



# Cluj-Napoca

## Green. Digital. Resilient



# Cluj-Napoca:



**ECO**  
system

not

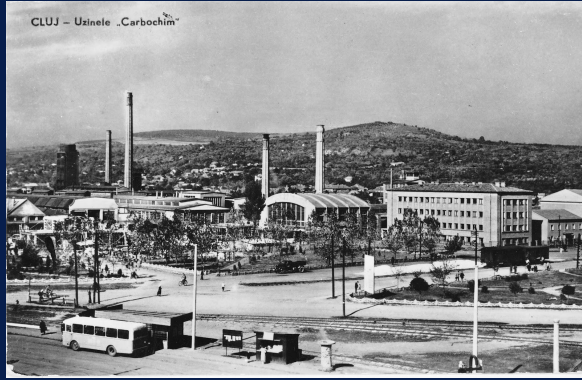
**EGO**  
system





## AGRICULTURAL ECONOMY

- The fair city
- Family business
- Sales
- Crafts



## INDUSTRIAL ECONOMY

- Industrial city
- Production
- Workshops
- Workers



## KNOWLEDGE BASED ECONOMY

- The city as Ecosystem
- Co-creation
- Participation
- Digitalization

***The economic profile of Cluj-Napoca - Evolution in time***



EUROPEAN UNION



# EU MISSIONS

**CLIMATE-NEUTRAL & SMART CITIES**

Concrete solutions for our greatest challenges



## CLUJ-NAPOCA



#EUmissions #HorizonEU #MissionCities

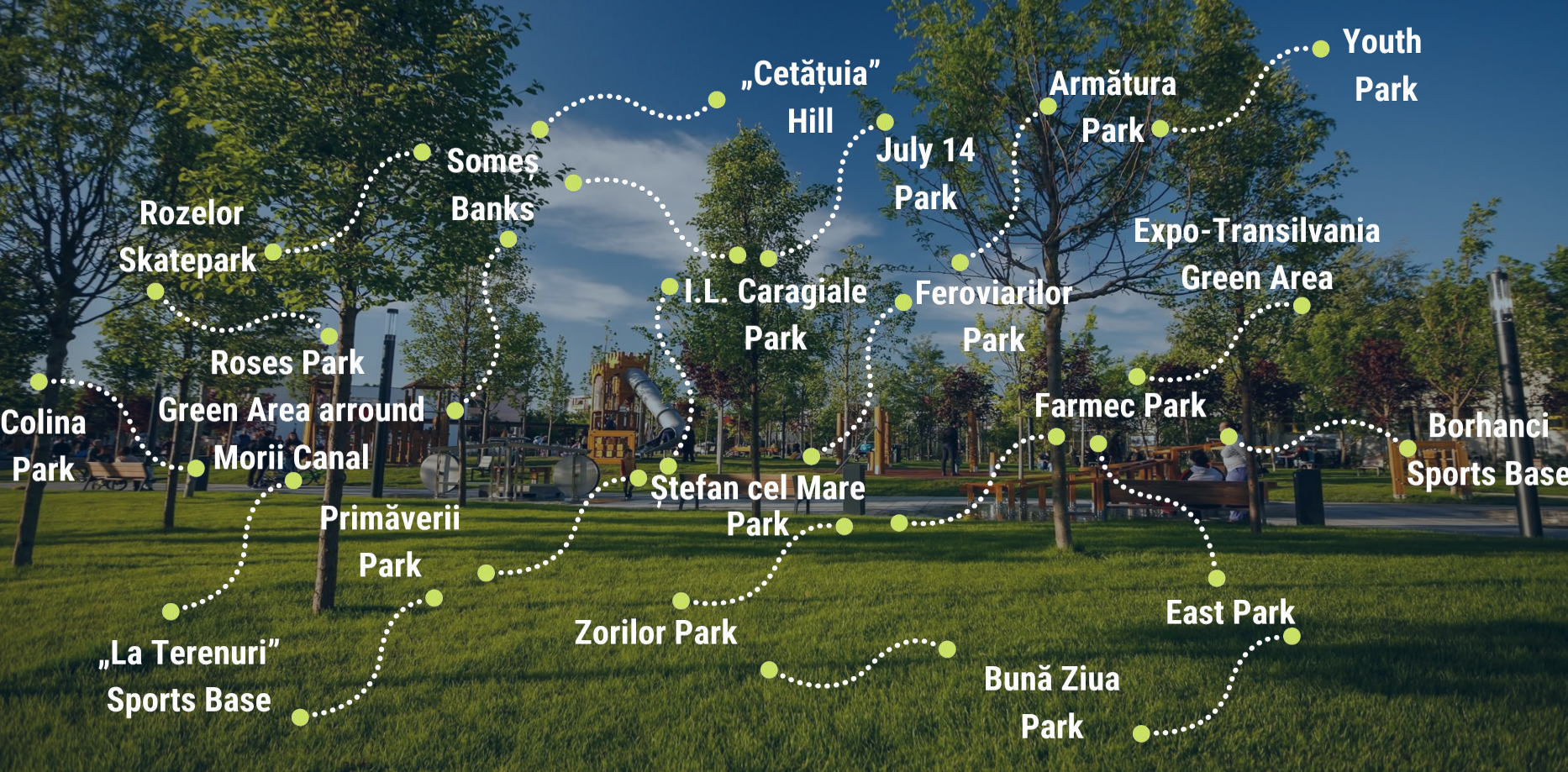
# EXPANSION AND MODERNIZATION OF GREEN SPACES

Objectives: Ensuring an environmentally friendly development of the municipality and its metropolitan area, so the area of green spaces is increased by 15% and CO2 emissions will be absorbed in proportion of 80%.

## GREEN DIMENSION OF THE CITY:

- 200 ha of new and expanded green spaces
- 100.000 trees planted in Cluj-Napoca by 2030

# GREEN DIMENSION OF THE CITY: 200 ha of new and expanded green spaces



"La Terenuri"  
Sports Base

Colina  
Park

Green Area around  
Morii Canal

Primăverii  
Park

Zorilor Park

"Cetățuia"  
Hill

I.L. Caragiale  
Park

Ștefan cel Mare  
Park

Bună Ziua  
Park

July 14  
Park

Feroviarilor  
Park

East Park

Armătura  
Park

Farmec Park

Youth  
Park

Expo-Transilvania  
Green Area

Borhanci  
Sports Base

Rozelor  
Skatepark

Someș  
Banks

Roses Park

Youth  
Park

# SUSTAINABLE URBAN MOBILITY MAJOR INFRASTRUCTURE PROJECTS

**Metropolitan ring** - includes bike track

**Metropolitan train and Metro system**

**Sustainable mobility corridors:** efficient transport systems within the city, prioritizing public transport, bikes and pedestrians

- **Northern corridor** - next to the train station
- **East-West corridor** - 4 areas around the city

**Blue-Green sustainable mobility corridor** alongside Someş river connecting the metropolitan area

# GREEN PUBLIC TRANSPORT



**Already implemented:  
European projects for green public transportation  
100 million euros**



# GREEN PUBLIC TRANSPORT

The City Hall objective is that the entire city's public transport fleet to be electric by 2026.

