

# Climate Change Works of Istanbul Metropolitan Municipality

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**Head of Environmental Protection  
and Development Department**

28 August 2024



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# 16 Million Population



Istanbul has population of more than 131 countries such as Greece, Denmark, Austria, Belgium.



Greece



Denmark



Austria



Belgium

## İSTANBUL

- Located between the continents of **Asia and Europe**
- The **most populous city of Türkiye and also Europe** with its population exceeding **16 millions**
- **Financial capital** of Türkiye
  - has a significant impact on the country's overall economic performance.
- **Importance in maritime , trade,** tourism, history and culture.



## Istanbul Metropolitan Municipality (IMM)

- 39 District Municipalities in İstanbul
- **IMM** has:
  - **31 Departments** and **116 directorates**.
  - **30 subsidiary companies + 2 affiliated public utility corporations;** İstanbul Electrical Tram and Tunnel Operations (İETT) and İstanbul Water & Sanitation Administration (İSKİ) and
  - around **90,000 employees** in total.



## Expected Climate Change Effects in Istanbul by 2100



Annually  
**1 – 4.5°C**  
temperature  
increase



Temperatures  
**never** down  
below 0°C



Sea level  
rise by  
**45-75 cm**  
by 2100



**%30**  
decrease of  
summer  
rains



**%59**  
increase of  
extreme  
precipitation

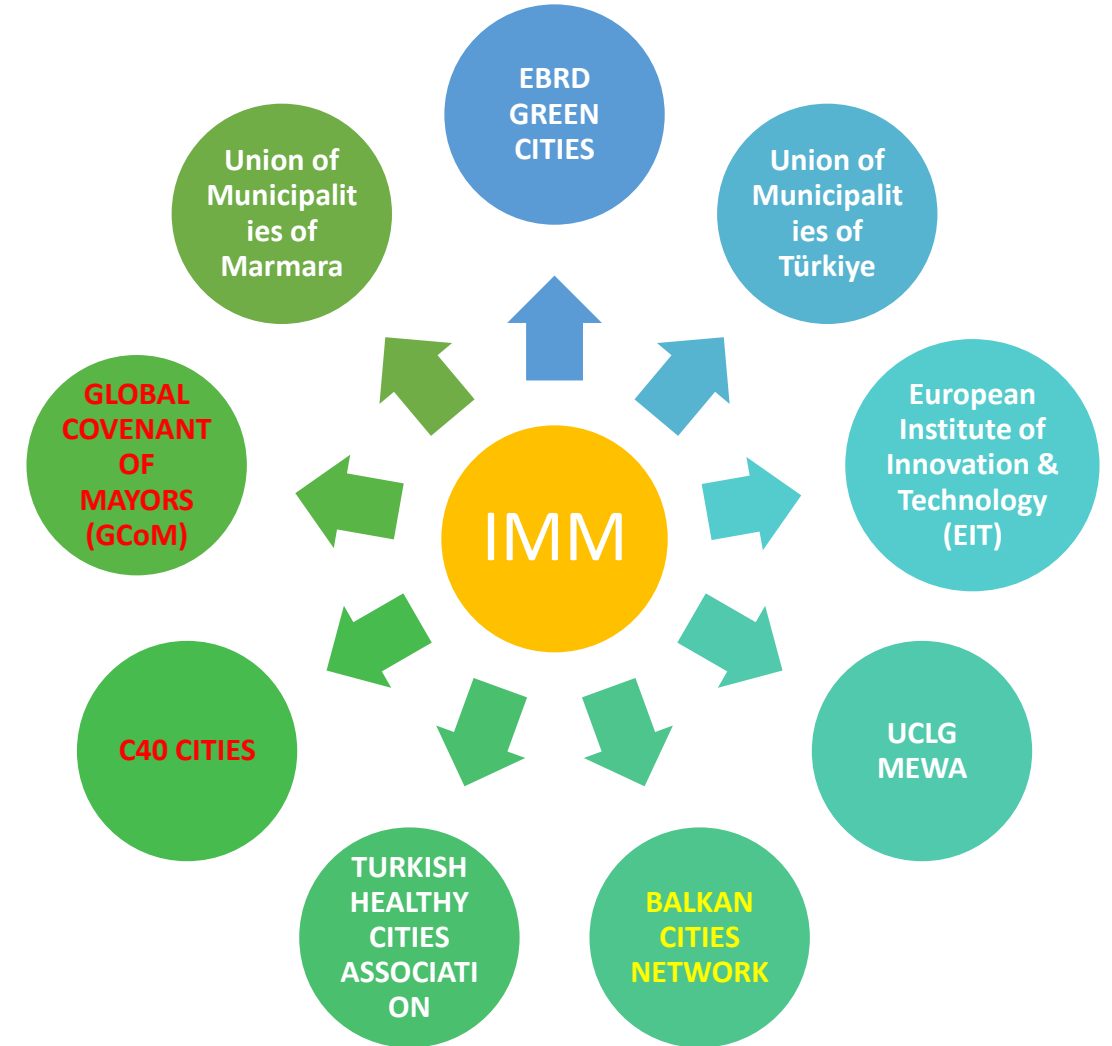


Long  
periods of  
drought



## NATIONAL AND INTERNATIONAL NETWORKS

Istanbul Metropolitan Municipality is the **first and only municipality** from Türkiye as a member of the ***C40 Cities Climate Leadership Group***.



