

### Kadıköy at a Glance



Kadıköy, a central district of Istanbul with 467,919 residents in 2023, is dedicated to sustainability. Initiatives include green corridors, the Zero Waste Movement, LED lighting, energy-efficient buildings, EV charging stations, and solar energy in public buildings. Kadıköy also promotes smart mobility, pedestrian-friendly practices, and digital public services.

The district has a maritime climate with hot, rainy summers and warm, rainy winters, ranging from +3°C to +23°C. It's a cultural hub with cinemas, theaters, art galleries, fashion centers, sports clubs, historical bazaars, entertainment venues, and universities.

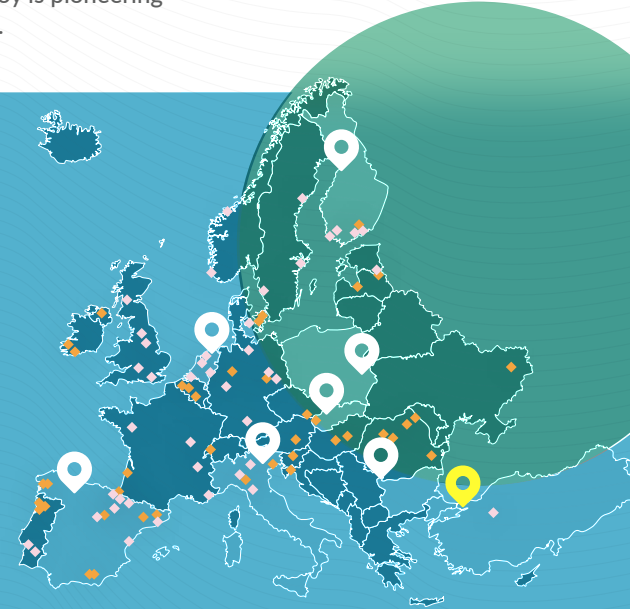
A major transportation hub, Kadıköy connects various areas via Metro, Train, Tram, Bus, Metrobus, Ferry, and Minibus. However, it faces challenges like heavy traffic, high population density, urban transformation issues, infrastructure deficiencies, green space shortages, and high housing costs.

Through the Making City Project, Kadıköy is pioneering Turkey's first Positive Energy Zone (PED).

### Follower City in the Scalable Cities Community

Kadıköy is a part of the MAKING-CITY project as a "Follower City", and leads urban energy transformation in Türkiye. Besides, as a part of the Scalable Cities Community, 120 cities across 18 Smart Cities and Communities projects have collectively achieved impressive results:

- 53% energy saved
- Up to 88% CO<sub>2</sub> emissions reduced
- 5,270+ electric vehicles introduced
- Nearly 500 e-charging stations installed
- Over 1 million m<sup>2</sup> of floor space refurbished
- 17,500+ smart meters installed
- Over 260,000 engaged citizens



- Kadıköy
- The 7 other MAKING-CITY cities
- 48 Lighthouse Cities
- 72 Fellow Cities



Scan the QR code to access the interactive online map with all 120 cities or access the list of the 18 EU projects.

### Kadıköy's Decarbonization Strategy

- **Engagement:** Stakeholder participation through various tools.
- **Political support:** Strong political support in local. City Council decisions on B Class Energy Performance Certificate, Gray Water, and "Green Building Certification".
- **Energy Balance:** To focus on energy efficiency and investment in renewable energy projects in the district (solar panel, e-charging, smart lighting)

