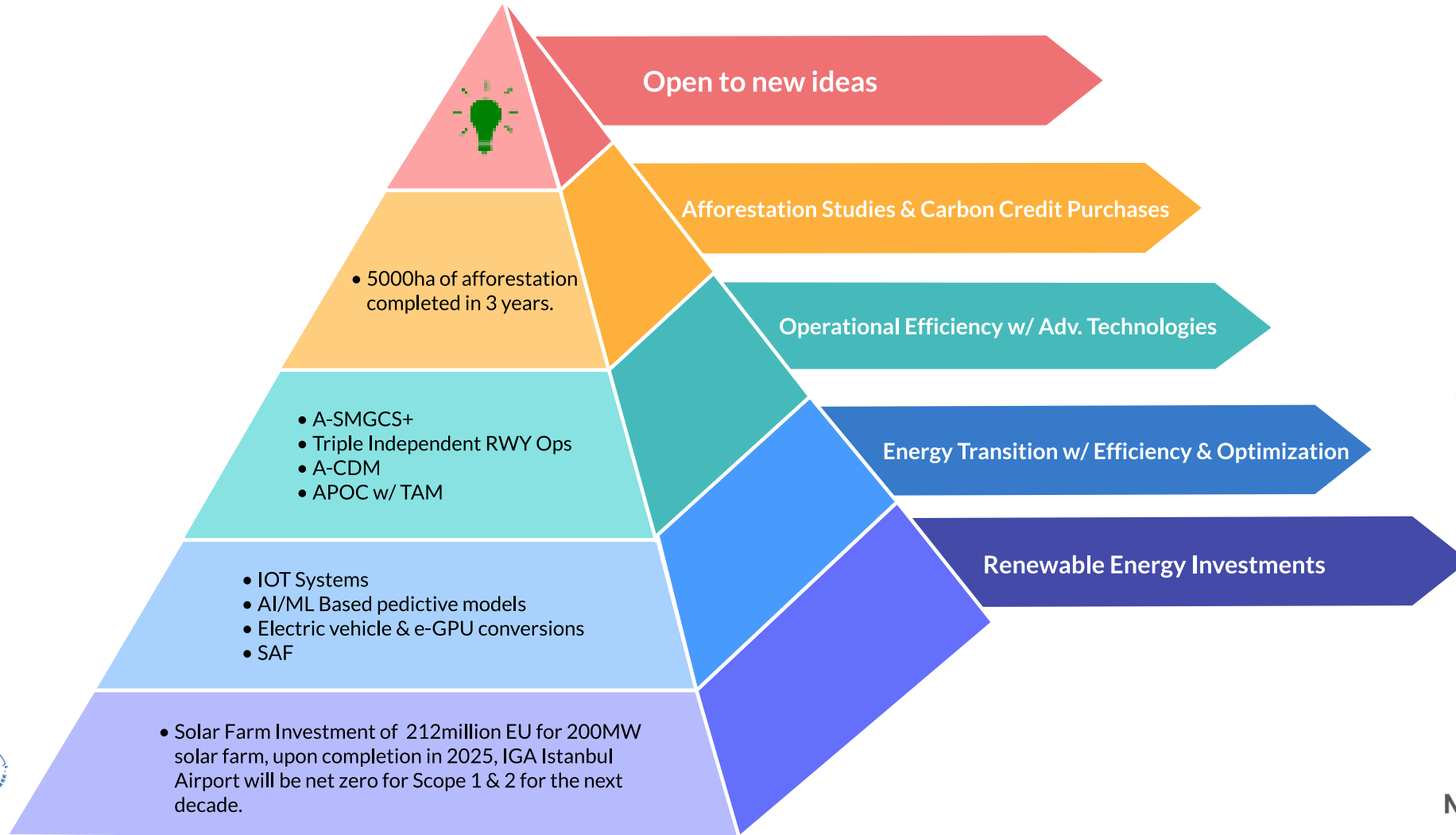


**NET  
zero**

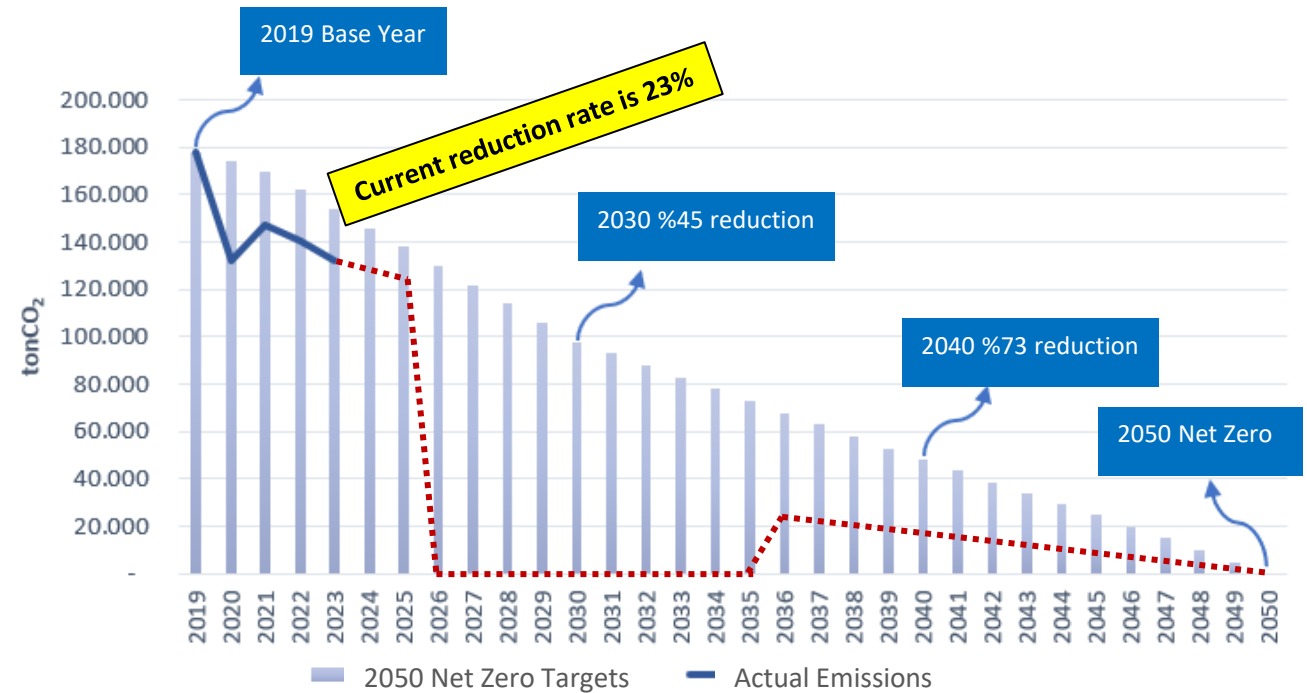