## Deadline 2020 / C40 Cities Climate Leadership Group

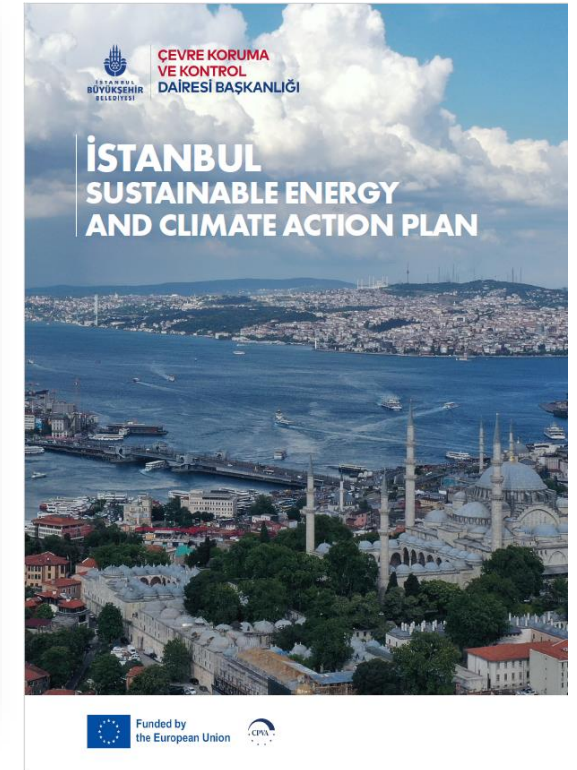
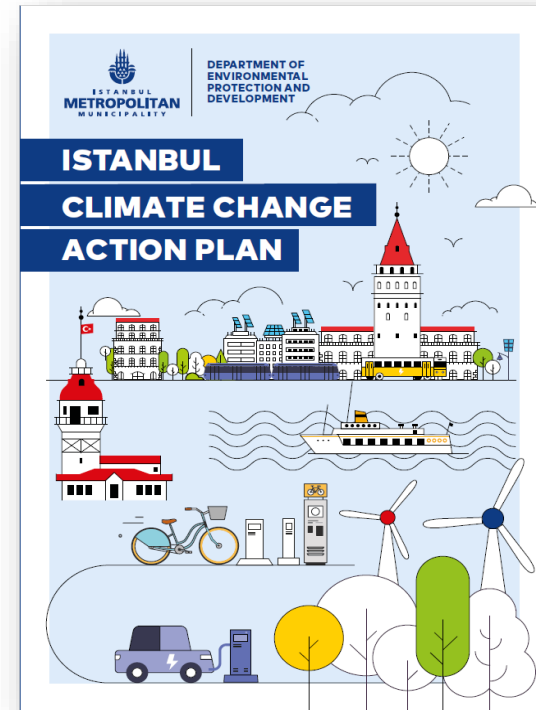
- Mayor of IMM, Mr. Ekrem İmamoğlu, signed the ***Deadline 2020 Commitment*** at the ***C40 Mayors Summit*** in Copenhagen in October 2019.
- Committed to be C-neutral and resilient city by 2050.





## ISTANBUL CLIMATE WORKS (CAP and SECAP)

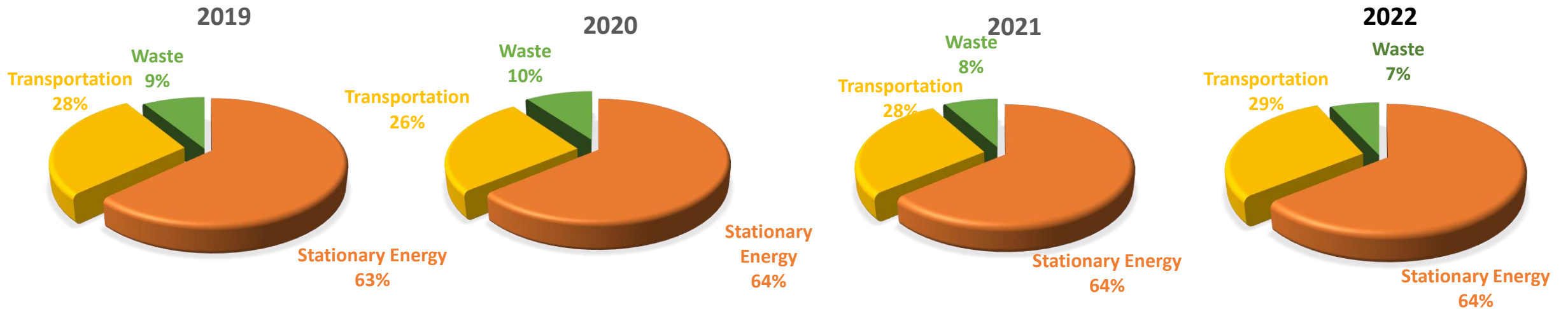
- Within The Deadline 2020 Commitment and GCoM and C40 memberships, IMM prepared:
  - Climate Change Action Plan (CAP)
  - Sustainable Energy and Climate Action Plan (SECAP)
- IMM carries out its climate change studies in 4 main sectors:
  - Stationary Energy
  - Transportation
  - Waste
  - Water- Wastewater