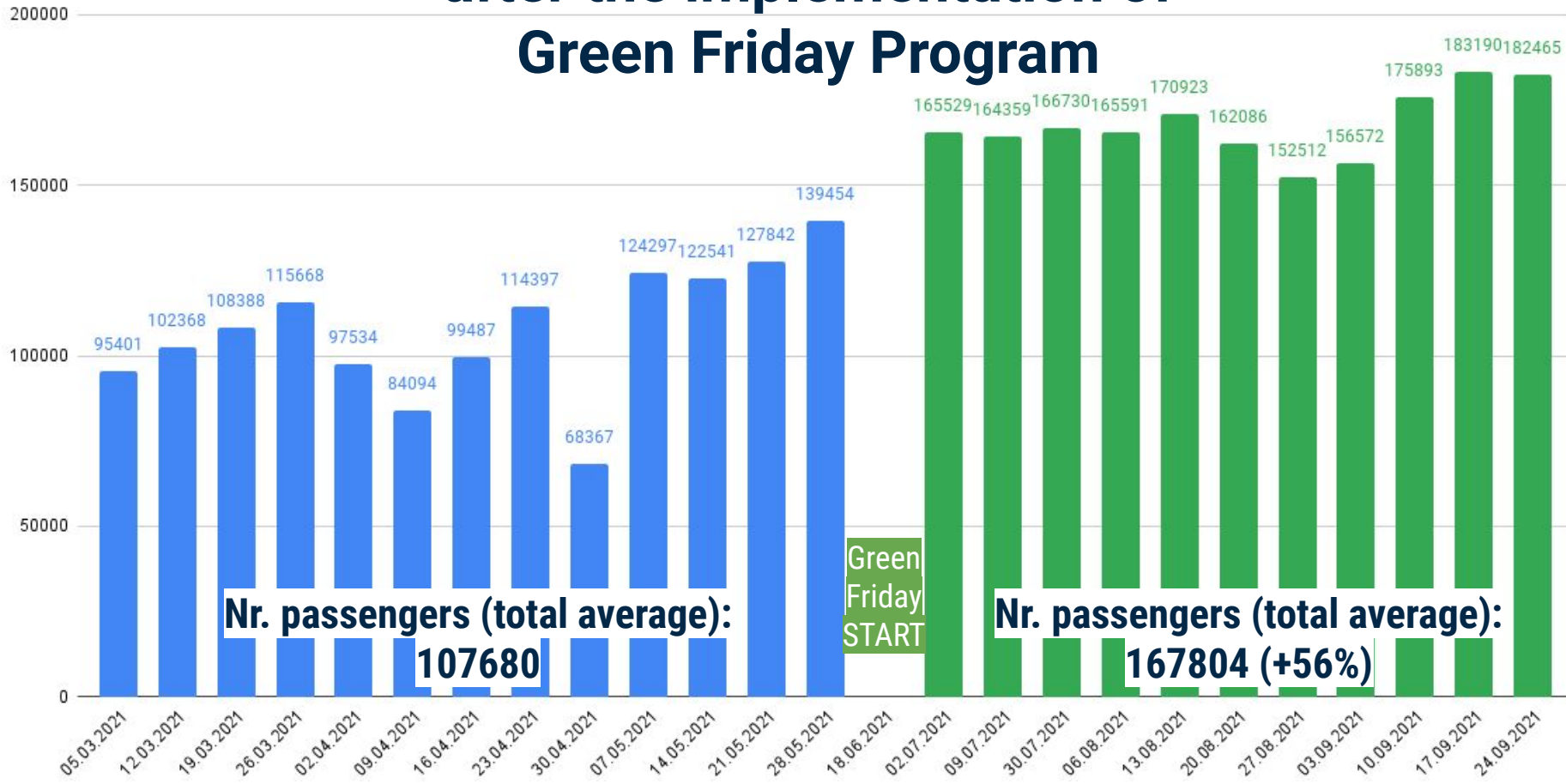


# SUSTAINABLE MOBILITY: POLICIES



**GREEN FRIDAY - free public transport on Fridays**

# The increase of public transport after the implementation of Green Friday Program



# GREEN PUBLIC TRANSPORT

## Dedicated bus & bike lanes



From neighborhoods to the central zone



Central Zone



# WALKABLE CITY

**Cluj-Napoca: Public policies for the elimination of road traffic**



# GREEN PUBLIC TRANSPORT



Inclusive community: **free public transportation** for retirees, pupils and students, **dedicated transportation programs**, **School Buses Program**.

# GREEN PUBLIC TRANSPORT

## Bike sharing system

**Expanding the network of bike lanes** by creating coherent routes. Principles of action: continuity, connections between neighborhoods, connecting the center to neighborhoods.







# CHARGING STATIONS IN HIGH TRAFFIC PUBLIC PLACES FOR ELECTRIC VEHICLES

(CARS, SCOOTERS AND BICYCLES)



# 44 charging stations for electric cars (free charging)

# DIGITAL SOLUTIONS: URBAN MOBILITY

- 🌍 **Ticketing system** (61 machines)
- 🌍 **Contactless payment by card in public transport** and card payment for parking; apps for payment of tickets and parking
- 🌍 **100 solar powered** parking meters
- 🌍 The entire public transport fleet was equipped with **GPS**

## Mobile apps:

- 🌍 **Tranzy** - display of arrival times of public transport
- 🌍 **Cluj Bike** - self-service bicycle rental network
- 🌍 **Cluj Parking** - for barrier car parks around the city
- 🌍 **STEP Hear** - for people with visual impairments
- 🌍 **CityParking Cluj** - free parking spaces - field sensors



# GREEN PUBLIC TRANSPORT

European projects prepared for 2021-2027 financial period related to green public transport.