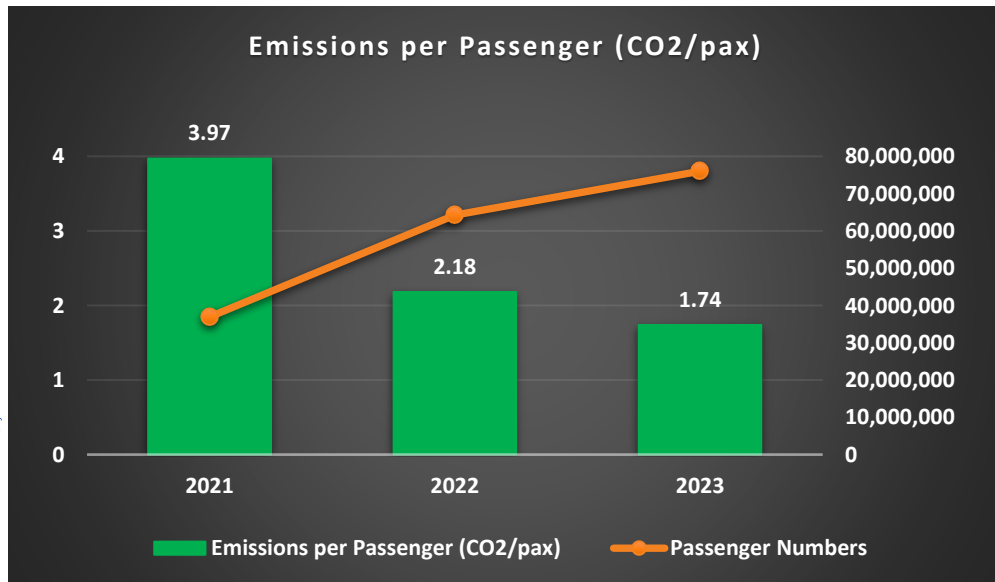
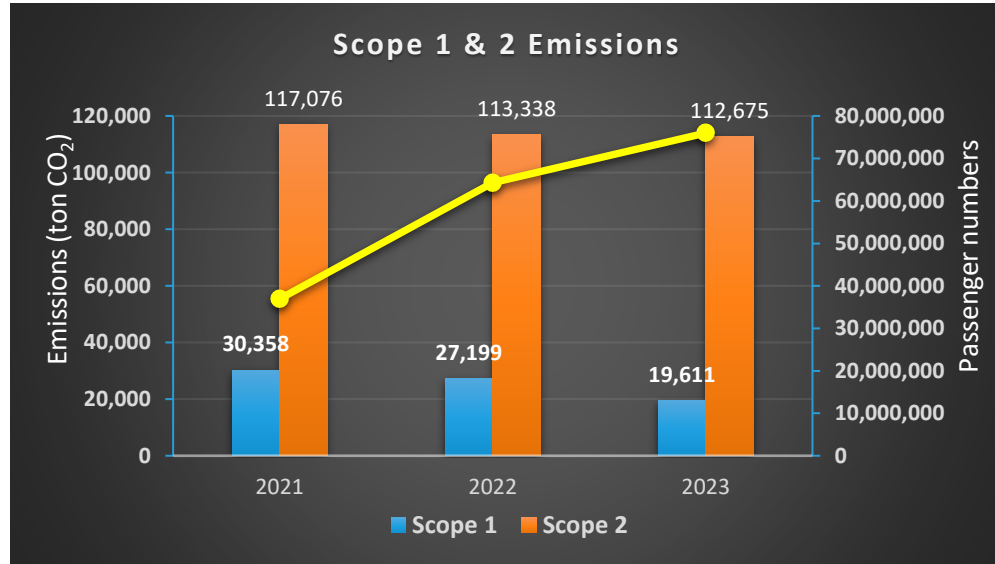