- The plans can be accessed via:  
<https://cevre.ibb.istanbul/>



# Sectoral Distribution of Greenhouse Gas Inventory of İstanbul in 2019, 2020, 2021 and 2022



<b>2019 TOTAL Emissions</b>	<b>50,888,653 tCO<sub>2</sub>e</b>
Emissions per capita	3.3 tCO <sub>2</sub> e

<b>2020 TOTAL Emissions</b>	<b>47,880,005 tCO<sub>2</sub>e</b>
Emissions per capita	3.1 tCO <sub>2</sub> e

<b>2021 TOTAL Emissions</b>	<b>50,637,989 tCO<sub>2</sub>e</b>
Emissions per capita	3.2 tCO <sub>2</sub> e

<b>2022 TOTAL Emissions</b>	<b>51,202,666 tCO<sub>2</sub>e</b>
Emissions per capita	3.2 tCO <sub>2</sub> e



DISCLOSURE INSIGHT ACTION

# CITIES A LIST 2023

## Istanbul



Ekrem İmamoğlu (International) ✓

@imamoglu\_int

ISTANBUL AMONG CLIMATE LEADERS 🌍 Istanbul's [#climatechange](#) projects are starting to bear fruit. We as the Istanbul Metropolitan Municipality (IMM) received the highest 'A' score from the Carbon Disclosure Project (CDP) for our efforts.

With this achievement, Istanbul joins the list of 119 global cities recognized as climate action leaders by the CDP. Istanbul is the first city in Türkiye to reach this success, achieved by only 13% of cities worldwide. [#Istanbul](#) [#ClimateAction](#) [#CDPLeaders](#)

[Gönderiyi çevir](#)

# CITIES A LIST 2023

## Istanbul





## ISTANBUL SUSTAINABLE ENERGY AND CLIMATE ACTION PLAN (ISTANBUL SECAP)

- **SECAP studies were carried out under the EU Project “EU4 Energy Transition Covenant of Mayors in the Western Balkans and Turkey”**
- The Project is funded by **European Union** and the **German Federal Ministry of Economic Cooperation and Development**.
- SECAP studies were carried out under the coordination of **IMM Environmental Protection and Control Department, Climate Change Directorate** with **Lithuania's Central Project Management Agency (CPMA)** as project executive .



## ISTANBUL SUSTAINABLE ENERGY AND CLIMATE ACTION PLAN (ISTANBUL SECAP)

- **PROJECT SCOPE:** Within the scope of the project, **technical support** and **capacity support** will be provided as consultancy services on the development of the “Sustainable Energy and Climate Plan” (SECAP) to Istanbul Metropolitan Municipality and Bağcılar Municipality.
- **PROJECT DURATION:** Total duration **48 months** ( 1 March 2021- 28 February 2025)  
2021-2023: Preparation of SECAP  
2023-2025: Implementation of SECAP





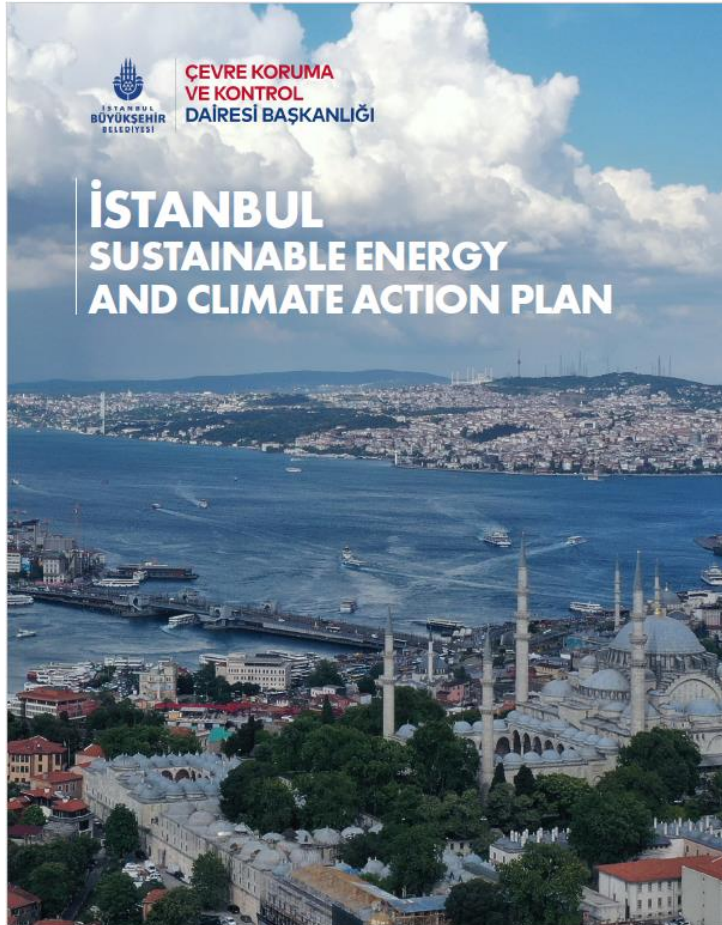
## ISTANBUL SUSTAINABLE ENERGY AND CLIMATE ACTION PLAN (ISTANBUL SECAP)