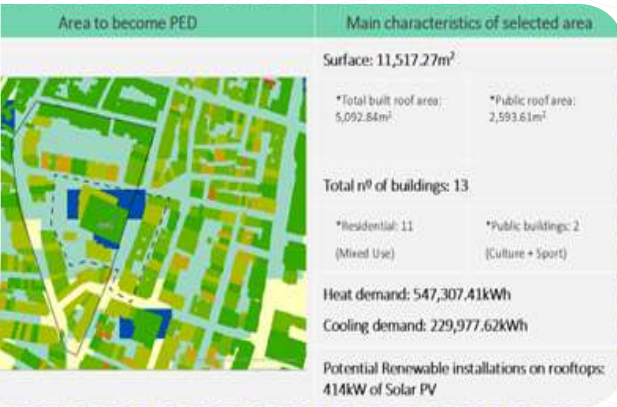


### Kadıköy's roadmap to PED

#### What is a PED ?

A **Positive Energy District (PED)** is a eco-friendly urban area that produces more renewable energy than it uses. Featuring sustainable tech, energy-efficient buildings, and smart grids for eco-resilience, community engagement, and reduced carbon footprints. **PEDs exemplify sustainable urban living and a greener future.**

#### Caferağa PED area



Scan QR code for more info in Turkish.



#### Kadıköy PED in progress

Kadıköy aims to achieve a Positive Energy District (PED) through strong **policy and regulation**, focusing on **energy-efficient buildings, retrofiting**, and climate adaptation. The city plans to maximize infrastructure performance and integrate renewable energy sources like **solar panels and heat pumps**. **Waste management** and a **circular economy** are key priorities, along with real-time **energy consumption monitoring** using sensors. Community engagement and sustainable mobility, including e-charging stations and **e-mobility solutions**, are emphasized. Kadıköy targets a **40% reduction in GHG emissions** by 2030 and aims for climate neutrality by 2050. Read more [here](#).

#### PED case study: 2 scenarios

**2 scenarios for energy generation** are developed to achieve PEDs according to the technologies identified in the previous.

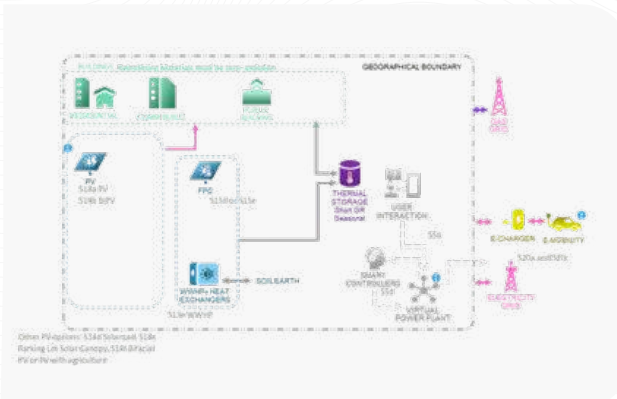
##### Scenario 1: All PV + All heat pumps

- PV: 390.5 kW (2499.23 + 2300 + 200 m2 rooftop area available) - All new
- HP: 458.58.3kW - 39.5W/m2 of HPs

##### Scenario 2: PV + Solar thermal & heat pumps for residential and PV + HPs for the new sports hall and the new cultural center

- PV: 376 kW (1124.65 + 1610 + 140m2 rooftop area available)
- Solar thermal: 81.2 kW (11(m2))
- HP: 261.27 kW - 22.5W/m2 of HPs

#### Technology selection package



### Inspiring Success Stories

#### Solar Panel Plants: A step Towards %40 2030

- Established in 2021.
- Produces 219 MWh annually with 172.8 kWp installed power.
- Produced 377 MWh from 2021-2023.
- Saved 2,450,000 TL.