# 2050 Net Zero Roadmap

## Net Zero Roadmap Milestones & Major Emission Reduction Actions



# 2050 Net Zero Roadmap: Progress



# 04

## Innovation Approach

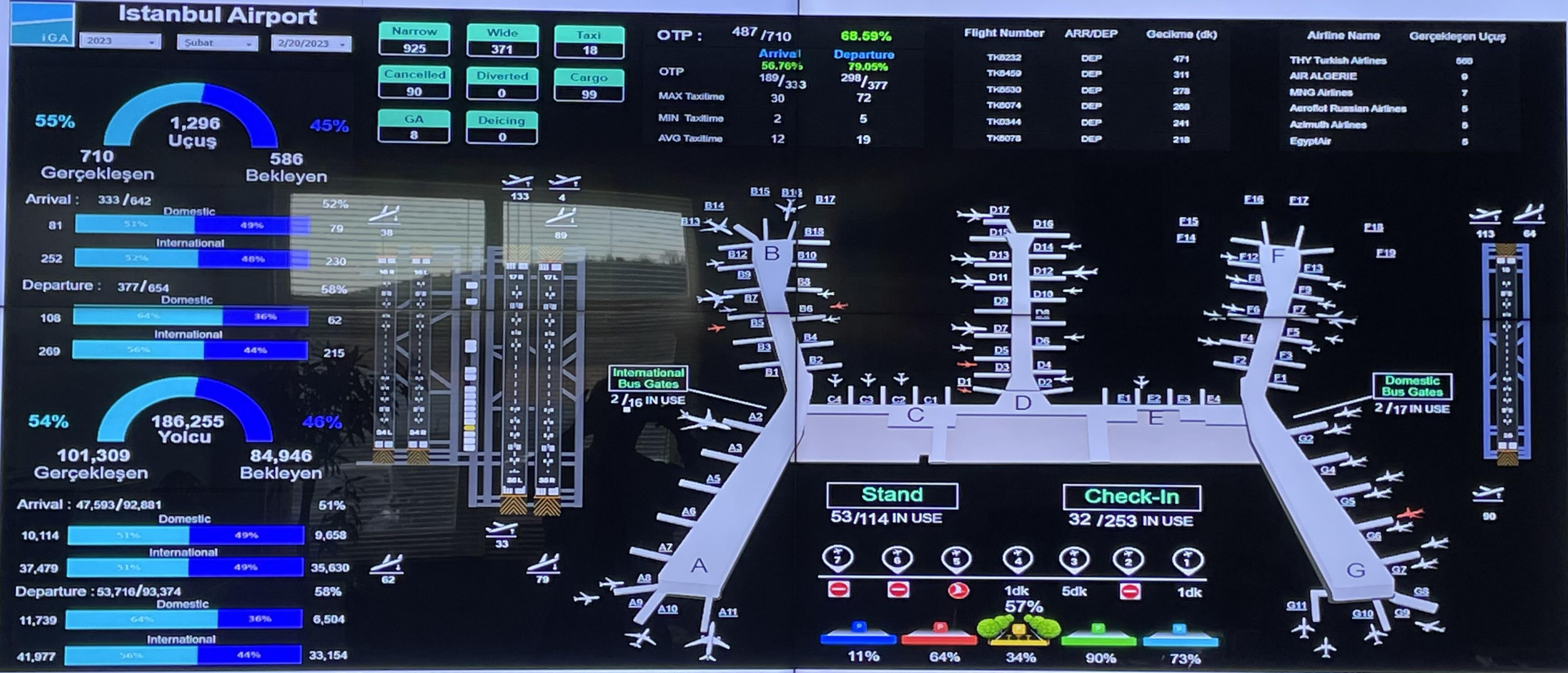




- Monitoring & dispatch
- Technical & maintenance services
- Special operations coordination center
- Planned/unplanned resource allocation
- Single Point of Contact
- Home of A-CDM and future TAM
- Fully designed & constructed by IGA Ops and IGA IST Systems

## IGA APOC – Airport Operation Center

# IGA APOC – Central Dashboard



## A-SMGCS & EFS/DCL Components

- **6 SMR** – Surface Movement Radars
- **85 MLAT** – Multilateration Units (64 as Dual Receive Only & 21 as RT/Interrogate)
- **71 ICWP** – Integrated Controller Working Positions (42 ASMGCS & 29 EFS)
- **224 Transponders** for Vehicles
- **200 OpsView** for mobile access for situational awareness



Compliant with **EUROCAE ED-87E**