- Throughout SECAP preparation phase, IMM and CPMA co-arranged meetings, seminars and workshops to identify İstanbul's roadmap to become low carbon and resilient city.





# ISTANBUL SUSTAINABLE ENERGY AND CLIMATE ACTION PLAN (ISTANBUL SECAP)



- The plan can be accessed via:  
<https://cevre.ibb.istanbul/>



## ISTANBUL SUSTAINABLE ENERGY AND CLIMATE ACTION PLAN (ISTANBUL SECAP)

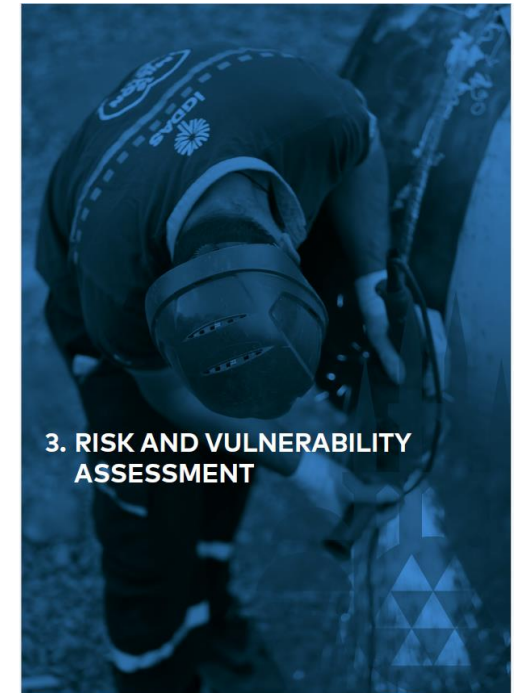
- Istanbul **SECAP Launching Event** was held in **November 2023** with the participation of our Mayor Mr. Ekrem İMAMOĞLU.
- The actions included in the İstanbul SECAP published last year are **being monitored this year**.



# ISTANBUL SUSTAINABLE ENERGY AND CLIMATE ACTION PLAN (ISTANBUL SECAP)

SECAP is based on two outcomes:

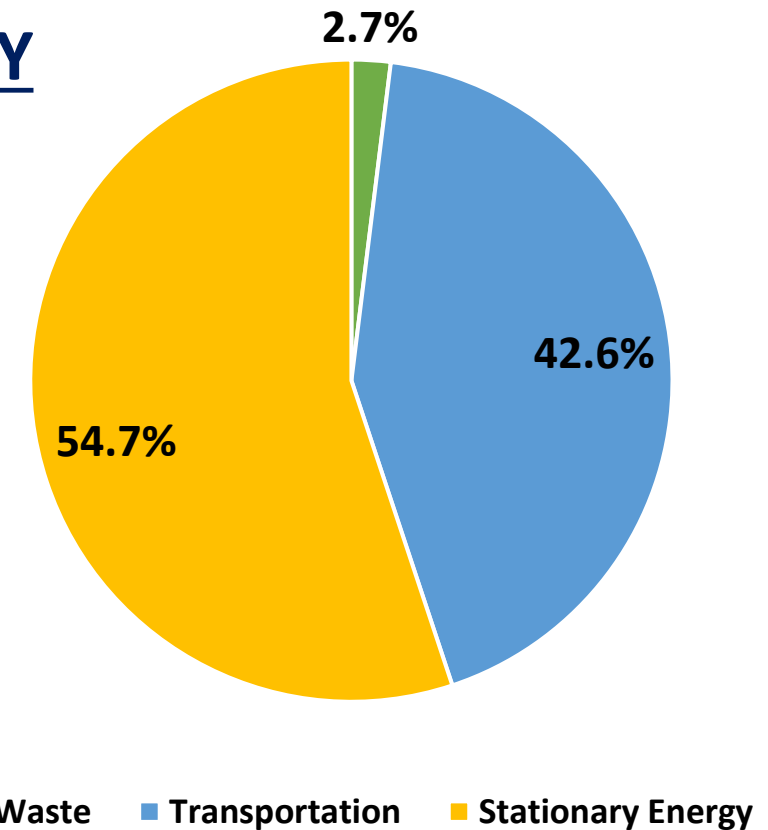
- **Baseline Emissions Inventory in the Region – BEI**
  1. Istanbul General Greenhouse Gas Emission Inventory
  2. IMM Institutional Greenhouse Gas Emission Inventory
- **Risks and Vulnerabilities Assessment - RVA**





## ISTANBUL SECAP: INSTITUTIONAL EMISSION INVENTORY

- **The first institutional emission inventory** related to SECAP (**2019 base year**) was prepared by the technical staff of the IMM Climate Change Directorate in 2022.
- The institutional inventory includes emissions from all buildings and facilities of IMM, 28 subsidiaries and 2 affiliates.