**Purchase of autonomous buses (electric) and software development** - in the public procurement phase



**Hydrogen Buses - Fuel Cell Electric Bus - 40 pieces and a hydrogen production station**



**Electric buses, trolleybuses, extension of the trolleybus network and modernization of the tram depot**

Preliminary estimate - value of over 120 million euros

# Decarbonization & Ensuring the Green Transition



An aerial photograph of a city grid, likely Sopor, with a semi-transparent blue overlay. The text is centered over the image.

# Sustainable Urbanism

## „The city of 15 minutes walk”

**Sopor Neighborhood** - The first neighborhood in which you can access all of the important objectives: public transport stations, green spaces, schools, shops, etc. within a 15 minutes walk.

# WALKABLE CITY

Concept applied to reduce the need for mobility  
All new projects have a common objective - create sustainable & efficient mobility system  
Encourage micromobility & walking



# WALKABLE CITY

December 21, 1989 Boulevard



Before



After

# WALKABLE CITY

## Unirii Square



Before



After



# WALKABLE CITY

## Unirii Square



Before



After

# WALKABLE CITY

## Train Station Square



Before



After

# WALKABLE CITY

## CEC Bank Square



Before



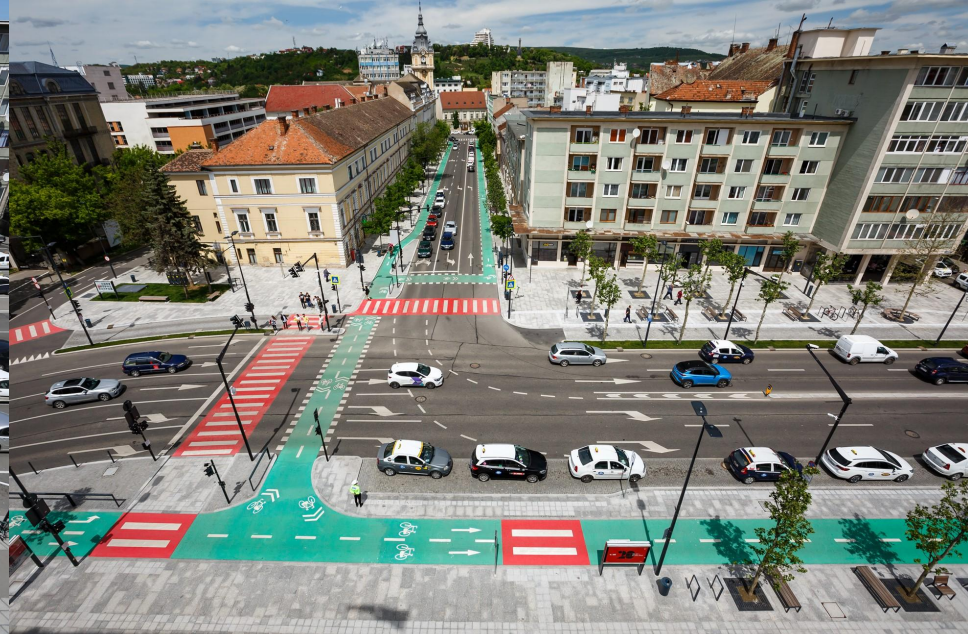
After

# WALKABLE CITY

## Lucian Blaga Square



Before



After

# WALKABLE CITY

## Cardinal Iuliu Hossu Street



Before



After

# WALKABLE CITY

## Emil Isac Street



Before



After

# WALKABLE CITY

## Emile Zola Street



Before



After

# WALKABLE CITY

## Emile Zola Street



Before



After



# WALKABLE CITY

## Emile Zola Street



Before



After

# WALKABLE CITY

## Sextil Pușcariu Street



Before



After

# WALKABLE CITY

## Sextil Pușcariu Street



Before




After

# ENERGY EFFICIENCY: New Heating Strategy approved


- 🌍 Objectives: 55% reduction of CO<sub>2</sub> by 2030, assuring 50% energy production from regenerable sources.
- 🌍 Individual installations for heating/domestic hot water in new residential buildings **have been banned**. New buildings will be connected to **district/neighbourhood heating installations**.
- 🌍 Public policies to encourage nzeb (nearly zero energy buildings)
- 🌍 Usage of high efficiency heat pumps and cogeneration engines
- 🌍 Implementing the so called **"heat islands"**