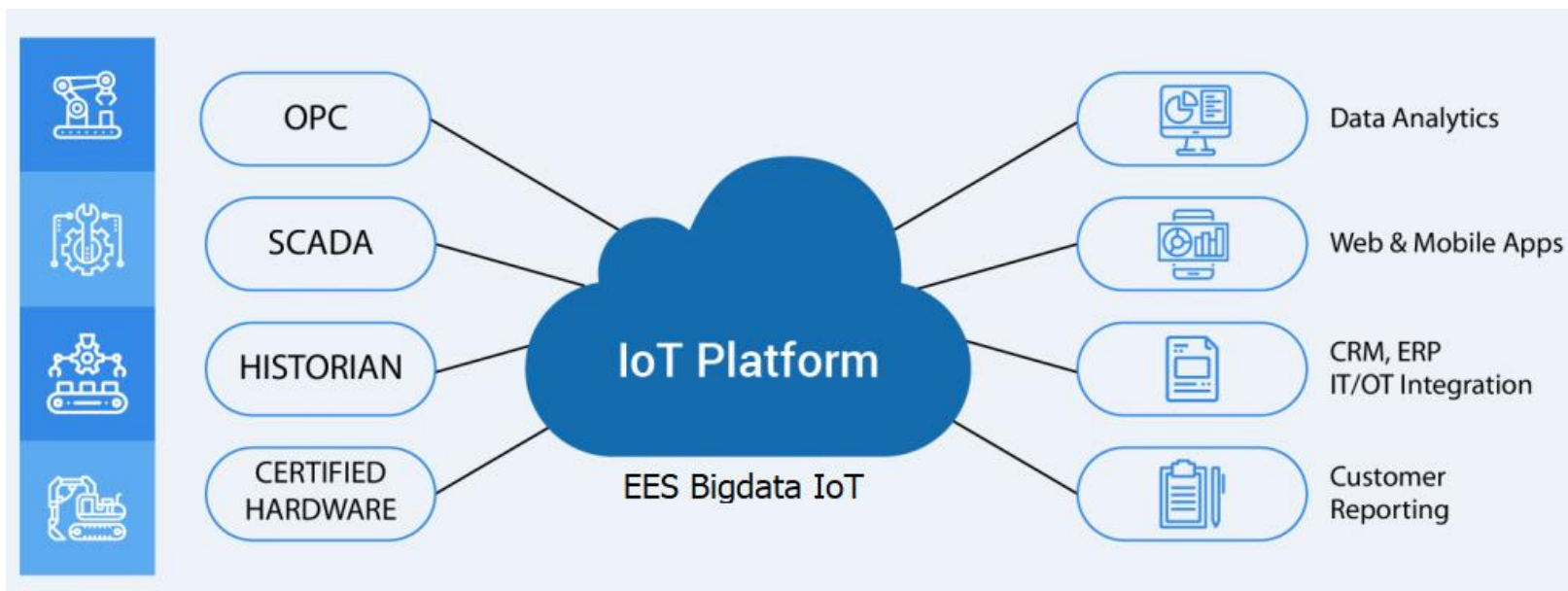
Integrated Systems	Functionality
ALCMS/AGL	Fully operational, including clearance-based stopbar & lead-on control Ready for single-lamp control “true follow-the-green” per ED-87E
NTP	For accurate time synchronization
EFS/DCL	Clearance-based stopbar control fully operational
VCS	Integration also allows synchronized recording/replay of voice communication
D-MAN	Runway balancing and pre-departure sequencing for efficient capacity usage
AODB & CDM	Also allows the base for CDM and APOC Digital Ramp Tower Operations
A-VDGS	Accurate laser-based surveillance of aircraft stands around Terminal
NAVAIDS	Provided by DHMI, allows integration of ILS for each runway approach
AWOS	Provided by MGM for accurate weather data for all positions
AFTN	Provided by DHMI for accurate, on-time and integrated Air Traffic Management
SMART IOP	
PSR/MSSSR	
D-ATIS	