IMM's institutional GHG emission amount is approximately **3%** of Istanbul's total GHG emission amount

**Total emission amount:**  
**1,544,908 tCO<sub>2e</sub>**  
**Emission amount per capita:**  
**20.1 tCO<sub>2e</sub>**

## ISTANBUL SECAP MITIGATION WORKS

- The first IMM Institutional Greenhouse Gas Emission Inventory was calculated.
- One-on-one meetings were held with IMM units, subsidiaries, and affiliates to determine the mitigation actions based on sectors for 2023 and 2030.



## Waste Sector

**2019**

**477,608 MWh** of electricity  
produced from waste

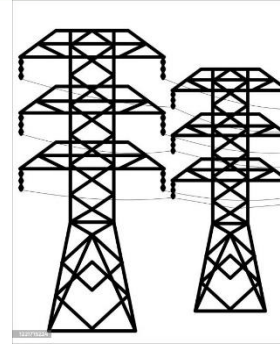


**2,75 x**

**2023**

**1,316,908 MWh**

of electricity produced from waste with the  
facilities that have been put into operation  
and whose capacity has been increased



We generated electricity equivalent to the  
electricity needs of **2.5 million people**  
annually and prevented the emission of **4.5**  
**million tons of CO<sub>2</sub>e** into the  
atmosphere with our **new renewable**  
**energy investments** to support our carbon  
neutral waste management targets and  
reduce energy dependency.





- Kemerburgaz and Kömürcüoda Biomethanization Facilities and Waste Incineration and Energy Generation Facility were came into operation between 2019 and 2022.