**Long term policies:** intake of CO<sub>2</sub> / utilization of hydrogen

# Smart Buildings for Energy Efficiency

 **Energy Efficiency and Deep Renovation of Public Buildings:** public schools and kindergartens (12 projects completed in the last 4 years; 14 projects in different stages of implementation; 10 solution contests for schools in preparation)

 **Energy Efficiency and Deep Renovation of Public Buildings:** Clujana Municipal Hospital

 **Energy management of public buildings & Promoting renewable energies**  
7 implemented projects on public buildings - producing energy from renewable sources



# Case Study

## Onisifor Ghibu High school

- 🌍 A new building with **33 classrooms** and **9 laboratories**, modernized school gym equipped with an **automatic consumption management system (BEMS - Building Energy Management System)**
- 🌍 Renewable energy sources: **photovoltaic panels** and **solar panels**
- 🌍 **LED lighting**, air conditioning system
- 🌍 **The first school in Romania to be certified by BREEAM** (Sustainability Assessment Method)



# Smart Lighting for Energy Efficiency

- 🌍 LED Street lighting: 30% of the public lighting system. Target by the end of 2030: 100%
- 🌍 No mercury vapor lamps in the city
- 🌍 Smart LED Lighting for municipal buildings (public parkings and markets)
- 🌍 Intelligent street lighting control system - Digitalization of public lightning network and lightning points
- 🌍 Better practices for energy acquisition
- 🌍 Integrated projects: modern infrastructure and public LED lighting





# PUBLIC POLICIES FOR ENERGY EFFICIENCY

- 🌍 **Green buildings** tax reduction
- 🌍 Strategic partnership with the Technical University for energetic management
- 🌍 **Energy efficiency** component for each new rehabilitation or extension of public building
- 🌍 **Green buildings** for ALL new education facilities



# *The Renovation Wave*

## Thermal rehabilitation for public and private buildings

Blocks rehabilitated through European programmes:

Already finished:

52 blocks with 1.866 apartments

Work in progress:

47 blocks with 2.159 apartments

In preparation:

100 de blocks with over 4.000 apartments

***Objective: All blocks in the city to be rehabilitated***

Supporting the district heating system - any new construction is being built with district heating not with individual boilers.





# PUBLIC POLICY

All public and private buildings that are built must have electric car charging stations.





# PROPOSED PUBLIC POLICY

All construction  
materials must be  
"environmentally  
friendly".



# CIRCULAR ECONOMY

- 🌍 **Underground platforms for waste collection** - 160 installed + 150 follows
- 🌍 **Solar powered smart collection bins** - 42 units in 14 zones in the city
- 🌍 **In development: "ecologic isles" for separate waste collection**

**In 2021, the quantity of recyclable waste collected  
has grown 6,2 times compared to 2017**



# CIRCULAR ECONOMY

- 🌍 Aboveground points for selective collection in crowded areas
- 🌍 Electronic waste disposal points
- 🌍 Building materials waste disposal points (for free)
- 🌍 Public policy for event & festivals to reduce waste & environmental impact
- 🌍 In development: **Recycle to get free public transport tickets**



# CIRCULAR ECONOMY



Creating **green roofs and facades** for public buildings: cinemas, parkings, bus stations a.o



# Improving resilience against risks & climate change

- 🌍 Programme for placing **urban taps and fountains** around the city
- 🌍 Implementing **smart irrigation systems** for public spaces
- 🌍 Improving **water courses**
- 🌍 Extending and rehabilitation works towards **land improvement**
- 🌍 Reducing pollution - **Cluj-Napoca has joined the Green City Accord**