Alarm	Functionality
RIM	Runway Incursion Monitoring
SVM	Stopbar Violation Monitoring
ILM	ILS Area Monitoring
RUM	Runway Usage Monitoring
APM	Approach Path Monitoring
APW	Area Proximity Monitoring
ICM	Identification Conflict Monitoring
OCM	Occupied Stand Monitoring
RVM	Restriction Violation Monitoring
TCM	Taxiway Collision Monitoring
CBM	Clearance Behavior Monitoring
RDM	Route Deviation Monitoring
CCM	Conflicting Clearances Monitoring
ECM	Emergency Code Monitoring
NTZ	None Transgression Zone

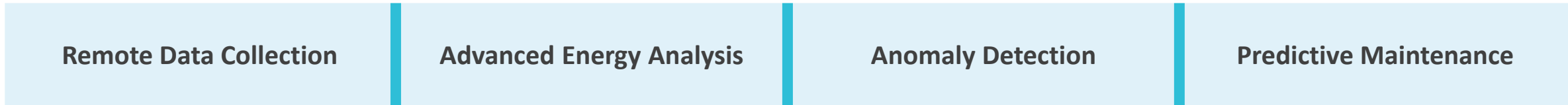
## Data Sources

- Lift, Escalator, and Travelator Monitoring System
- Energy monitoring system
- Meter-reading System
- SCADA System
- Mechanical Automation System
- Lighting Automation System
- Chlorine Measurement System
- Heat and Humidity Monitoring System
- Automatic Irrigation Control & Monitoring System
- Drainage Pump Tracking System
- Wastewater Pumping Station Monitoring System
- Solid Waste Tracking and Route Optimization

## IGA IoT and Data Analytics Platform



**Direct impact to emission reductions: Current rate is 23%**



## Transition into EnerPort

Our Solar Farm investments include;

- 807.015 kWh/year on the top of the main carpark.
- 219.000.000 kWh/year solar energy production in Eskişehir Province that will cover %94 of our Scope 2 emissions for the next decade.



# GENERATING VALUE FOR THE SOCIETY



## SOCIAL VALUE INTERNATIONAL

### Statement of Report Assurance

Social Value International certifies that the report  
IGA Social Investment Program SROI Analysis  
satisfies the requirements of the assurance process.

The assurance process seeks to assess whether or not a report demonstrates a satisfactory understanding of, and is consistent with, the Principles of Social Value. Reports are independently reviewed by qualified assessors and must demonstrate compliance with the Social Value report assurance standard in order to be certified. The Social Value report assurance standard can be downloaded from the website [socialvalueint.org](http://socialvalueint.org).

Assurance here is against the Principles of Social Value only and does not include verification of stakeholder engagement, report data and calculations.

Awarded 12/09/22

Signed 

Mr Ben Carpenter  
Chief Executive Officer  
Social Value International



Social Value UK carries out the assurance service on behalf of Social Value International. Social Value International is the global network focused on social impact and social value. We are the global network for those with a professional interest in social impact and social value. We work with our members to increase the accounting, measuring and managing of social value from the perspective of those affected by an organisation's activities, through the standardised application of the Principles of Social Value. We believe in a world where a broader definition of value will change decision making and ultimately decrease inequality and environmental degradation.