*Kemerburgaz Biomethanization Facility*



*Waste Incineration and Energy Generation Facility*

Ratio of Waste came to Waste Recycling Facilities

2019

5%



2023

28%



Ratio of Waste sent to Landfill

95%



72%



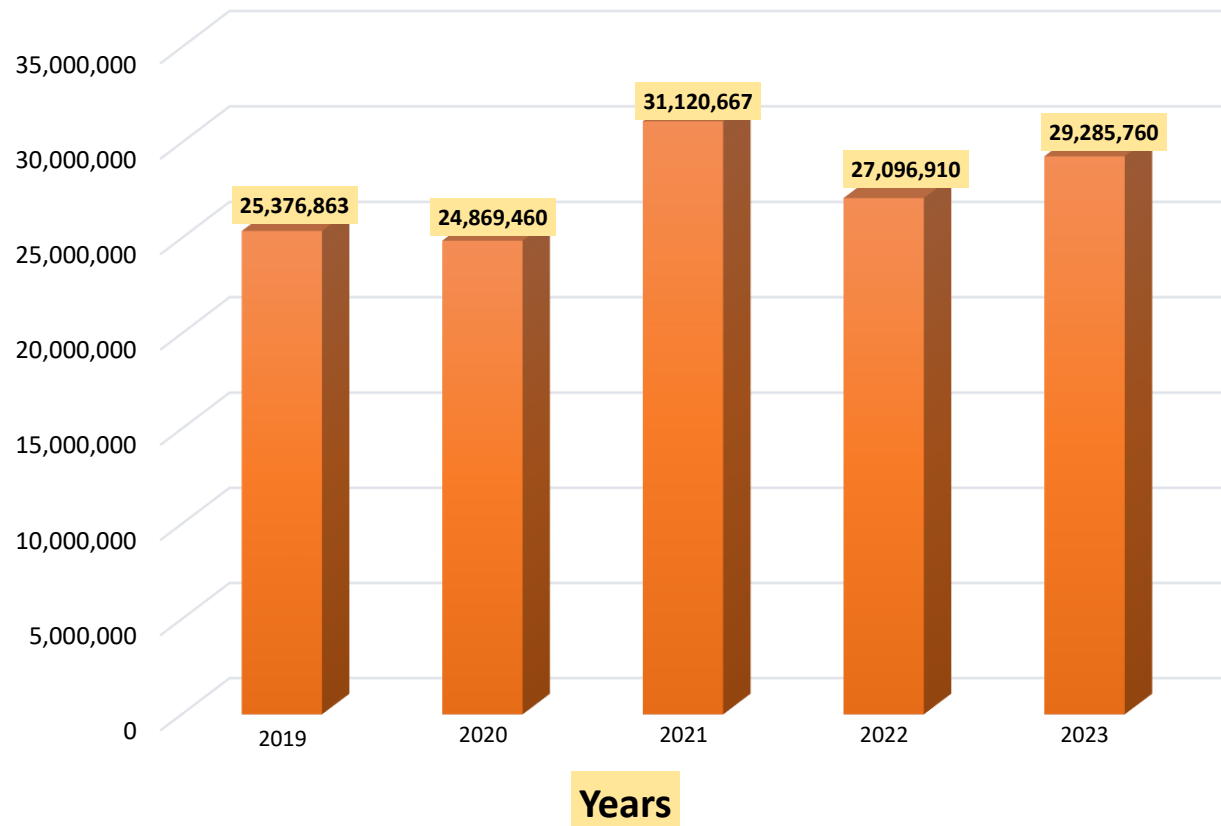
## Stationary Energy & Buildings Sector

	2019-2023	2023-2024
Number of IMM Buildings with Solar Power Plants on Their Roofs	22	87
Total Power of Solar Power Plants Installed in IMM Buildings	4193 kWp	16008 kWp
Number of IMM Buildings with Energy Audits	21	22
Number of IMM Buildings Receiving ISO50001 Energy Management Certificate	5	24

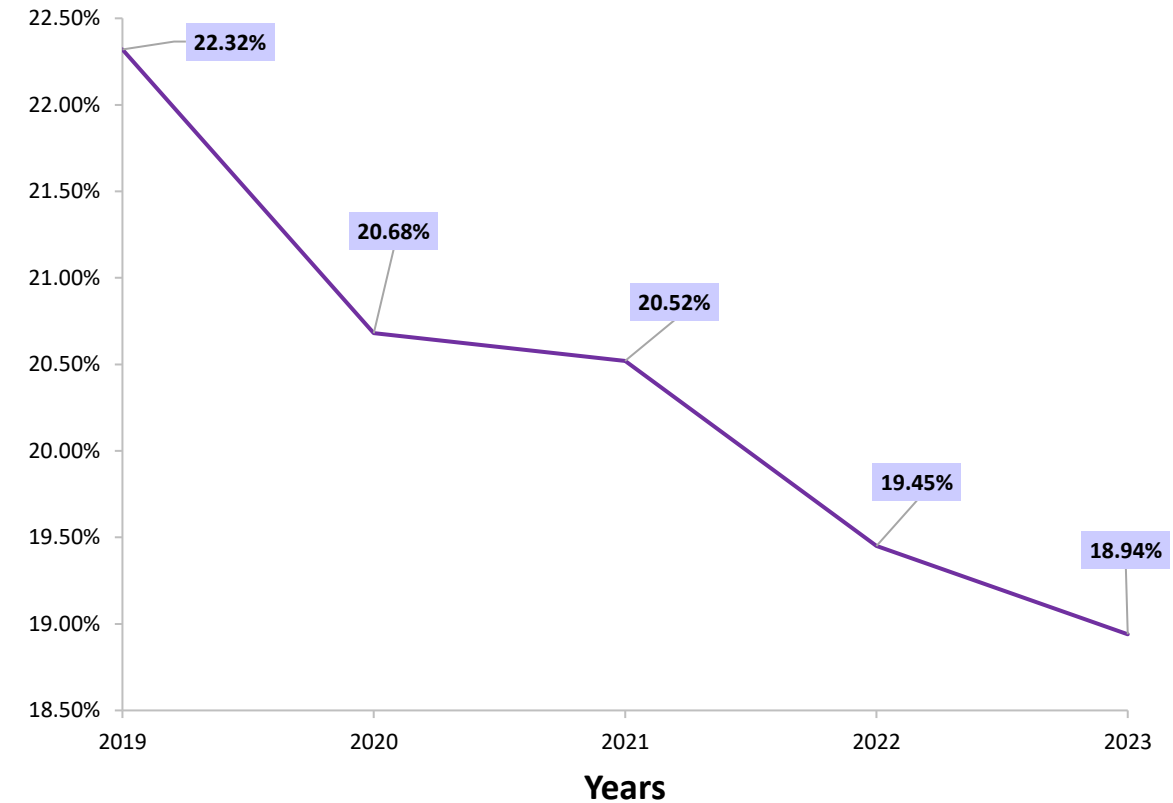


## Water & Wastewater Sector

### Amount of Recovered Advanced Treated Wastewater ( $m^3/year$ )



### Water Loss-Leakage Rate (%)





## Water & Wastewater Sector

- In Kadıköy and Üsküdar, where floods had a negative impact on daily life in the past, **stormwater and wastewater collection systems were separated in 2020.**
- As a result of the investments, flood and overflow problems were prevented in these important districts.

Stormwater Collection System Length (km)

2019

4.600



2021

5.112



## Transportation Sector

	2022	2023
Rail System length (km)	297	328
Number of electric public transport vehicles (taxis and buses, respectively) (units)	75 & 40	125 & 40
Bicycle path length (km)	339,15	



Electric buses in service in the Princes' Islands



Istanbul became the city with the most subway constructions in the world at the same time.



Rail vehicle developed by IBB, TRAM34



Women's use of public transportation was encouraged with «AnneKart»



We provide service with a total of 50 Deniz Taxis, 5 of which are electric-hybrid, the first electric vehicles used in maritime transportation in Istanbul.