#### Investment in E-charging stations

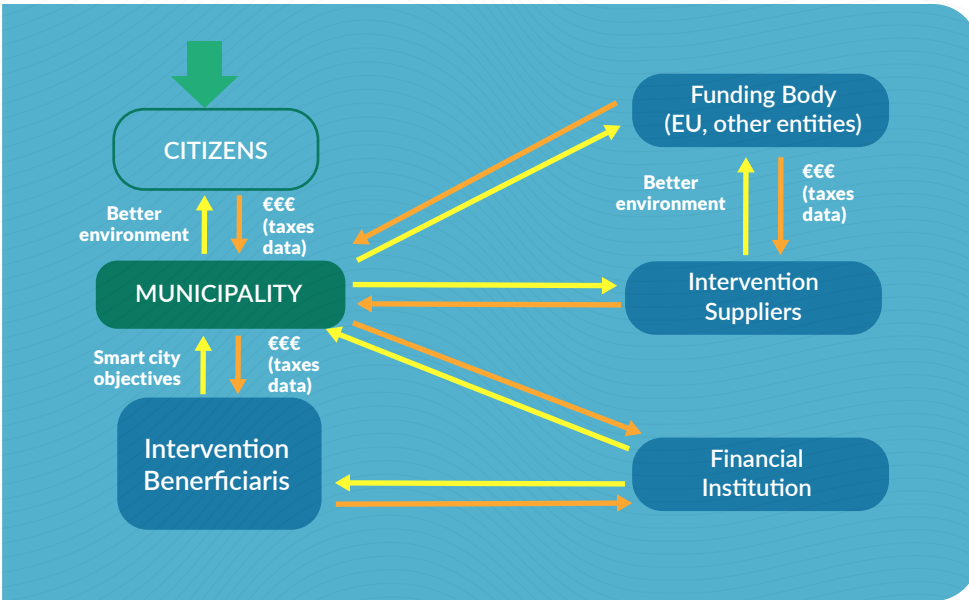
In December 2023, we launched the Electric Vehicle Charging Stations Project to support the shift to electric vehicles and reduce environmental impact. We have set up stations at four locations in Kadıköy:



Scan the QR code and read more about Kadıköy

- Kadıköy Wedding Hall (Hasanpaşa)
- Khalkedon Kadıköy Restaurant (Fenerbahçe)
- CKM Culture Centre (Caddebostan)
- İDEA Kadıköy (Moda)