Disclaimer: Social Value International will not be responsible for any actions that an organisation takes based upon a report that has been submitted for assurance. An assured report does not grant Accredited Practitioner status to the authorisation of the report unless it is part of a full application for Accredited Practitioner status.

STAKEHOLDER GROUPS	VALUE
Local women (Subgroup of local community)	0,45
Local young people (Subgroup of local community)	0,11
Child Support Centre (ÇODEM)	1,47
Experts/Trainers	0,09
Artists	3,32
Collaborated institutions	0,18

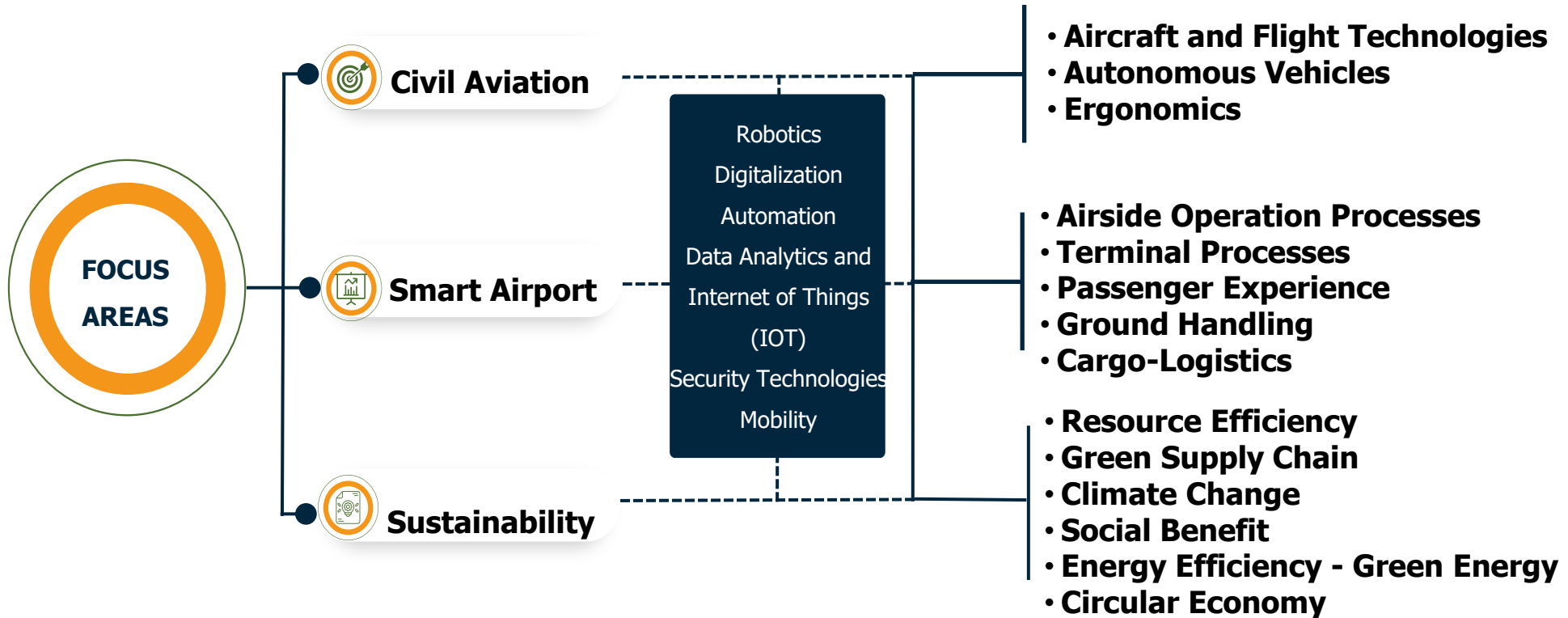


The SROI ratio defined for the Social Investment Program IGA implemented between 2017 and 2021 was analyzed to be 1:5.61 according to the evaluation of changes measured in all stakeholder groups. In other words, **each 1 TL investment spent by IGA delivered 5.61 TL of social value.**



STARTING POINT OF AVIATION INITIATIVES

In late 2021, we established IGA HUB Start Up Program to support startups which offer innovative solutions to provide higher service quality, faster and economical solutions for passengers, employees, business partners and authorities.





# 05

## Final Words





## Real heroes of IGA Istanbul Airport

# Investing in our people...



## Welcome to iGA Academy!



# Our journey started in 2013, still going strong...



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# Thank You