## ISTANBUL SECAP ADAPTATION WORKS: VULNERABILITY MAPS

- Main adaptation themes in SECAP are:
  - Coastal and Inland Floods,
  - Biodiversity
  - Heat Island Effect.
- One of the main SECAP target is determining **vulnerabilities of the city and implementing adaptation methods** against climate change.
- “The **risk and vulnerability sub-report of İstanbul**” was prepared.



# ISTANBUL SECAP ADAPTATION WORKS: VULNERABILITY MAPS

- Four regional vulnerability maps for Istanbul were prepared in the frame of SECAP:
  - **Habitat Quality,**
  - **Heat Islands Effects,**
  - **Coastal Floods and**
  - **Urban Floods**

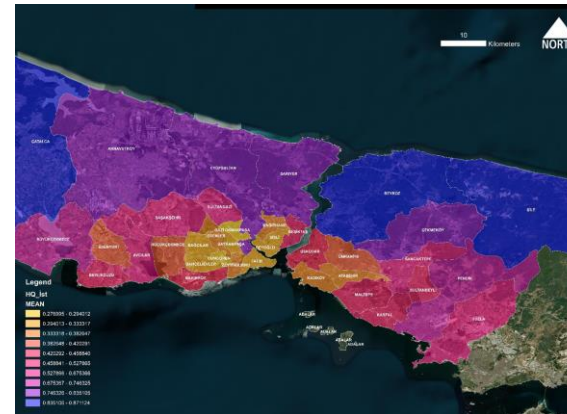


Figure 1: Habitat Quality

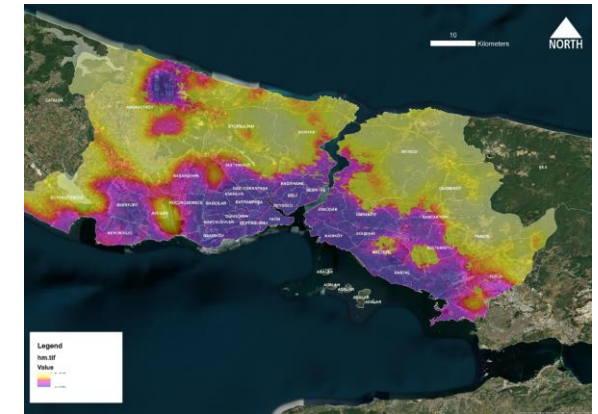


Figure 2: Heat Mitigation Index (HMI)

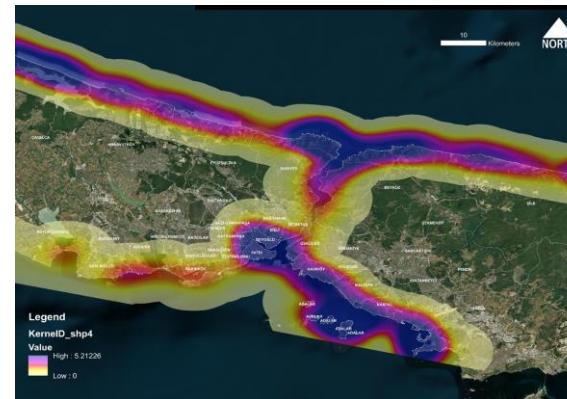


Figure 3: Coastal Vulnerability

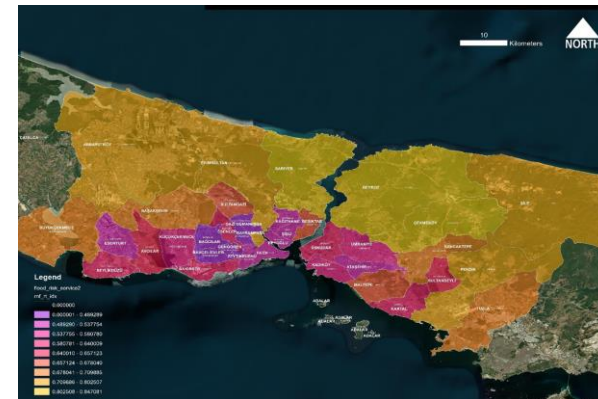


Figure 4: Pluvial Flooding Vulnerability

## ISTANBUL SECAP ADAPTATION WORKS:

- **Workshops** with internal and external stakeholders to identify:
  - risk and vulnerability of İstanbul in terms of adaptation to climate change.
  - the risks for İstanbul and IMM and the measures to be taken to minimize the adverse effects of these risks



## ISTANBUL GREEN CITY ACTION PLAN (ISTANBUL GCAP)

- IMM aims for an **environmentally sensitive and sustainable future** for İstanbul with its **green development investments**.
- **Green City Action Plan Memorandum** was signed with the **European Bank for Reconstruction and Development (EBRD)** for the sustainable development of the city.
- Thus İstanbul has been joined the EBRD's green cities platform.
- GCAP studies have been started in May, 2023.