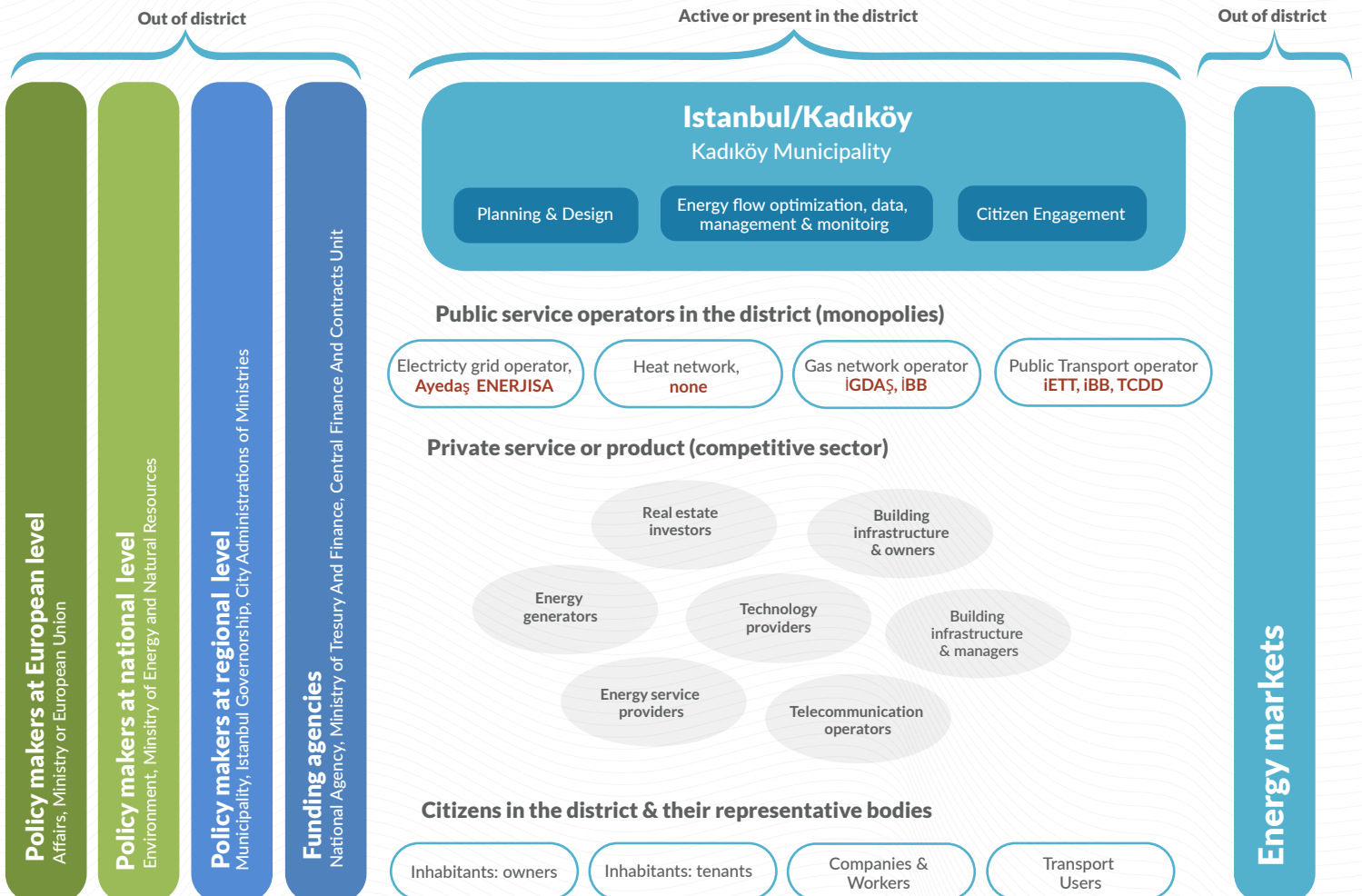
### Kadıköy's PED Business Model



### Financial Sources



### Stakeholder Involvement Strategy within PEDs



### Stakeholder Involvement & Needs

#### Enablers

- It is considered rather successful to engage stakeholders in different processes and new mechanisms are introduced in that regard, however, there also is still a lack of sense of urgency.
- Collaboration within the MAKING-CITY project is considered an enabler and success story in itself already. Both in the preparation process as well as execution.

#### Barriers

- Challenges regarding the availability of data on energy production and grid capacity. It is obtainable but often quite difficult as it is a private company.
- In terms of technical capacities, there is both difficulty/lack of technical expertise and limited staffing.
- The national government has a strong political influence.



**Achieving our goals will be incredibly challenging without citizen participation. Therefore, citizens must always be involved in both planning and implementation processes.**

*Doğan ÜNERİ, Geomorphologist, Kadıköy Municipality*

#### Capacity

Kadıköy SECAP is committed to the local energy transition, aiming to raise awareness and mentor citizens about PEDs. However, due to the financial reasons, it is not a priority for citizens. Increasing institutional capacity and securing funds and loans are necessary to support this transition.

#### Vulnerability & Inclusion

Kadıköy has many projects aimed at including disadvantaged groups in social life, and the Municipality accepts all related requests. The energy transition will also prioritize these groups. However, no studies have addressed their needs in terms of PEDs yet.

#### Economy

Financial mechanisms are not yet developed enough to reduce the costs of innovative materials and maximize multiple benefits yet. The high exchange rate affects the purchases to be made. In this context, the lack of financial instruments is felt.

#### Collaboration

Interest has increased due to the energy crisis and price hikes, but there is no national or local mobilization. Kadıköy Municipality informs interested citizens, but overall interest remains low, and public awareness is developing slowly.



**The imperative for capacity building lies in the necessity of exchanging knowledge.**




*Damla MUHCU, Project Manager, Kadıköy Municipality*

**To effectively leverage private investment, citizens must be at the center. A top-down approach, which has proven ineffective, needs to be reconsidered.**

*Esra Demir, Co-Founder / Managing Consultant Demir Enerji*

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This project received funding from the H2020 Programme under grant agreement n°824418. This content only reflects the author's view. The European Commission and INEA are not responsible for any use that may be made of the information it contains.