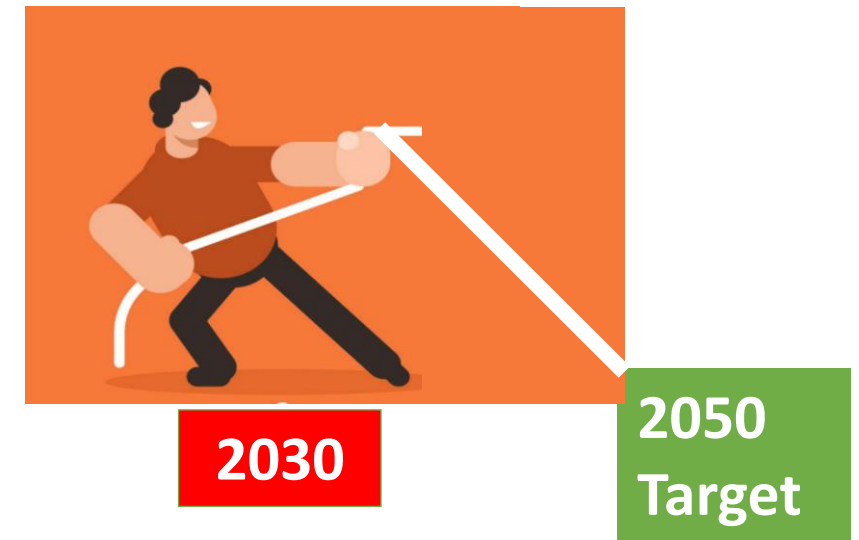


## EU MISSIONS: NET ZERO CITIES



“Climate City Contract” including “Commitments”, “2030 Action Plan”, and “2030 Investment Plan” will be submitted by September 16, 2024.

Istanbul has been selected as one of the **100 leading cities** committed to being a **climate-neutral and smart city by 2030**.

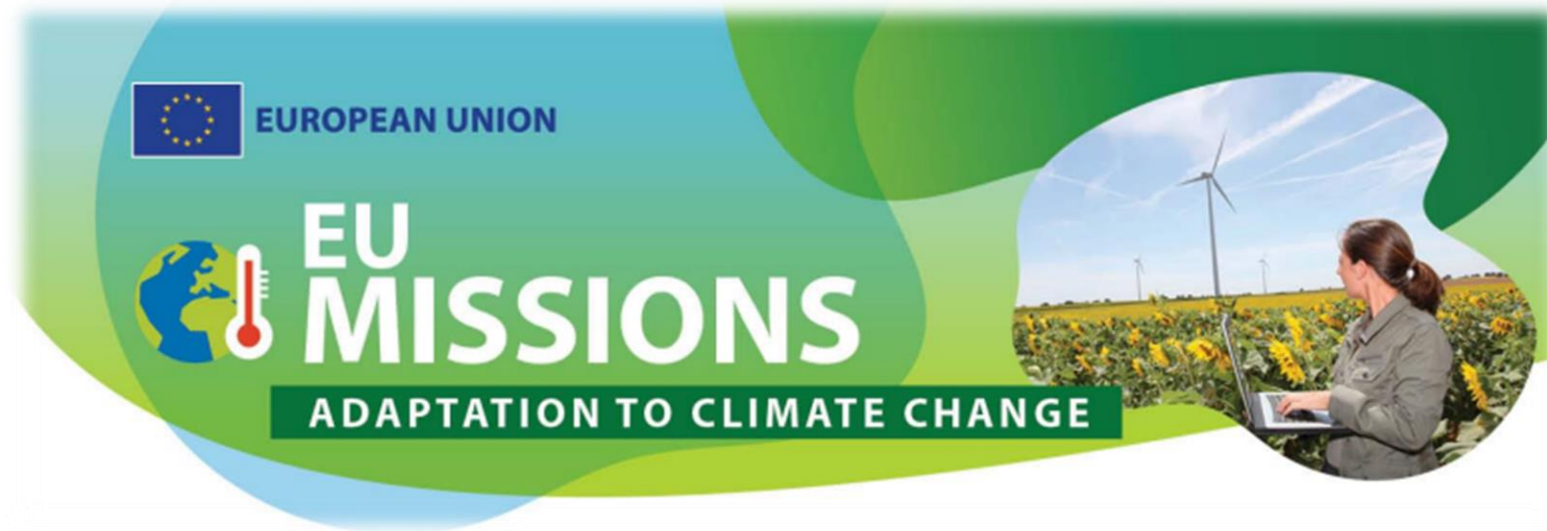


# NZC PILOT CITY: Green and Carbon Neutral Building Transition Guide- Istanbul Model

- İstanbul has been selected as a **pilot city** with the **Build4GreenIST** Project (Green and Carbon Neutral Buildings Transition Guide: İstanbul Model).
- The Project mainly focuses on:
  - to create a guide to ensure that buildings renewed within the scope of urban transformation or earthquake prone are green and carbon neutral.

The logo for Build4GreenIST features the text "Build4GreenIST" in a bold, blue, sans-serif font. The number "4" is stylized with a green exclamation mark integrated into its design.

## EU MISSIONS: ADAPTATION TO CLIMATE CHANGE



- IMM is among the 301 signatories of “**EU Missions: Adapting to Climate Change**”.
- The Adaptation Mission is a network that supports cities to be resilient to climate change.



**Thank you**

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